FOSTERING CONSUMER GREEN BUYING INTENTION TOWARDS RESIDENTIAL HOMES WITH GREEN LIVING CONCEPT THROUGH MARKETING ACTIVITIES

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DEDICATION

To my beloved wife, son, daughter, sisters, friends and family members.

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ABSTRACT

Residential property with a green living concept refers to housing development with environmentally friendly green features that range from design, construction and maintenance. Due to global warming, climate change, the greenhouse gas effect and the competitive property market, many property developers have opted to construct green property development to contribute to sustainable development. However, not many consumers intend to buy a home with the green living concept. Understanding consumers' green buying intention in the current competitive market becomes crucial to selling such property successfully. Thus, this research investigates the drivers of consumers' buying intention of properties with a green living concept. By employing the S-O-R theory, which can predict behavioural response when people are exposed to various stimuli, this research examines the effect of an environmental advertisement, green brand positioning, and environmental attitude towards consumers' buying intention towards housing with a green living concept. Moreover, this research also examines the moderating effect of willingness to pay more. Data were collected through a cross-sectional survey from Malaysian consumers. 370 usable questionnaires were analysed using the Partial Least Squares (SmartPLS 3.0) technique. The findings indicate that environmental advertisement and green brand positioning significantly affect consumers' environmental attitude and enhancing consumers' green buying intention. The findings of this research contribute to the understanding of housing developers' marketing policy and subsequently contribute to their market positioning strategy to attract green home buyers. It is suggested that green housing developers need to prioritize developing proper green positioning and environmental advertisement to positively change consumers' attitude towards housing with a green living concept. Nevertheless, willingness to pay more was found not to affect the relationship between environmental attitude and consumer's green buying intention. This result indicates that Malaysia's consumers are price-sensitive when considering purchasing residential property with a green living concept. Thus, housing developers need to price their houses reasonably.

ABSTRAK

Hartanah kediaman berteraskan konsep hijau merujuk kepada pembangunan perumahan dengan ciri-ciri hijau mesra alam yang merangkumi reka bentuk, pembinaan dan penyelenggaraan. Disebabkan pemanasan global, perubahan iklim, kesan gas rumah hijau dan pasaran perumahan yang kompetitif, banyak pemaju perumahan telah memilih untuk membina hartanah kediaman berteraskan konsep hijau demi menyumbang kepada pembangunan lestari. Namun, tidak semua penguna ingin membeli hartanah kediaman berteraskan konsep hijau. Memahami niat pengguna terhadap pembelian hijau dalam pasaran semasa yang kompetitif ini menjadi faktor penting dalam penjualan hartanah tersebut. Oleh itu, kajian ini bertujuan untuk mengkaji niat pengguna untuk membeli hartanah kediaman berteraskan konsep hijau. Dengan menggunakan teori S-O-R yang dapat meramal tindak balas seseorang yang terdedah kepada pelbagai rangsangan, kajian ini meneliti kesan pengiklanan persekitaran, kedudukan jenama hijau, dan sikap alam sekitar terhadap niat pengguna untuk membeli hartanah kediaman berteraskan konsep hijau. Disamping itu, penyelidikan ini juga mengkaji kesan perantaraan kesediaan penguna untuk membayar lebih. Data dikumpulkan melalui kajian keratan rentas dari pengguna di Malaysia. 370 soal selidik yang boleh digunapakai dianalisis menggunakan teknik Pemodelan Persamaan Struktur (SmartPLS 3.0). Hasil kajian menunjukkan bahawa pengiklanan persekitaran dan kedudukan jenama hijau secara signifikan mempengaruhi sikap persekitaran dan meningkatkan niat pengguna untuk membuat pembelian hijau. Hasil kajian ini menyumbang kepada pemahaman mengenai dasar pemasaran pemaju perumahan dan seterusnya menyumbang kepada strategi kedudukan pasaran mereka untuk menarik pembeli hartanah kediaman berteraskan konsep hijau. Ia juga mencadangkan bahawa pemaju perumahan hijau yang berteraskan konsep hijau perlu mengutamakan pembinaan kedudukan pasaran hijau mereka dan pengiklanan persekitaran untuk mengubah sikap positif pengguna. Walaubagaimanapun, kesediaan untuk membayar lebih didapati tidak mempengaruhi hubungan di antara sikap persekitaran dan niat pembelian hijau dikalangan pengguna. Hasil kajian ini menunjukkan bahawa pengguna di Malaysia adalah sensitif terhadap harga dalam mempertimbangkan pembelian hartanah kediaman berteraskan konsep hijau. Oleh itu, pemaju perumahan perlu meletakkan harga rumah yang berpatutan.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

BI	-	Green Buying Intention
EA	-	Environmental Advertisement
EAT	-	Environmental Attitude
EP	-	Emotional Positioning
FP	-	Functional Positioning
GP	-	Green Positioning
PLS	-	Partial Least Square
AVE	-	Average Variance Extract
CR	-	Composite Reliability
SPSS	-	Statistical Package for Social Sciences
PLS	-	Partial Least Square
SMS	-	Short Message Services
DV	-	Dependant Variable
IV	-	Independent Variable
CMV	-	Common Method Variance
HTMT	-	Heterotrait-Monotrait
PCA	-	Principle Component Analysis
EFA	-	Exploratory Factor Analysis
CFA	-	Confirmatory Factor Analysis
RM	-	Ringgit Malaysia

LIST OF SYMBOLS

f^2	-	Effect Size
R^2	-	Coefficients of Determination
Q^2	-	Predictive Relevance
β	-	Beta
H	-	Hypothesis
CO_2	-	Carbon dioxide
D^2	-	Mahalanobis distance

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

In recent years, consumers are more conscious of environmental issues such as environmental hazards that have shaken businesses and the general public across the world. Hence, internationally, governments and the public have expressed concern about the threat of environmental pollution. Past studies indicate that the construction industry, which includes property development such as mass housing projects, contributes significantly to environmental degradation (Sivadasan and Basiruddin, 2019; Nordin, Abd-Halim and Yunus, 2017; Yoong, Lim, Lee, Zakaria and Foo, 2017). Along with the growth of countries and their social advancement, in line with population growth, demand for construction is unavoidable. Therefore, an alternative pattern of construction and development with reduced environmental damage and enhanced sustainability is highly desirable (Ding, 2008; Wahi, Mohamad, Zin, Munikanan and Junaini, 2018).

Environmental deprivation and extreme CO_2 emission significantly impact the quality of life worldwide, giving rise to the concept of green development, which became an international agenda to ensure sustainability of people's standard of living while protecting nature from damages caused by the economic pursuit of rapid development (Hayward, 2020; Mishra and Kauškale, 2017; UNDP, 2012). Many European countries and America, Australia, Singapore, China, Japan, Thailand and Malaysia focus on the green living concept of development of residential areas to uplift their society and ensure comfortable living (Elias and Lin, 2015). This condition is achieved with durable houses and sustained through the efficient use of energy from green technology.

In Malaysia, the role of environmental and its impact on the society is recognised by the government and has imposed mandatory environmental impact assessment (EIA) report before to the commencement of any government or private projects. The EIA report is reviewed by a committee comprised of technical professional panels from government agencies, the private sector, non-governmental agencies and universities (Memon, 2000). A study by Bazrbachi, Sidique, Shamsudin, Radam, Kaffashi and Adam (2017) found that as a result of rapid population growth in the urban areas such as Klang Vally, which indirectly had caused a massive rise in air pollution that would impact the economic activities of people living in urbanised localities. Similarly, developing country such as Malaysia is also expected to face water scarcity in the next fifty years due to the growing population that increase demand for freshwater which is used for food, agriculture and industrial needs (Aghili, Hosseini, Mohammed and Abidin, 2019; Hanafiah, Ghazali, Harun, Abdulaali, AbdulHasan and Kamarudin, 2019).

Populated cities in Malaysia such as in Kuala Lumpur and Penang are seen to have green spaces shrinking by the day, potentially effecting psychological wellbeing of urban folks (Ahmad, Ahmad and Abdullah, 2009). As to encourage the property sector in Malaysia, the government have set up a framework known as the 'Green Building Index' (GBI) to assess green buildings ecological performance and design. The Malaysian Institute of Architects and the Association of Consulting Engineers Malaysia (ACEM) jointly developed this GBI rating system with the government of Malaysia (Algburi, Faieza and Baharudin, 2016; Bahruddin and Mohd, 2019.). However, there is no empirical evidence indicating statistical data for tracking the specific purchase of green housing development in Malaysia. Existing data for purchase of residential property from the Department of Statistics, Ministry of Finance and Bank Negara Malaysia are all generalised figures with a mixture from conventional and green housing development projects.

A study by Zhang, Chen, Wu, Zhang and Song (2018) on young consumers' purchase intention of green houses in China found that governmental incentives were the strongest determinant of influencing green purchase intention for green housing. Therefore, the government as policymakers, play a crucial role in guiding young

consumers to influence green buying by formulating various economic portfolios and incentives that would benefit the consumers in the long run. The study outcome also suggested that governments can introduce subsidies for housing developers such as energy savings, water-saving and low maintenance costs, or set up public-private win-win partnerships to enhance buying of green houses (Onuoha, Aliagha and Rahman, 2018; Zhang et al., 2018). Therefore, the government, housing developers and non-governmental organisation should encourage the general public to know more about green housing development and its universal benefits to the environment (Yang, Zhang and Zhao, 2018). A literature study by Kaklauskas, Lepkova, Raslanas, Vetloviene, Milevicius and Sepliakov (2021) in Europe and other major countries in the world during Covid-19 pandemic indicate that there is a major shift in the realization among consumers preferring sustainable green housing that does not harm the environment. It further elaborates that the people post-pandemic would end up in a cleaner and healthier world and the households would demand quality, comfortable green houses offering healthy living and working conditions. Such finding further justifies the need for the current study to understand the drivers that enhance buying of houses with a green living concept.

Home buyers in Malaysia are displaying a satisfaction trend by preferring an emphasis on externality factors such as neighbourhood stability and local amenities that would increase social links among neighbours to enhance interaction (Teck-Hong, 2012; Yap, Yong and Skitmore, 2019). Malaysian consumers consider neighbourhood, environment, location, accessibility, security, crime rate, infrastructure and pricing before purchasing a house (Jamil, Mohd and Masrom, 2020). This trend may indicate a growing preference for consumers to buy green houses in Malaysia. Even though the transformation and preference of consumers in Malaysia are shifting towards buying green products, there is no empirical evidence of an increase in the purchase of green housing products in Malaysia. Therefore, the study to understand consumers green intention for residential houses becomes essential.

Based on the discussion above, Malaysian consumers are displaying an affinity to desire to buy green products and green brands. Such affinity of consumers to buy a product by considering attributes that would protect the environment is a display of

green buying intention behaviour (Yusiana, Widodo, Hidayat and Oktaviani, 2020). Purchase intention represents what consumers think they would buy and will exhibit higher actual buying rates, or also known as the best predictor of the actual buying (Wee, Ariff, Zakuan, Tajudin, Ismail and Ishak, 2014). Studies have shown that when it comes to buying green, consumers are quality and price-sensitive, hence researchers tend to identify green consumers' profiles, using intention to buy (D'Souza, Taghian and Khosla, 2007).

The purchase intention for green products varies across culture, gender and individual behaviour of a person. For example, in India, studies have shown that the concern displayed by people towards the environment does not translate into green consumption, therefore it has become very important to analyse the green purchase intention of consumers (Sreen, Purbey and Sadarangani, 2018). Therefore, it is undeniable that the examination of green buying intention is very important in green marketing study to understand consumers behaviour towards green products. However, thus far, limited studies have explored the drivers of consumers' green purchase intention for homes with a green living concept in Malaysia, due to the green housing sector which is still in an infancy stage (Ang, Olanrewaju, Chia and Tan, 2017).

This phenomenon is almost similar compared to a country like China where the construction and sales of green homes and building accelerated significantly over the recent years, nevertheless, the overall market penetration of green buildings remain limited (Jiang and Payne, 2019). In Malaysia, the sales of overall residential houses further declined by the slowdown of the property sector (MOF, 2018). This decline in the property sector may have further disguised the sales and popularity of green homes in Malaysia. The level of green housing developments and their benefits are still low amongst Malaysian consumers (Ang, Olanrewaju, Chia and Tan, 2017;.Lim, Tan and Hambira, 2018). However, in the opinion of the housing developers, the material required for the construction of the green houses are readily available locally in Malaysia (Nordin, Abd-Halim and Yunus, 2017).

Current activities of green building in Malaysia are specifically catered to tackle the rising high energy consumption and one of the main factors to achieve it is by behavioural change (Mohd-Rahim, Pirotti, Keshavarzsaleh, Zainon and Zakaria, 2017). Yet, green property developments create distinct exemplary eco-city with passive design, transportation, energy supply, water, waste management and recycling effort based on the principle of low carbon and encourage societal change towards sustainability (Griffiths and Sovacool, 2020). Therefore, housing developers should play an important role in sustainability through the housing project execution (Isa, Albahori, Alias and Ismail, 2019). Considering its impact on greater sustainability, this study embarked on an investigation of the factors affecting consumers' intention towards the purchase of residential properties with the green living concept. Table 1.1 shows the summary of studies on green housing development done in Malaysia.

Table 1.1 Summary Table of Relevant Past Studies from Malaysia on Green Housing

Name of the author (s) and year of publication	Research context	Objective / Research question	Methodology used in this study	Findings
Bahruddin and Mohd (2019)	Malaysia Housing developers that had been awarded green housing certificate within Kuala Lumpur and Selangor.	The determining enabling factors that will be considered in developing green housing projects.	N = 55 Purposive sampling method SPSS	16 significant enabling factors include the authority of government, enforcement of the acts and regulations, the importance of technology, better technology, importance of soft skill, support from educational sectors, exposition to knowledge, availability of organization, growing awareness, experts' commitment, projection of green management, development of companies policy, importance of developers, importance of resources and capabilities, organization system and lastly, customers' attraction.
Lim, Tan and Hambira (2018)	Malaysia General public before and after visiting website.	To enhance the public's awareness on green housing by developing an interactive website to illustrate the differences between the	N = 100 Sampling technique not mentioned	The green home concept is still at infancy stage in Malaysia Public awareness has increased drastically using the interactive website approach.

		conventional homes and green homes and its impact on the environment	ADDIE model website approach	Foresee increase in demand for green housing developments with the growth in environmental awareness.
Mohd-Rahim, Pirotti, Keshavarzsaleh, Zainon and Zakaria (2017)	Malaysia	To investigate a position of project management, which is less associated with engineering and technology in construction, and to represent a framework based upon the case of successfully accomplished buildings.	Literature review	Four core factors of retrofitting are identified: a) Energy efficiency improvement; b) Technological change; c) Organizational/managerial challenges, and d) Behavioural change.
Nordin, Halim and Yunus (2017)	Malaysia Property developers Managers, Directors and Executives	To identify current level of awareness and understanding regarding the Green Home concept, identifying the challenges that contribute to lack of initiatives in implementation of green home development	N = 20 Qualitative Methods	Cost factor is greatest challenge to its implementation. Others include low awareness and understanding among construction players and public, low demand for green home, and lack of government enforcement and initiatives.

Aghili, Hosseini, Mohammed and Abidin (2019)	Malaysia Experienced green building experts, green building managers, and professional facilitators	To quantify the relative importance index (RII) of management of the green building factors and ranked the factors and groups consistent with their relevance level in management criteria.	N = 35 RII technique	Management green buildings factors based on important include; (1) Sustainable Procurement; (2) Sustainable Operation; (3) Environmental Health; (4) Repair and Maintenance management; (5) Resource Management.
Ang, Olanrewaju, Chia and Tan (2017)	Malaysia Homebuyers of sustainable housing	To explore the awareness of homebuyers in Malaysia towards sustainable affordable housing.	Qualitative - method of unstructured interview Porter Five Forces Model	Homebuyers' requirements hold the bargaining power of customers to determine the features of housing provided by the property developer.
Yap, Yong and Skitmore (2019)	Malaysia Potential homebuyers comprising of Generation Z, Generation Y, Generation X, and Baby Boomers	To examine the quality attributes influencing the value of housing and their effect on housing prices according to generation cohorts and affordable housing prices.	N = 45 Cross-sectional quantitative approach (RII) technique	Five major underlying dimensions of these attributes: locational qualities, values and lifestyles, the availability of public amenities, surrounding environment and product uniqueness, and accessibility.

Wahi, Mohamad, Zin, Munikanan and Junaini (2018)	Malaysia stay in the high-rise low cost housing	To examine sustainable neighbourhood elements specifically green elements application on the high rise low cost housing in Malaysia.	N = 510 Self administered survey SPSS	Focused should be on sustainable neighbourhood planning and design especially on the high rise low cost housing
Said, Daud, Esha, Majid and Najib (2017)	Malaysia Residents in both Kuching Utara and Kuching Selatan, Samarahan and Batu Kawa.	Affordability of sustainable green housing in Sarawak.	N = 471 Sampling technique not mentioned COPRAS	Area with a high degree of utility conforms best to sustainable housing affordability while the area with a lower degree of utility performs poorly.
Onuoha, Aliagha and Rahman (2018)	Malaysia Real estate developers and investors	To identify and model the motivating factors that influence developers' and investors' decisions to invest in green commercial properties u	N = 350 Purposive sampling technique AMOS Social Cognitive Theory (SCT)	Monetary green tax incentives and green skills have significant causal effects on supply

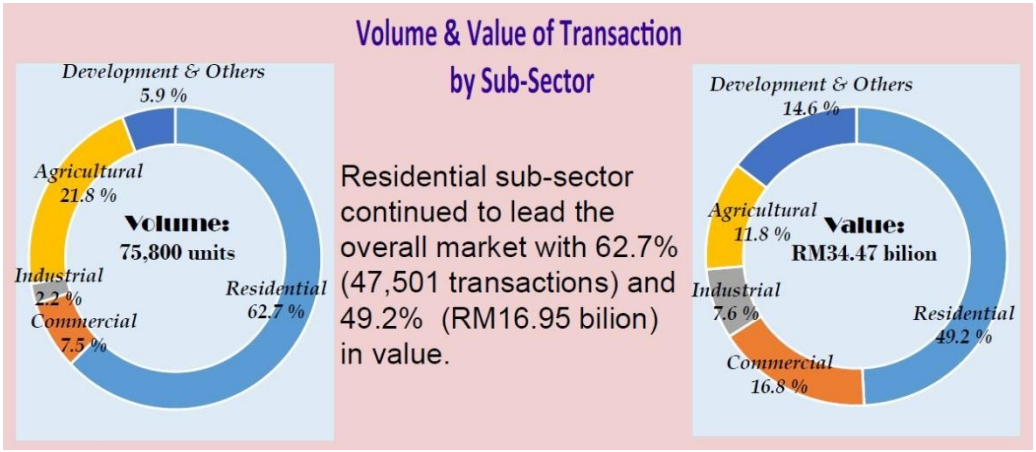
Isa, Albahori, Alias and Ismail (2019)	Malaysia 30 housing developers	Factors affecting the execution of the green building project among the housing developers in Klang Valley.	N = 30 non-probability convenience sampling SPSS	Level of knowledge, emotion, value, attitude, behaviour and the potential factors affecting the execution of the green building projects among the housing developers in Klang Valley

Source: Compiled by the researcher

1.2 The Research Context

In general, residential property consists of houses that people live in, as distinguished from commercial property, where activities are conducted on the premises. In Malaysia, the residential sub-sector continued to drive overall market activity with a 61.8% market share compared with other property sub-sectors and 48.4% in the value of residential properties amounting to RM62.82 billion (MOF, 2017). Figure 1.1 shows that the residential property market had a volume of 47,501 transactions, or 62.7% belonging to the residential sub-sector, amounting to RM16.95 billion, or 49.2% of the residential sub-sector.

Figure 1.1 Residential Property Leading the Property Sector



Source: (MOF, 2017)

Properties with green living concept, which are also referred to as green developments or green real-estate development, are examples of sustainable housing development featuring sustainable building design, construction, landscaping design, pioneering green materials, building maintenance operations, landsite planning, project planning and other elements that are supposed to fulfil win-win social, economic and environmental conditions (Zhang, 2015). Table 1.1 lists general differences between conventional housing and green housing development, in describing the evolution of the housing industry, which started off with conventional housing, gradually evolving to green building and on to more sustainable homes, such as green housing developments (Elias et al., 2015; Newell et al., 2008; Shen, Zhang

and Zhang, 2017; Shazmin et al., 2016; Zhang, Platten and Shen, 2011; Zhang, 2015 and Zhang, Wu and Liu, 2018). The table also shows key differences between green buildings, which focus more on quantifying energy saving functions, and green property development, which is a more wholesome approach to addressing the environmental functionality of a building and its surroundings. Table 1.2 also summarises the evolution of the property industry, from conventional housing schemes to environmentally friendly green buildings and, finally, to a wholesome development of sustainable homes and their surroundings. This represents a holistic township approach to preservation and protection of the environment. The main driver of these kinds of projects are the housing developers, involving stakeholders from planning, design, construction, sales, marketing and after-sales activities. Hence, sustainable green property development is the way forward in the property industry worldwide (Ang, Olanrewaju, Chia and Tan, 2017; Bahruddin and Mohd, 2019; Darko, Chan and Owusu, 2018; Huang, Wu and Yang, 2019; Immergluck and Balan, 2018; Jiang and Payne, 2019; Lim, Tan and Hambira, 2018; Nordin, Halim and Yunus, 2017; Said, Daud, Esha, Majid and Najib, 2017; Sivadasan, Quoquab, Mohammad and Basiruddin, 2020; Zhang, Chen, Wu, Xue and Dong, 2018). The relevance of this study is enhanced by these progressive trends. For the purpose of this study, green property development is also described as property with green living concept and both share the same meaning.

Table 1.2 Synthesizing the Different Between Conventional Housing Estate, Green Buildings and Green Property Development.

Criteria	**Conventional housing developments**	**Green buildings**	**Green property developments**
Definition	Buildings for living and commerce activities	Healthy facilities built to save energy/resources	Sustainable township developments which enhance living and take care of the environment

Criteria	Conventional housing developments	Green buildings	Green property developments
Stakeholder	Government, property developers, suppliers, design consultants, project managers, contractors, consumers	Government, universities, research institute, property developers, green suppliers, design consultants, project managers, contractors, consumers	Government, universities, research institute, property developers, financial institute, green suppliers, design consultants, project managers, contractors, consumers
Change propeller	Government and property developer	Government	Property developer
Scope	Mass housing and commercial buildings	Limited to high-rise buildings or commercial/office buildings	Holistic mix township developments with commercial and residential communities
Focus	Sales and marketing	Construction and operation	Planning, design, construction, sales and marketing, operation and property maintenance
Green perspective	Superficial	Partial	Integral
Design	Basic Building and infrastructure design	Building design	Full life cycle design

Source: Adopted from Zhang (2015)

Homes with green living concept are also known as ‘green property development’ or ‘green real-estate development’. Based on the information in Table 1.1, as elaborated by Zhang (2015), it is a location of townships with a mixture of residential and commercial properties, and overall, the whole township is integrated

with sustainable features. In the property industry, it is also known as ‘sustainable development’ or ‘sustainable housing development’. Since the word ‘sustainable’ is overused in all types of sectors, the researcher selected the term ‘homes with green living concept’, which represents the same meaning for this study, to avoid confusing readers from other sectors or industries. On the other hand, green real estate has the same meaning or equivalence to green property development. In general, it is noted that some countries widely use the term ‘residential real estate’, while other countries prefer to use ‘residential property’, and both terms have the same meaning.

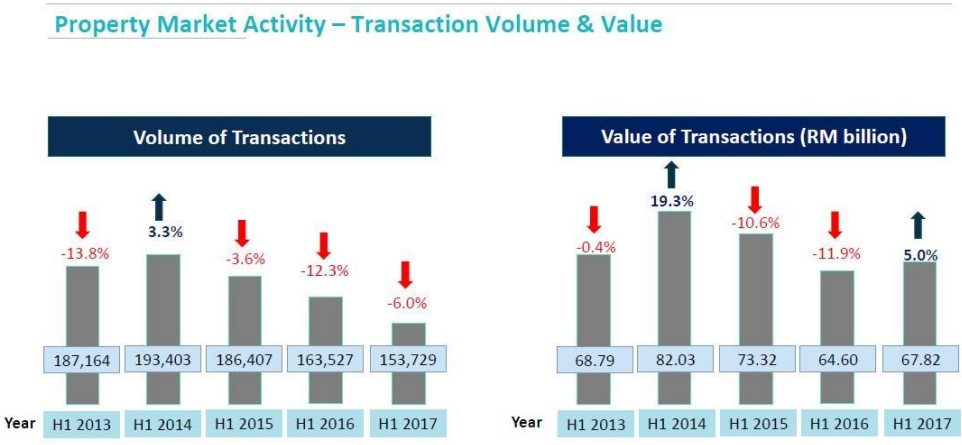
Generally, businesses around the world rethink their business activities and use new avenues such as the concept of green marketing to attract customers. Hence, ‘sustainable living’ is noted as one of the common green marketing terminologies used to attract consumers in the property sector (Woo and Khoo, 2020). On the other hand, sustainable living is not a myth, but a type of lifestyle that reduces peoples, or society’s, earth usage and its natural resources, minimising potential damage to the environment (Abdul-Ghani and Lee, 2015).

Mohamad, Nawawi and Sipan (2016) found that the concept of green development has matured in developed countries to the extent that their governments emphasise and regulate it with strict laws, compared with undeveloped or developing countries such as Malaysia, where this concept is at a very juvenile stage and where very little research has been done on the awareness of the green home concept. Mohamad et al. (2016) also found that indicators for building, locational and neighbourhood qualities are researched and even reviewed in their individual conditions. Furthermore, Abdul-Ghani and Lee (2015) found a positive relationship between a growing demand to go green in the property development industry because house buyers are more environment conscious. This discussion suggests that there is a shift in Malaysian consumers’ preferences towards houses with green living concept, although to what extent these shifts have been studied remains vague.

Owing to the difference in nature, according to Shazmin et al. (2016), governments of several countries, such as the United States, India, Spain, Romania, Italy, Bulgaria, Canada and Malaysia, have started to provide property tax incentives

to housing development companies that produce green housing to reassure and promote the green building industry's growth. Meanwhile Olanrewaju et al. (2016) noted that the housing market in Malaysia is highly volatile and that it is expected to increase in quantity remarkably because of swift population growth, change in the economic status of citizens, interstate migration, changing tastes and upgraders. Thus, even though the need for low-cost housing for the poor continues, the future will witness a shift in emphasis in the delivery of vibrant housing supply, making it commensurate with the status of the country. Above all, this is supported by MOF (2017) statistics, which show that even though the volume of property transactions is dropping, the value of the transacted property is showing an increase in cost. This trend could signify that despite the drop in transactions volume, consumers' preferences have changed in favour of high-quality property, which is pricier than conventional ones (Figure 1.2). Figure 1.2 shows that despite the drop in the number of houses sold, as in the left-hand side graph, the transacted value of the houses has increased, as in the right-hand side graph.

Figure 1.2 Residential Property Performances from 2013 to 2017



Source: (MOF, 2017)

In other parts of the world, such as Taiwan, housing developers' current pricing strategies are based on their own intuition and expected profits, because balancing consumer-perceived prices and developers' expected profits is extremely difficult (Juan, Hsu and Xie, 2017). According to Zhang et al. (2018), developers tend to adopt green design and technology only if there is evidence of financial returns, enhanced

corporate reputation and government subsidies that exceed the 'going-green' cost. However, Shen et al. (2017) study of China's development market looks at their external factors, namely their customers who strongly influence their green purchase initiatives, although Olanrewaju et al. (2016) claim that Malaysians spend most of their income on housing than on any other goods and services. Their findings suggest that to control artificial demand, the government should create more public facilities such as parks for the people in the suburbs, instead of depending on housing developers to provide them. As more housing developers in advanced countries are facing issues with property price fixing, it could be assumed that many are looking into various means such as prioritising consumer's behavioural studies to market their products, and Malaysia's property market is igniting similar momentum, owing to its currently competitive market. Furthermore, according to Abdul-Ghani and Lee (2015), most property developers in Malaysia are competing to showcase innovative lifestyle housing products that provide homeowners with a comfortable living experience. These trends may suggest that many housing developers are trying to outdo one other in selling properties.

A study of China's property market by Zhang et al. (2018) reveals that government subsidies to home buyers usually provide guaranteed demand for green housing and help to jump-start the green housing sector. According to the author, the consumer might initially not have the requisite knowledge of what they are buying when considering the purchase of a green home. But only after residing in these homes do they really realise the true benefit of green homes as they learn about their cost-saving benefits, thus generating further demand in the market for future green homes. Hence, according to Zhang et al. (2018), green housing development is noted to be more rapid in city areas with more educated and wealthier residents. The foregoing discussion highlights the government's involvement in promoting the green housing sector in China. However there is a lack of literature indicating a similar role of the government in Malaysia. Hence, the private sector, such as property developers, plays the main role in propagating and promoting green housing locally.

Sreen, Purbey and Sadarangani (2018), who conducted a study in India, where the green marketing concept is still immature, reported that marketers face scepticism

and accusations of misleading advertising in regard to green products through unbelievable means. Encinas, Marmolejo-Duarte, Flor and Aguirre (2018) found that in Chile marketing information provided to consumers is very important in their decision to buy green homes, and, hence, green advertisements or companies' messages on their green branding activities have to be clear and precise, with data supporting their claim. They noted that green information couched in vague terms in marketing literature would deter consumers from buying green homes. Thus, the study highlights the role of green marketing elements such as environmental advertising and green brand positioning, which are an external stimulant that falls within the marketers' control. Abuamer and Boolaky (2015) indicate that the marketing strategy of green buildings is evolving daily, differing from methods used to market conventional buildings. They explain that its success is driven by consumer demand rather than enforced rules and regulations.

Owing to the difference in nature, Yadav and Pathak (2017) claim that in the Indian context, purchasing green products is positively related to consumers' attitude towards green products and is followed by perceived behavioural control and their willingness to pay premium. Recently, Liobikiene et al. (2017), finding a positive relationship between environmentally friendly behaviour and green purchase behaviour, noted that price remains an important factor in purchase decisions and could act as the main obstacle to selecting green products, which are always priced higher than non-green products. It is clear that researchers identify price as an important factor in consumers' green purchase decisions.

On the other hand, Strangelly et al. (2017) found that consumers are willing to pay more for green products. They suggested that companies custom-make or tailor their green marketing campaign to the target market according to different levels of green consumers' environmental know-how and advocated research on identifying and classifying different approaches to green marketing strategy, based on various options of the industry and its firms' characteristics. Clearly, there is a dearth of studies on how marketing campaigns can be custom-made to unlock green buying intention according to different industries' requirements, justifying the need for the present study to bridge the research gap on marketing and consumer behaviour in Malaysia's

property sector. Finally, Saleh, Hwa and Majid (2016) posit that, in general, satisfactory housing is one of the most valuable aspects of people lives and a significant element in meeting their needs. In fact, Zhang et al. (2018) emphasise that energy pricing and carbon trading should focus on policies to steer individual behaviour towards achieving better green building performance outcomes.

Despite all these efforts, government bodies such as MOF (2017) have emphasised that the issue of residential property overhang must be addressed by all parties such as local authorities and property developers, where both exercise due diligence before arriving at development decisions to avoid oversupply (where the supply of unsold residential homes is constantly increasing over the years). The term 'property overhang' refers to housing developers' properties that are on the market but still remain unsold (MOF, 2018). In the MOF (2017) report, most of the overhang properties consist of high-rise residential buildings such as apartments that are oversupplied in certain areas. Currently, owing to market conditions, MOF (2017) expects the property market to remain soft or stagnant in the next couple of years, with the residential sub-sector continuing to drive the overall market. Slow market absorption has led to an increase in unsold residential homes to 20,867 units, worth RM12.26 billion, and unsold volume and value has risen by 40% against the preceding half of 2016. The property overhang could be a market indicator that Malaysia's property developers are bringing products to market that do not match current needs, showing that property developers do not understand consumers' needs and requirements. One therefore wonders whether this study has become relevant to resolving the current market predicament.

However, despite the property overhang issue, it has to be noted that, according to Bank Negara Malaysia (2018), consumers' bank loans for the purchase of residential properties are growing for properties valued at above RM500,000 while the number of unsold housing units has increased to at least 146,196 units as of the end of the first quarter of 2018. Although this sounds strange, it could be an indication that consumers' buying behaviour is shifting towards a new or hitherto unknown paradigm that crucially needs to be investigated, so as to help property developers to better understand consumers' current market needs and intentions. On the other hand, one

might conclude that as the market is slowing down and becoming more competitive buyers are abandoning conventional high-rise homes to buy landed residential homes that come with better living quality, even though they are situated in the suburbs. This is further supported by the share of residential property loans settled within three years (for speculators who dispose of or cash out their property quickly after receiving vacant possession of the property) continuing to decline from previous years, indicating a downtrend in the market in speculative property purchases (Bank Negara Malaysia, 2018). Such downtrend of speculative property buying indicate that current purchasers are buying to stay instead of investing in property for a quick investment gain. Therefore, consumers would be more concern on the quality, sustainability and the surrounding of the home that they would be residing.

In regard to this, Newell and Manaf (2008) point out that the language of sustainability has become an essential part of Malaysia's property industry, as reflected by the use of environmental protection terms in strategic property planning and annual reports. This shows that sustainability has assumed increased prominence for Malaysia's property industry in recent years. Meanwhile, a study by Abdul-Ghani and Lee (2015) found that many housing developers are moving towards the luxury to high-end properties that have key features that promote lifestyle living, entailing huge capital investments into elegant landscaping and public infrastructure that integrates modern living components. Furthermore, Hussain et al. (2014) found that landscape design, which determines environmental quality, influences the value of residential development. This finding has received support from Abdul-Ghani and Lee (2015), who claim that purchasing preferences of house buyers are determined by the overall picture of the development and what meets their lifestyle. Perhaps these findings will motivate more property developers to use greener methods of incorporating ecologically friendly and innovative designs into their developments.

According to Hu, Geertman and Hooimeijer (2014), consumers buy green buildings not on the basis of their high-tech features or energy performance, but on the basis of the health benefits that green buildings offer. For instance, Hu et al. (2014) suggested that current evaluation factors that guide developers and town planners are number-centric and not human oriented and argued that developers and town planners

need to target the behavioural approach, which takes residents' living expectations into account when undertaking green building planning. On the other hand, Zhang et al. (2011) claimed that there are very limited studies on adoption of green technologies by property projects, its impact on costs, and various barriers to the application of green technologies. The studies related to green housing development is summarised in Table 1.3. As such the study of green property, is utmost necessity to understand consumers' green buying intention to increase its sales in the Malaysian market.

Table 1.3 Summary Table of Relevant Past Studies on Sustainable Green Housing Developments

Name of the author (s) and year of publication	Research context	Objective / Research question	Methodology used in this study	Findings
Bahruddin and Mohd (2019)	Malaysia Housing developers that had been awarded green housing certificate within Kuala Lumpur and Selangor.	The determining enabling factors that will be considered in developing green housing projects.	N = 55 Purposive sampling method SPSS	16 significant enabling factors include the authority of government, enforcement of the acts and regulations, the importance of technology, better technology, importance of soft skill, support from educational sectors, exposition to knowledge, availability of organization, growing awareness, experts' commitment, projection of green management, development of companies policy, importance of developers, importance of resources and capabilities, organization system and lastly, customers' attraction.
Huang, Wu and Yang (2019)	China Development from Shenzhen Municipal Government	To systematically and comprehensively evaluate and analyze the building greening level.	Secondary data - sample size and technique not mentioned SPSS	There are great differences between regions and between cities in the overall development of green building projects. The strong government support has a significant impact on the development of green buildings in cities.

Jiang and Payne (2019)	China Leading real estate enterprises who were experienced in green housing	The extent Chinese real estate enterprises are transitioning toward greener housing practices and what constraints may exist.	Qualitative study method	Chinese real estate enterprises face a dilemma of 'going green' and a range of institutional constraints that currently frustrate their uptake of green housing practices.
Lim, Tan and Hambira (2018)	Malaysia General public before and after visiting website.	To enhance the public's awareness on green housing by developing an interactive website to illustrate the differences between the conventional homes and green homes and its impact on the environment	N = 100 Sampling technique not mentioned ADDIE model website approach	The green home concept is still at infancy stage in Malaysia Public awareness has increased drastically using the interactive website approach. Foresee increase in demand for green housing developments with the growth in environmental awareness.

Darko, Chan and Owusu (2018)	Ghana Professionals with green building experience	To identify the green technologies that are important to achieve sustainable housing development.	N = 43 Non probability sampling - snowball sampling method SPSS	Results indicated that application of natural ventilation, application of energy-efficient lighting systems, optimizing building orientation and configuration, application of energy-efficient HVAC system, and installation of water-efficient appliances and fixtures were the five most important green technologies to achieve sustainable housing development. Furthermore, water efficiency technologies and energy efficiency technologies had the highest level of importance.
Immergluck and Balan (2018)	United States Atlanta Beltline housing estate	Examines the effect of the Beltline on housing values within one half mile, From 2011 to 2015.	Secondary data collected from five-year estimates American Community Survey at the level of the census tract. Analysis tool not mentioned	Communities considering large-scale adaptive reuse projects that generate environmental amenities should begin by recognizing that the benefits of these projects to surrounding neighbourhoods are rapidly capitalized into housing values, and thus will spur higher housing costs very quickly.

Zhang, Chen, Wu, Xue and Dong (2018)	China Construction participants in Jinan	To explore the willingness of construction practitioners, who are regarded to have more knowledge concerning Green Housing	N = 180 face-to-face interviews using questionnaire Theory of planned behaviour (TPB)	Green housing price displayed a significant and negative influence on practitioners' WTP. Mature GH market, degree of popularity, publicity of GH from developers, and GH affordability, showed insignificant relationships with the practitioners' WTP.
Ang, Olanrewaju, Chia and Tan (2017)	Malaysia Homebuyers of sustainable housing	To explore the awareness of homebuyers in Malaysia towards sustainable affordable housing.	Qualitative - method of unstructured interview Porter Five Forces Model	Homebuyers' requirements hold the bargaining power of customers to determine the features of housing provided by the property developer.
Nordin, Halim and Yunus (2017)	Malaysia Housing developers operating in Klang Valley.	To identify current level of awareness and understanding regarding the Green Home concept, together with identifying the challenges that contribute to lack of initiatives in implementation of green home development.	N = 20 Qualitative methodology utilising interviews	Level of awareness and understanding on green home concept among construction players and the public is low to moderate level. Improvement in terms of its implementation with cost factor is greatest challenge to implementation, low awareness and understanding among construction players and public, lack of Government enforcement and initiatives.

Said, Daud, Esha, Majid and Najib (2017)	Malaysia Residents in both Kuching Utara and Kuching Selatan and surrounding areas including Samarahan and Batu Kawa.	Affordability of sustainable green housing in Sarawak	N = 471 Sampling technique not mentioned COPRAS	Area with a high degree of utility conforms best to sustainable housing affordability while the area with a lower degree of utility performs poorly.

Source: Compiled by the researcher

1.3 Problem Statement

In view of the continued damage to the environment, global warming has become a very important issue across the globe, and thus green living made possible by building houses with the green living concept is a valuable consideration (Hayward, 2020; Mishra and Kauškale, 2017; Setiawan, 2020; Sivadasan et al., 2020; UNDP, 2012). The growth in human population and urbanisation has forced mass development throughout the world, where construction projects become the main contributor to the damage to the environment (UNDP, 2012; Yoong et al., 2017). Hence, it is very important for citizens of the world to do whatever lies within their means to protect the environment and Mother Nature. As for the property industry in Malaysia, where houses with green living concept are gaining popularity, it has to find an equilibrium in the hearts and minds of the consumers to purchase and reside in these green homes.

In addition, literature search found that green purchase and environmentally friendly behaviour could be unrelated because some consumers cannot afford to buy green products and not all who buy green products do so for the sake of the environment (Liobikienė, Grincevičienė and Bernatonienė, 2017; Yusliza, Amirudin, Rahadi, Nik-Sarah-Athirah, Ramayah, Muhammad and Mokhlis, 2020). Although an in-depth study of the literature indicates mixed findings on consumers' behaviour or intention to purchase green products, this study aims to explore what kinds of action could trigger and then predict a concrete outcome in the consumers' mind to purchase green products. Therefore, analysis of the literature indicates that researchers are yet to attempt such a complicated study, which has become so relevant to the property industry today, especially in Malaysia.

Moreover, previous studies conclude that the cost of green property projects are higher than those of conventional property projects that do not include any green elements (Fulton, Beauvais, Brooks, Kruse and Lee, 2020; Saeed and Mullahwaish, 2020; Zhang et al., 2011). In line with this finding, Jin-Theong, Osman and Yap (2020) and Bank Negara Malaysia (2018) reported that borrowing for higher income groups with incomes exceeding RM10,000 per month is increasing despite the current downturn in the property market. Based on this revelation, the literature has shown a

dearth of studies attempting to understand this phenomenon. One may conclude, on the basis of this data, that the buying power of higher income groups is not affected by the downturn in the property market. However, while these groups of consumers selectively continue to buy, they could now become more cautious about the types of the property that they purchase. Hence, perhaps these groups of consumers could now be on the lookout for sustainable green housing development, which our Malaysian housing developers are aggressively competing for in the market, a subject that this study attempts to elucidate.

Furthermore, as suggested by Mulyano, Rahadi and Amaliah (2020), the environmental setting is an important factor in customers' sense of security. However, Abdul-Ghani and Lee (2015) conclude that most studies in Malaysia focus solely on architectural design evaluations and that nothing is known from the customers' perspective about demand for housing and preferences for lifestyle-based housing. It is evident that the quality of the environment within a locality significantly influences consumers' purchase decisions, because people nowadays demand quality of living that embraces nature (Hassan, Basit and Sethumadavan, 2020). Yet Ismail and Shaari (2020) went on to suggest that features incorporated by property developers are based on consumers' preferences that drive demand in the property market. Thus, the literature indicates that a mixed reaction could be assumed with regard to green property development in Malaysia. It is, however, clear that research on consumers' buying behaviour with respect to green residential homes in the property development sector is limited. Thus, this phenomenon has resulted in increased production and supply of ordinary homes amid a clear absence of buyers, thereby contributing to growing property overhang statistics in Malaysia.

Usually, housing developers sell off all of their housing products either before beginning construction or while constructing the houses (also known as the construction stage). In recent times properties already completed but lying unsold – also known as 'property overhang' – have become a central issue in Malaysia's property industry (Mang, Zainal and Radzuan, 2020; MOF, 2018). This situation may reflect a critical lack of understanding or misconception on the part of housing

developers of the consumers' purchase intention, resulting in an increase in properties that are wrongly priced.

The number of consumers buying more than one property for the sake of investment, also termed speculative purchases, seems to have been dropping, especially for borrowers with three or more outstanding residential property loan accounts (Bank Negara Malaysia, 2018; Lee, Sinnakkannu and Ramasamy, 2020). Thus, from the preceding discussion, speculative buying or purchasing property as a form of investment is decreasing drastically. This means that consumers who are buying houses are doing so mainly for their own stay instead of for investment, and hence their perceptions and intentions are different from those of previous buyers. This phenomenon has confronted property developers who were traditionally successful with a new market norm that consists of a new type of consumers that need to be studied and understood.

The findings of Bank Negara Malaysia (2018) indicate that the property market in Malaysia is getting very competitive. They also further indicate that since speculative buying is dropping, one may conclude that current purchasers are mainly genuine home buyers who are buying for their own stay and who would consider many factors before making an actual purchase, thereby making the property market more competitive. At this stage, it has to be noted that the findings of previous studies investigating property purchasing intention are not aligned with current market behaviour in Malaysia on account of the shift in consumers' preferences from buying property for investment to buying property for own stay (Yoke, Mun, Peng and Yean, 2018). Hence, in line with the findings of Zhu, Li and Jiang (2020) that the increase in housing demand has motivated housing developers to create neighbourhoods based on the green living concept to the extent that they are willing to use artificial attributes, which were originally not available, to attract customers. Perhaps because of the competitive residential property industry, property marketers could have been using the term sustainable green living environment to market their products. However, property developers are still uncertain whether the sustainable green living concept really does attract buying interest from consumers as no recent market study on such consumer behaviour has been conducted in Malaysia.

As it is essential to focus on detecting consumers green buying intention, there should also be commercial or economic aspects contributions in the understanding of consumers behaviour (Zhang, Chen, Wu, Xue and Dong, 2018). This commercial contribution would be essential for marketers to formulate pricing strategies for their green products. Therefore, construct such as willingness to pay more was found to be widely used in to understand the marketeers green products pricing strategy (Lee and Yoo, 2020; Teotónio, Oliveira-Cruz, Matos-Silva and Morais, 2020; Zalejska-Jonsson, Wilkinson and Wahlund, 2020). However, the effect of willingness to pay more construct to a relationship that produces a buying intention as an outcome is rarely studied. Hence there is a literature gap that requires further investigation and understanding, recognised especially for the green housing products.

It has been observed that to enhance green buying intention through green brand positioning, there is an existence of another construct namely environmental attitude (Huang, Yang and Wang, 2014). The study by Huang et al. (2014) which examined Taiwan's Lifestyle of Health and Sustainability Club respondents, did not specifically analyse environment attitude as a mediator although it exists in between the relationship of green brand positioning and green buying intention. Similarly, the study by Baiquni and Ishak (2019) who examined green purchase intentions of Tupperware products using green brand positioning in Indonesia, did not analyse the green attitude that exists in between the relationship of these two constructs as a mediator. Hence the current study is expected to fill the literature gap that exists by examining environmental attitudes as a mediator.

Past work on green brand positioning has usually used a two-dimensional construct. This study, however, uses the latest three-dimensional approach by analysing functional, emotional and green constructs (Huang, Yang and Wang, 2014; Sivadasan et al., 2020). The study thus recognises that there is a research gap in this field of knowledge, as a three-dimensional approach has never been employed in the property sector before. With a view to filling this gap, by understanding consumers' buying behaviour, this study applies the S-O-R theory, which rarely been used in earlier studies, especially in the property sector. By utilizing the S-O-R theory, this study intends to further narrow the theoretical gap in the literature by exploring how

this theory holds across new constructs such as environmental advertising, green brand positioning, environmental attitude and green buying behaviour, in the housing development sector (Sivadasan et al., 2020).

Finally, the literature, based on Jin-Theong et al. (2020) and Bank Negara Malaysia (2018), points to increasing household debt in the high-end segment, indicating that a growing number of consumers have been purchasing expensive properties over the years. This also means that the market has currently become extremely competitive as marketers seek to attract consumers in the premium housing product category, where an increasing sales trend has been witnessed over the years. Hence, this justifies the study objective of understanding consumers' green buying intention in regard to sustainable green property development. However, literature does indicate that there are mixed findings for the attainment of green buying intention outcome which depends on various factors such as type of green products, demographics, countries, income level and many more (Baiquni and Ishak, 2019; Chin, Sulaiman, Mas'od, Muharam and Tat, 2019; Yusiana, Widodo, Hidayat and Oktaviani, 2020; Zhang, Chen, Wu, Zhang and Song, 2018). Such findings in the literature indicate a need for an introduction of a moderator to strengthen the relationship between constructs that are producing green buying intention outcomes. Therefore this study justifies the need for a moderator, so to complement new knowledge to the existing literature.

To further understand and verify the problems faced by the property industry in the market, a few industry property experts were informally interviewed, following Churchill (1995), who recommended a preliminary exploratory study to understand and strengthen the research problem. These informal interviews helped "in breaking broad, vague problem statements into smaller, more precise problem statements" (Churchill, 1995, p.147). Therefore, in order to formulate the research problem and understand the practitioner's point of view on the study topic, a preliminary investigation was carried out. Informal interviews conducted with three industry experts yielded the following information:

1. Principal architect of Gerak Reka Arkitek Sdn Bhd, who is ex-president, PAM, and chairman, Green Building Index, is a well-known advocate of sustainable development in Malaysia. He strongly believes that all property development in Malaysia is heading towards responsible and sustainable projects, which will provide for our current needs without compromising those of future generations to provide for themselves.

2. Executive vice president of SP Setia Berhad, a leading property developer in Malaysia, strongly believes that one of the main factors that increase property prices in Malaysia, is the continuous increase in compliance cost imposed by the authorities on housing developers. For example, in a township development, 60% of the land has to be surrendered back to the various authorities for the development of infrastructure and other public amenities, and the remaining land is for housing developers to build and sell properties. This leaves housing developers continuously struggling to innovate their products in order to stay effective in the property market.

3. Founder and CEO of Urbanmetry Sdn Bhd, a market research company that provides market intelligence, trend tracking, value index and information forecasting on property development using big data and artificial intelligence in Malaysia, maintains that they can do many things, including predicting future trends of consumers' house purchases. This is done on the basis of an assumption that a person earning more than RM15,000 per month may buy a house costing RM1 million or above. However, they are unable to determine whether a person earning RM15,000 to RM50,000 per month has an intention to buy. Hence, market studies of purchase intention cannot be done through big data analysis.

The interviews shed light on the drivers and frugality in the property industry. The first candidate confirmed that the current market trend, where all stakeholders and industry players focused exclusively on sustainable property development, was actually a market reaction to the change in consumers' preferences towards environmentally friendly and sustainable homes. Currently, planning and design activities of housing developers' projects are all focused on the creation of green

sustainable living spaces. The second candidate explained that the property industry has become very competitive owing to the increase in cost, especially compliance cost, which, in the long run, would further increase the selling price of houses. As such, the current market condition has indirectly forced housing developers to be more innovative in everything that they do to stay relevant in business. These innovations include design, construction, project management, sales, marketing, customer care and other after-sales activities. To meet market demand, housing developers are looking into innovative building and marketing activities, by developing sustainable development projects, which is the way forward. The last candidate highlighted the advancement of technology for undertaking market studies with the use of big data available from mobile phone locations and demographic movements of consumers. Big data analysis is able to track consumers' purchasing behaviour in the property industry. However, these technological studies of big data suffer from the limitation of not being able to identify consumers' intention to buy. What is in the consumers' mind, especially intention to buy, can be identified only by asking the consumers themselves. Such identification of intention is possible only by means of intervention and study of the individuals, as in this study.

From the preceding discussion it is clear that all three industry players agree that the constructs proposed for this study are very relevant as green sustainable housing development is the way to go for the current and future property market. Property prices will inevitably continue to rise, pushing the housing development industry to be more competitive. Hence, to sell houses, marketers have to understand consumers' minds and behaviours well. Understanding consumers' intention to buy houses based on the green living concept would be the most valuable key to unlock future property purchasing trends. Although the notion of housing based on the green living concept is crucial for social welfare and environmental sustainability, there is little in the literature about the factors that affect consumers' intention to purchase such properties. This study attempts to fill this gap in the literature.

1.4 Research Questions

Based on the problem statements discussed in the previous sections, the following research questions were formulated:

i. Is there any significant relationship between environmental advertisement and environmental attitude?

ii. Is there any significant relationship between green brand positioning and environmental attitude?

iii. Is there any significant relationship between environmental attitude and consumer green buying intention of homes with green living concept?

iv. Does environmental attitude mediate the relationship between environmental advertisement and consumer green buying intention of homes with green living concept?

v. Does environmental attitude mediate the relationship between green brand positioning and consumer green buying intention of homes with green living concept?

vi. Does willingness to pay more moderate the relationship between environmental attitude and consumer green buying intention of homes with green living concept?

1.5 Research Objectives

The objectives of this study are as follows:

i. To examine the relationship between environmental advertisement and environmental attitude.

ii. To examine the relationship between green brand positioning and environmental attitude.

iii. To examine the relationship between environmental attitude and consumer green buying intention of homes with green living concept.

iv. To examine the mediating effect of environmental attitude in the relationship between environmental advertisement and consumer green buying intention of homes with green living concept.

v. To examine the mediating effect of environmental attitude in the relationship between green brand positioning and consumer green buying intention of homes with green living concept.

vi. To examine the moderating effect of willingness to pay more on the relationship between environmental attitude and consumer green buying intention of homes with green living concept.

The discussion so far is presented in Table 1.4, which lists the research motivations, research questions, research objectives and, finally, the hypotheses statements derived from it. The next section goes on to discuss the scope of the study, its significance and the definition of the study variables and other research terminology.

Table 1.4 Summary of Research Motivation, Research Questions, Research Objectives and Hypotheses Statements.

Research Motivations	**Research Questions**	**Research Objectives**	**Hypotheses Statement**
Dearth of research investigating environmental advertisement and environmental attitude.	**RQ1**: Is there any significant relationship between environmental advertisement and environmental attitude?	**RO1**: To examine the relationship between environmental advertisement and environmental attitude.	**H1**: Environmental advertisement positively affects environmental attitude.

Research Motivations	**Research Questions**	**Research Objectives**	**Hypotheses Statement**
Lack of studies investigating green brand positioning and environmental attitude.	**RQ2**: Is there any significant relationship between green brand positioning and environmental attitude?	**RO2**: To examine the relationship between green brand positioning and environmental attitude.	**H2**: Green brand positioning positively affects environmental attitude.
Lack of research investigating environmental attitude and consumer green buying intention	**RQ3**: Is there any significant relationship between environmental attitude and consumer green buying intention of homes with green living concept?	**RO3**: To examine the relationship between environmental attitude and consumer green buying intention of homes with green living concept.	**H3**: Environmental attitude positively affects consumer green buying intention.
Lack of studies investigating environmental attitude mediates the relationship between environmental advertisement and consumer green buying intention	**RQ4**: Does environmental attitude mediate the relationship between environmental advertisement and consumer green buying intention of homes with green living concept?	**RO4**: To examine the mediating effect of environmental attitude in the relationship between environmental advertisement and consumer green buying intention of homes with green living concept.	**H4**: Environmental attitude mediates the relationship between environmental advertisement and consumer green buying intention.
Lack of studies investigating environmental attitude mediates the relationship between green brand positioning and consumer green buying intention.	**RQ5**: Does environmental attitude mediate the relationship between green brand positioning and consumer green buying intention of homes with green living concept?	**RO5**: To examine the mediating effect of environmental attitude in the relationship between green brand positioning and consumer green buying intention of homes with green living concept.	**H5**: Environmental attitude mediates the relationship between green brand positioning and consumer green buying intention.

Research Motivations	Research Questions	Research Objectives	Hypotheses Statement
Dearth of research investigating willingness to pay more moderates the relationship between environmental attitude and consumer green buying intention.	**RQ6**: Does willingness to pay more moderate the relationship between environmental attitude and consumer green buying intention of homes with green living concept?	**RO6**: To examine the moderating effect of willingness to pay more on the relationship between environmental attitude and consumer green buying intention of homes with green living concept.	**H6**: Willingness to pay more enhances the relationship between environmental attitude and consumer green buying intention.

Source: Compiled by the researcher

1.6 Scope of the Study

The overall purpose of this study is to investigate the drivers of consumers' purchase intention of homes with green living concept. Therefore, this study aims to understand the possible green marketing activities that would enhance green buying intentions. The focus of the study is Malaysia's residential property sector because this particular area represents the highest volume of property transactions in the country (MOF, 2017). This study would further focus on specific product in the residential property sector, which is the sustainable development project's green products being homes with green living concept. It is generally understood as explained with specific details in Chapter 2, that homes with green living concept causes less damage to nature, it would take care of the environment in the long run, encourage social integration and contributes financial benefit to the homeowners who reside in this township. Indirectly enhancing the purchase of homes with green living concept agenda would create eco-friendly consumers who would defend the environment, uplift human living condition and safeguard the planet. Eventually, it will influence consumers' behaviour from buying a home from a conventional housing project, to homes with the green living concept. Therefore, this study focuses on Malaysian consumers wanting to buy or have bought the residential property. Those who have already bought a residential property

are considered relevant because these consumers might lookout to upgrade their existing home to better and improved living conditions or may want to buy another house with green living concept. It is supported by the fact that in general, Malaysians like to buy more than one house (Abdul-Ghani and Lee, 2015).

1.7 Significance of the Study

The study potentially guides property developers by assisting them to understand consumers' preferences, before proceeding to make accurate house product pricing for green residential developments. In other words, the findings of the study might cause housing developers to revise their future marketing policies and green brand positioning in the property industry. Property marketers can use these findings to market their products according to customers' preferences and buying behaviour and adjust the extent of green marketing elements that should be incorporated into green development to attract more buyers. Finally, the state administration will benefit immensely from the study through increased sales brought by housing developers and increased property transactions by consumers, which would increase tax revenue. Lastly, the practice and propagation of sustainable housing development will favourably impact the environment, reduce the government's infrastructure maintenance expenditure and uplift Malaysian citizens' living conditions.

Apart from the foregoing contributions to the industry, the study will also enhance the existing knowledge space of green marketing. In particular the specific areas concerning the relationship between environmental advertisements and green brand positioning which acts as an external stimulant, are studies if it can produce a green buying intention outcome. In relation to the above, testing of the S-O-R theory for the property development sector, green sustainable homes, in particular, would be a major contribution to the existing literature. This study also exposes Malaysian consumers' behaviour if they are willing to pay more for green products. Especially, green products such as green residential houses. Owning a property requires long term financial commitment. Such long term commitment is not required for other consumer retail green products such as cosmetics, automobile, food products and many more

where average consumers do not mind paying more if the product is environmental friendly.

1.8 Definition of the Study Variables and Terminologies

The conceptual definition of homes based on the green living concept, environmental advertisement, green brand positioning, environmental attitude, willingness to pay more and green buying intention is discussed briefly in what follows. The conceptual definition and operational definition is depicted in Table 1.5 and a detailed discussion on these constructs is provided in Chapter Two.

Homes with Green Living Concept

Based on Zhang's (2015) conceptualisation, in this study, homes with green living concept is defined as houses located in a township with a mixture of residential and commercial properties and the whole township integrated with sustainable features that benefit the environment. Also known as sustainable green property development or green real-estate development, it is a wholesome approach, in which houses are built with green features and located in man-made surroundings and developed to take care of the environment.

Environmental Advertisement

Based on the conceptualisation of Ahuja (2015), Cherian and Jacob (2017) together with Soon and Kong (2012), in this study, environmental advertisement is defined as claims about the advertised green housing with its associated process contributing to environmental protection or other positive effects on the environment.

Green Brand Positioning

Based on the conceptualisations of Hartmann, Ibáñez and Sainz (2005), Kim and Periyayya (2013) and Huang et al. (2014), green brand positioning is defined as housing developers' brands that are actively associated with environmentally friendly and sustainable green housing products. Consumers are able to differentiate green housing products from the rest just by accessing the housing developers' brand and are satisfied with their branding activities.

Functional Positioning

Based on the conceptualisations of Hartmann et al. (2005) and Wang (2016), functional positioning is defined as the benefits of green houses' functionalities to consumers are properly declared with sound attributes by differentiating them from conventional housing.

Green Positioning

Based on the conceptualisations of Huang et al. (2014) and Sivadasan et al. (2020), green positioning is defined as the housing developers' dynamic communication to differentiate their green housing products, which are environmentally comprehensive, from those of their competitors.

Emotional Positioning

Based on the conceptualisations of Hartmann et al. (2005), Sivadasan et al. (2020) and Wang (2016), emotional positioning is defined as the satisfaction that consumers experience when they are associated with green housing developers' brands, as the products benefit nature in the long run.

Environmental Attitude

Based on the conceptualisations of Esmaeilpour (2015), Le Gall-Ely (2009), Liobikiene and Juknys (2016), Liu et al. (2018), Safari, Salehzadeh, Panahi and

Abolghasemian (2018), Stern (2000) and Vicente-Molina et al. (2013), environmental attitude in this study is defined as a psychological tendency expressed in relation to houses that are sustainable in the long run, beneficial to nature and environmentally friendly. This feeling exists in the consumer's mind and is expressed by assessing environmental preservation with a certain degree of favour or disfavour.

Willingness to Pay More

Based on the conceptualisations of Le Gall-Ely (2009) and Portnov et al. (2018), this study defines it as the maximum price charged to a consumer who agrees to pay more for green houses that offer richer environmental benefits.

Green Buying Intention

Based on the conceptualisation of Huang, Lin, Lai and Lin (2014), Jaiswal and Kant (2018), Lin, Tsai, Chiu and Liu (2015), Liobikiene and Juknys (2016), Pratiwi and Rinuastuti (2018), Safari et al. (2018), Sreen et al. (2018) and Soon et al. (2012), in this study, green buying intention is defined as consumers' willingness to buy houses with green attributes that have universal benefits for the environment. Thus, with perceptions of caring for the environment, they are motivated by the green housing product's biological quality and environmental significance associated with their buying decision.

Table 1.5 Summary Table for Conceptual and Operational Definitions of the Study

Variables	Conceptual Definition	Operational Definition
Green Buying Intention	"Consumers willingness to purchase green products expressed by the consumer for the benign of the environment, and such consumers' willingness holds motive to be purchased green products. In other words consumers are not only concerned about the ecological quality of the product but also about the environmental consequences associated with their purchase decision for such products" (Jaiswal et al., 2018, p. 62).	Green buying intention refers to consumers willingness to buy houses with green attributes that have universal benefit for the environment, with, in their perception, motivated by a green housing product's biological quality and environmental significances that is associated with their buying decision.
Environmental Advertisement	"To influence consumers' purchase behaviour by encouraging them to buy products that do not harm the environment and to direct their attention to the positive consequences of their purchase behaviour, for themselves as well as the environment" (Rahbar and Abdul-Wahid, 2011, p. 76)	Environmental advertisements refers to claims that attribute the advertised green housing with its associated process contributing to environmental protection or with other positive effects to the environment.
Green Brand Positioning 1. Functional Positioning	"To build brand associations by delivering information on environmentally sound product attributes" (Hartmann et al., 2005, p. 11).	Functional positioning refers to housing developer's brand building association with consumers by delivering information on how their green homes are environmentally sound with various attributes.

Variables	Conceptual Definition	Operational Definition
Green Brand Positioning 2. Green Positioning	"Active communication and differentiation of the brand from its competitors through its environmentally sound attributes" (Hartmann et al., 2005, p. 11).	Green positioning refers to housing developer's active communication and differentiation of their brand from their competitors through production of homes that are environmentally sound.
Green Brand Positioning 3. Emotional Positioning	"Environmentally conscious consumers experience personal satisfaction by contributing to the improvement of the 'common good' environment" (Hartmann et al., 2005, p. 11).	Emotional positioning is defined as personal satisfaction experienced by environmentally conscious consumers for the benefit of the nature.
Environmental Attitude	"A psychological tendency expressed by evaluating the natural environment with some degree of favour or disfavour" (Vicente-Molina, et al, 2013 and as stated by Milfont and Duckitt, 2010, p. 132).	Environmental attitude is defined as a psychological propensity expressed by consumers assessing environment naturally with certain degree of disfavour or favour.
Willingness to pay more	"Maximum price a consumer accepts to pay for a given quantity of goods or services" (Le Gall-Ely, 2009, p. 93).	Willingness to pay more refers to maximum price given to a consumer who accepts to pay more for green houses that is particularly richer in environmental benefits.

Source: Compiled by the researcher

1.9 Organisation of the Research

This dissertation consists of five chapters that explain all aspects of the research. The details of each chapter are as follows:

Chapter One: This chapter introduces the readers to a problem statement within the research. It then explains the research gaps and research questions that make up the research objectives listed in bullet form. The objectives forming the scope of the study and the significance of the study are elaborated on, with all terms defined in order to facilitate readers' understanding of the topic discussed.

Chapter Two: This chapter reviews the literature, closely examining the main theory and identifying research gaps. It also provides a review of the previous literature on environmental advertisement, green brand positioning, environmental attitude, consumers' green buying intention of green housing product and consumers' willingness to pay a premium for the green homes. On the basis of the research gaps identified, a conceptual framework of the study is developed, laying the basis for the development of hypotheses.

Chapter Three: This chapter discusses the choice of research paradigm employed for the study. It also discusses the research process, research design, sample selection, instrument development, data collection procedures and analysis processes.

Chapter Four: This chapter explains the research method assessment by employing the Partial Least Square of structural equation modelling. It then reports the results of the analysis derived from testing the hypotheses.

Chapter Five: This chapter discusses the results and their implications and describes the limitations of the study, offering suggestions for future research.

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APPENDIX A

Research Instrument

Date:

Dear Respondent,

I am a student at Azman Hashim International Business School, Universiti Teknologi Malaysia. As a part of the requirement for my Doctoral study, I am conducting a research related to property developer's green, environmentally friendly and sustainable features they advertise and their green branding, with regards to homes with green living concept.

As such, I take pleasure to humbly invite you to participate in this research by providing your insights and views on sustainable homes. It will take only 10 minutes of your time to fill up the questionnaire. Data will be gathered and analyzed with strict confidentiality and the findings from this research will only be used for academic purposes.

Your cooperation in answering all the questions is highly valued and appreciated.

If you need any further information or clarification, please feel free to contact me at 012-2779605 and I would be glad to assist you.

Thank you.

Rames Sivadasan
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SURVEY QUESTIONNAIRE

Instructions for completing the questionnaire:

- If you want to purchase a house from property/real-estate agent OR if you want to stay in a rented house for the rest of your life, then you may drop the survey here (no need to proceed further).
- If you do not have any knowledge of any property developer company doing business in Malaysia, then you may drop the survey here (no need to proceed further).
- If you are **not a Malaysian citizen** or below the age of **18 years old**, then you may drop the survey here (no need to proceed further).
- Your kind assistance to answer all questions in this questionnaire is highly appreciated.
- I appreciate if you could return the completed questionnaire to the respective person.

Section A:

Background Questions

1. If you intend to buy (or bought) a house, it would be from:	(i) Directly from Housing Developers ☐ (ii) Real-estate/Property Agent (Sub-Sale houses) ☐ (iii) Others. Please specify _____
2. If you are staying in a house called your own home, which of this option do you prefer?	(i) Own a house ☐ (ii) Rent now and plan to buy later ☐ (iii) Rent for the rest of your life ☐ (iv) Others. Please specify _____
3. If you prefer to buy from housing developer, who would be your first choice? You can tick more than one box.	(i) Sime Darby ☐ (ii) IOI ☐ (iii) Sunway ☐ (iv) Setia ☐ (v) IJM ☐ (vi) Ecoworld ☐ (vii) Gamuda ☐ (viii) Mah Sing ☐ (ix) Tropicana ☐ (iv) Others. Please specify _____

Note:

- House with green living concept refers to homes within sustainable Green Township, i.e., neighbourhood that is sensitive to nature, environment with a sense of place for social cohesion and stability.

Section B:

Please read the following statements carefully and tick (√) the number that best represents your feelings based on the following criterion:

Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	2	3	4	5

Environmental Advertisement						
1.	Environmental advertisement enhances my knowledge about green products (e.g., sustainable green housing development).	1	2	3	4	5
2.	I enjoy watching property developer's environmental advertisement (e.g., in social media).	1	2	3	4	5
3.	Property developer's environmental advertisement guide customers to make the right purchasing decision.	1	2	3	4	5

Please read the following statements carefully and tick (√) the number that best represents your feelings based on the following criterion:

Strongly disagree	Disagree	Undecided	Agree	Strongly agree
1	2	3	4	5

Brand XYZ refers to either one of the following Property Developers such as Sime Darby, IOI, Sunway, Setia, IJM, Ecoworld, Gamuda, Mah Sing, Tropicana and etc.						
Green Brand Positioning						
1.	The brand XYZ represents comfort.	1	2	3	4	5
2.	The brand XYZ is of high quality.	1	2	3	4	5
3.	The brand XYZ is safe (e.g., provides security).	1	2	3	4	5
4.	The XYZ brand is professional (e.g., good customer service).	1	2	3	4	5
5.	The XYZ brand is energy efficient (e.g., uses LED street lights).	1	2	3	4	5
6.	The XYZ brand uses high technology (e.g., home equipped with Internet of Things (IOT) devices or sensors) (e.g., of IOT include home appliances that can communicate with others over the internet) or sensors).	1	2	3	4	5
7.	The XYZ brand is low air polluting.	1	2	3	4	5
8.	The XYZ brand is modern.	1	2	3	4	5
9.	The XYZ brand is creative.	1	2	3	4	5
10.	The XYZ brand is family oriented (e.g., promote togetherness).	1	2	3	4	5

11.	The XYZ brand is well known.	1	2	3	4	5
12.	The XYZ brand cares for the environment (e.g., transplant existing trees to safeguard it).	1	2	3	4	5
13.	The XYZ brand is highly valued.	1	2	3	4	5
14.	The XYZ brand is primitive (i.e., not up to date).	1	2	3	4	5
15.	The XYZ brand is environmentally friendly (e.g., cut existing trees and replace it with new trees).	1	2	3	4	5

Please read the following statements carefully and tick (√) the number that best represents your feelings based on the following criterion:

Strongly disagree	**Disagree**	**Undecided**	**Agree**	**Strongly agree**
1	2	3	4	5

Willingness to Pay More						
1.	I would pay any amount for houses with green living concept.	1	2	3	4	5
2.	I would be willing to pay an extra percentage of my bill to purchase a house with green living concept.	1	2	3	4	5
3.	There is a strong likelihood that I would pay more if I chose to buy a house with green living concept.	1	2	3	4	5

Please read the following statements carefully and tick (√) the number that best represents your opinion based on the following criterion:

Strongly disagree	**Disagree**	**Slightly disagree**	**Neither agree nor disagree**	**Slightly agree**	**Agree**	**Strongly agree**
1	2	3	4	5	6	7

Environmental Attitude								
1.	It is important for me to protect the environment.	1	2	3	4	5	6	7
2.	It is important for me to reduce pollution.	1	2	3	4	5	6	7
3.	It is important for me to conserve natural resources.	1	2	3	4	5	6	7
4.	I am concerned about long-term sustainability of the environment.	1	2	3	4	5	6	7
5.	I care about reducing harm to the environment.	1	2	3	4	5	6	7

Please read the following statements carefully and tick (√) the number that best represents your opinion based on the following criterion:

Strongly disagree	**Disagree**	**Slightly disagree**	**Neither agree nor disagree**	**Slightly agree**	**Agree**	**Strongly agree**
1	2	3	4	5	6	7

Green Buying Intention								
1.	I intend to purchase house with green living concept in the future because of its environmental concern.	1	2	3	4	5	6	7
2.	I expect to purchase house with green living concept in the future because of its environmental performance.	1	2	3	4	5	6	7
3.	I would be glad to purchase house with green living concept in the future because it is environmentally friendly.	1	2	3	4	5	6	7

Section C:

This section enquires a few questions about you. Please tick (√) the most appropriate box (only one) or fill in the blanks for each of the following items.

1. Gender	(i) Male ☐ (ii) Female ☐	
2. Age	(i) Below 25 ☐ (ii) 26 – 35 years ☐ (iii) 36 – 45 years ☐ (iv) 46 – 55 years ☐ (v) 56 and above ☐	
3. Ethnicity	(i) Malay ☐ (ii) Chinese ☐ (iii) Indian ☐ (iv) Others (Please specify)_____	
4. Marital status	(i) Single ☐ (ii) Married ☐ (iii) Divorced ☐ (iv) Widow/Widower ☐	
5. Education background	(i) Primary school certificate (ii) Secondary school certificate (iii) Diploma/technical school certificate (iv) Bachelor Degree or equivalent (v) Master Degree (vi) Doctoral degree (vii) Others. Please specify _____	☐ ☐ ☐ ☐ ☐ ☐
6. Profession	(i) Administrative and Managerial (ii) Technical	☐ ☐

	(iii) Sales and service (iv) Non Executive (v) Educator (vi) Student (vii) Entrepreneur (vii) Others. Please specify _____	☐ ☐ ☐ ☐ ☐
7. Monthly household income (combine income per family)	(i) Below RM3,000 (ii) RM 3,001 – RM 6,000 (iii) RM 6,001 – RM 9,000 (iv) RM 9,001 – RM 12,000 (v) RM 12,001 - RM 15,000 (vi) Above RM 15,000	☐ ☐ ☐ ☐ ☐ ☐

Thank You for your patience, assistance and participation which I highly appreciate.

APPENDIX B

Reliability Test of the Research Instrument

Reliability Analysis Results (N=52)

Construct	Items No	Cronbach's alpha	Item Deleted
Environmental Advertisement	3	0.790	None
Green Brand Positioning	15	0.873	None
Environmental Attitude	5	0.930	None
Green Buying Intention	3	0.900	None
Willingness to Pay More	3	0.872	None

APPENDIX C

Research Instrument Validation Form

QUESTIONNAIRE VALIDATION

Dear Professor/Assoc. Professor/Dr.,

Greetings.

I am current pursuing my Doctoral study under the supervision of Assoc. Professor Dr Farzana Quoquab. My research topic is related to "CONSUMER'S INTENTION TOWARDS BUYING RESIDENTIAL PROPERTIES WITH GREEN LIVING CONCEPT IN MALAYSIA". I would like to seek your cooperation as a content expert in validating my scales before I proceed for pilot study. The idea behind this validation is to check whether the items are reflecting the operational definition of the study constructs or not. I would be grateful if you could spend some time to read through the items and assess their content validity.

Please respond to the exercise by indicating whether each item is a ***"Perfect Match", "Moderate Match",*** or ***"Poor Match".***

Thank you very much for valuable feedback, time and cooperation.

Yours sincerely,

Rames Sivadasan
DBA Candidate
AHIBS-UTM, Malaysia
Email: ramessn@gmail.com

Construct	Operational Definition	Original Items	Amended Items	Your Assessment			
				Perfect Match (maintain item as it is)	Moderate Match (maintain item but needs some redefining	Poor Match (remove item)	Feedback
Green Buying Intention	Green buying intention refers to consumers willingness to buy houses with green attributes that have universal benefit for the environment, with, in their perception, motivated by a green housing product's biological quality and environmental significances that is associated with their buying decision .	Source: (Goh and Balaji, 2016) 1. I intend to purchase green products in the future because of its environmental concern.	1. I intend to purchase house with green living concept in the future because of its environmental concern.				
		2. I expect to purchase green products in the future because of its environmental performance.	2. I expect to purchase house with green living concept in the future because of its environmental performance.				
		3. I am glad to purchase green products in the future because it is environmental friendly.	3. I would be glad to purchase house with green living concept in the future because it is environmentally friendly. (note: house with green living concept are homes within sustainable green township)				
Environmental Advertisement	Environmental advertisements refers to claims that attribute the advertised green housing with its	Source: (Arshad, Mahmood, Siddiqui and Tahir, 2014)	1. Environmental advertisements enhances my knowledge about green products (eg. sustainable green housing development).				

	associated process contributing to environmental protection or with other positive effects to the environment .	1. Environmental advertisement enhance my knowledge about green products.					
		2. I enjoy watching broadcast environmental advertisement.	2. I enjoy watching property developer's environmental advertisements (eg. in social media).				
		3. Environmental advertisement guide customers to making an informed purchasing decision.	3. Property developer's environmental advertisements guide customers to make the right purchasing decision. (note: examples of property developers include Sime Darby, IOI, Sunway, Setia, IJM, Ecoworld, Gamuda, Mah Sing, Tropicana and etc)				
Green Branding Positioning	1. Functional Positioning Functional positioning is also understood as housing developers building association with consumers by delivering information on how their green homes are	Source: (Huang, Yang and Wang, 2013) 1.1 The brand represents comfort.	1.1 The brand (x,y,z) represent comfort.				
		1.2 The brand is of high quality.	1.2 The brand (x,y,z) is of high quality.				
		1.3 The brand is safe.	1.3 The brand (x,y,z) is safe.				
		1.4 The brand is professional.	1.4 The (x,y,z) brand is professional. (note: brand				

	environmentally sound with various attributes.		x,y,z are examples of property developers such as Sime Darby, IOI, Sunway, Setia, IJM, Ecoworld, Gamuda, Mah Sing, Tropicana and etc)				
	2. Green Positioning Green positioning refer to housing developers active communication and differentiation of their brand from their competitors through production of homes that are environmentally sound.	2.1 The brand is low fuel-using.	2.1 The (x,y,z) brand is energy efficient.				
		2.2 The brand is high technology.	2.2 The (x,y,z) brand uses high technology.				
		2.3 The brand is low air-polluting.	2.3 The (x,y,z) brand low air polluting.				
		2.4 The brand is advanced.	2.4 The (x,y,z) brand is mordern.				
		2.5 The brand is creative.	2.5 The (x,y,z) brand is creative. (note: brand x,y,z are examples of property developers such as Sime Darby, IOI, Sunway, Setia, IJM, Ecoworld, Gamuda, Mah Sing, Tropicana and etc)				
	3. Emotional Positioning	3.1 The brand is family oriented.	3.1 The (x,y,z) brand is family oriented.				
		3.2 The brand is well known.	3.2 The (x,y,z) brand is well known.				

	Emotional positioning is also defined as personal satisfaction experienced by environmentally conscious consumers for the benefit of the nature.	3.3 The brand is kind.	3.3 The (x,y,z) brand is caring .				
		3.4 The brand is respected.	3.4 The (x,y,z) brand is highly valued .				
		3.5 The brand is primitive.	3.5 The (x,y,z) brand is simple.				
		3.6 The brand is friendly.	3.6 The (x,y,z) brand is environmentally friendly.				
		3.7. The brand is stable	3.7. The (x,y,z) brand is stable				
Environmental Attitude	Environmental attitude is defined as a psychological propensity expressed by assessing environment naturally with certain degree of disfavour or favour .	Source: (Anthony-Swaim, Maloni, Henley and Campbell, 2016) 1. Important to protect the environment.	1. It is important for me to protect the environment.				
		2. Important to reduce pollution.	2. It is important for me to reduce pollution.				
		3. Important to conserve natural resources.	3. It is important for me to conserve natural resources.				
		4. I am concerned about long-term of environment.	4. I am concerned about long-term sustainability of the environment.				
		5. I care about reducing harm to the environment.	5. I care about reducing harm to the environment.				
Willingness to pay	Maximum price given to a consumer who	Source: (Yadav and Pathak, 2017)	1. I would pay more for houses with green living				

	accepts to pay more for green houses that is particularly richer in environmental benefits .	1. I would pay more for a green product that is making efforts to be environmentally sustainable.	concept that is making efforts to be environmentally sustainable.				
		2. I would be willing to pay this extra percentage on the green products to support the organization's/product efforts to be environmentally sustainable.	2. I would be willing to pay more for houses with green living concept to support the property developer's efforts to be environmentally sustainable. (note: examples of property developers include Sime Darby, IOI, Sunway, Setia, IJM, Ecoworld, Gamuda, Mah Sing, Tropicana and etc)				
		3. I will encourage people around me to conduct eco-friendly travel. (Kumju Hwang and Jieun Lee, 2018)	3. I will encourage people around me to consider buying houses with green living concept				

Validator's Signature_____ Date _____

APPENDIX D

Statistical Analysis

Test of Normality

Variable	Skewness			Kurtosis			Shapiro-Wilk	
	Statistic	Std. Error	*z* value	Statistic	Std. Error	*z* value	Statistic	Sig.
Environmental Advertisement 1	-.357	.127	-2.812	-.359	.253	-.438	.820	.000
Environmental Advertisement 2	-.627	.127	-4.940	-.188	.253	-.220	.856	.000
Environmental Advertisement 3	-.552	.127	-4.354	.200	.253	.232	.861	.000
Functional Positioning 1	-.329	.127	-2.595	-.252	.253	-.305	.827	.000
Functional Positioning 2	-.328	.127	-2.586	-.309	.253	-.367	.842	.000
Functional Positioning 3	-.331	.127	-2.608	-.617	.253	-.740	.834	.000
Functional Positioning 4	-.253	.127	-1.997	-.577	.253	-.684	.843	.000
Green Positioning 1	-.483	.127	-3.807	.024	.253	.027	.859	.000
Green Positioning 2	-.508	.127	-4.004	.317	.253	.371	.855	.000
Green Positioning 3	-.185	.127	-1.456	-.767	.253	-.878	.874	.000
Green Positioning 4	-.314	.127	-2.479	-.468	.253	-.560	.836	.000
Green Positioning 5	-.549	.127	-4.331	-.324	.253	-.391	.828	.000
Emotional Positioning 1	-.332	.127	-2.620	-.326	.253	-.393	.829	.000
Emotional Positioning 2	-.465	.127	-3.664	-.673	.253	-.852	.789	.000
Emotional Positioning 3	-.331	.127	-2.607	-.094	.253	-.110	.853	.000
Emotional Positioning 4	-.329	.127	-2.595	-.382	.253	-.458	.834	.000
Emotional Positioning 5 reverse coding	.361	.127	2.845	-.344	.253	-.381	.902	.000
Emotional Positioning 6	-.223	.127	-1.759	-.403	.253	-.465	.868	.000
Willingness To Pay 1	-.660	.127	-5.207	-.162	.253	-.186	.874	.000
Willingness To Pay 2	-.659	.127	-5.193	-.015	.253	-.018	.870	.000
Willingness To Pay 3	-.718	.127	-5.658	.218	.253	.252	.863	.000
Environmental Attitude 1	-.777	.127	-6.128	-.087	.253	-.105	.826	.000
Environmental Attitude 2	-.692	.127	-5.456	-.321	.253	-.385	.834	.000

Environmental Attitude 3	-.497	.127	-3.917	-.677	.253	-.798	.849	.000
Environmental Attitude 4	-.670	.127	-5.282	-.528	.253	-.640	.825	.000
Environmental Attitude 5	-.760	.127	-5.992	.041	.253	.049	.836	.000
Green Buying Intention 1	-.512	.127	-4.034	-.393	.253	-.449	.875	.000
Green Buying Intention 2	-.546	.127	-4.307	-.287	.253	-.327	.877	.000
Green Buying Intention 3	-.520	.127	-4.103	-.367	.253	-.423	.868	.000

Pearson Correlation

Variable	EAT	BI	WTP	EA	FP	GP	EP
Environmental Advertisement (EAT)	1	.630**	.167**	.320**	.286**	.291**	.356**
Green Buying Intention (BI)	.630**	1	.411**	.392**	.443**	.404**	.444**
Willingness To Pay More (WTP)	.167**	.411**	1	.384**	.323**	.287**	.264**
Environmental Advertisement (EAT)	.320**	.392**	.384**	1	.380**	.393**	.308**
Functional Positioning (FP)	.286**	.443**	.323**	.380**	1	.659**	.642**
Green Positioning (GP)	.291**	.404**	.287**	.393**	.659**	1	.693**
Emotional Positioning (EP)	.356**	.444**	.264**	.308**	.642**	.693**	1

**. Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Summary of Internal Consistency Reliability

Variables		No. of Items	Cronbach's alpha coefficient
1.	Environmental Advertisement	3	0.716
2.	Green Branding Positioning	14	0.847
a.	Functional Positioning	4	0.772
b.	Green Positioning	5	0.787
c.	Emotional Positioning	5	0.790
3.	Environmental Attitude	5	0.921
4.	Willingness To Pay More	3	0.874
5.	Green Buying Intention	3	0.901

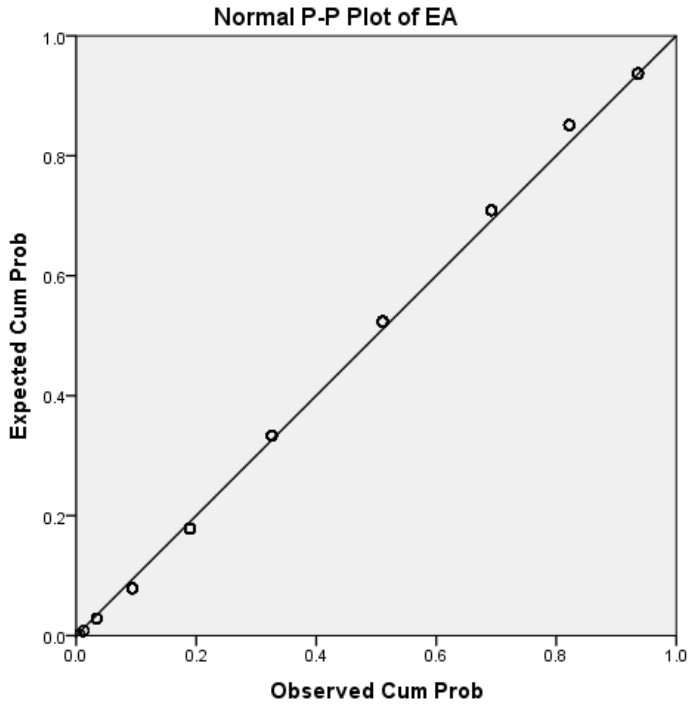
Scale Reliability Test Details

Variable	Items	Mean	Std. Deviation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Environmental Advertisement					0.716
	EA1	4.09	.723	.676	
	EA2	3.93	.940	.625	
	EA3	3.86	.873	.566	
Functional Positioning					0.772
	FP1	4.02	.728	.707	
	FP2	3.94	.770	.754	
	FP3	4.05	.774	.702	
	FP4	3.96	.777	.703	
Green Positioning					0.787
	GP1	3.85	.843	.746	
	GP2	3.87	.843	.745	
	GP3	3.75	.920	.744	
	GP4	4.01	.761	.759	
	GP5	4.11	.799	.739	
Emotional Positioning					0.545
	EP1	4.03	.737	.417	
	EP2	4.27	.696	.423	
	EP3	3.88	.811	.390	
	EP4	4.01	.752	.373	
	EP5r	2.65	1.033	.790	
	EP6	3.76	.838	.437	
Environmental Attitude					0.921
	EAT1	6.08	.908	.904	
	EAT2	6.05	.927	.900	
	EAT3	5.97	.945	.901	
	EAT4	6.06	.935	.907	
	EAT5	6.04	.942	.905	
Green Buying Intention					0.901
	BI1	5.78	.991	.869	
	BI2	5.76	1.005	.846	
	BI3	5.85	.952	.860	
Willingness To Pay					0.874
	WTP1	3.73	1.064	.836	
	WTP2	3.73	.995	.813	
	WTP3	3.81	.967	.821	

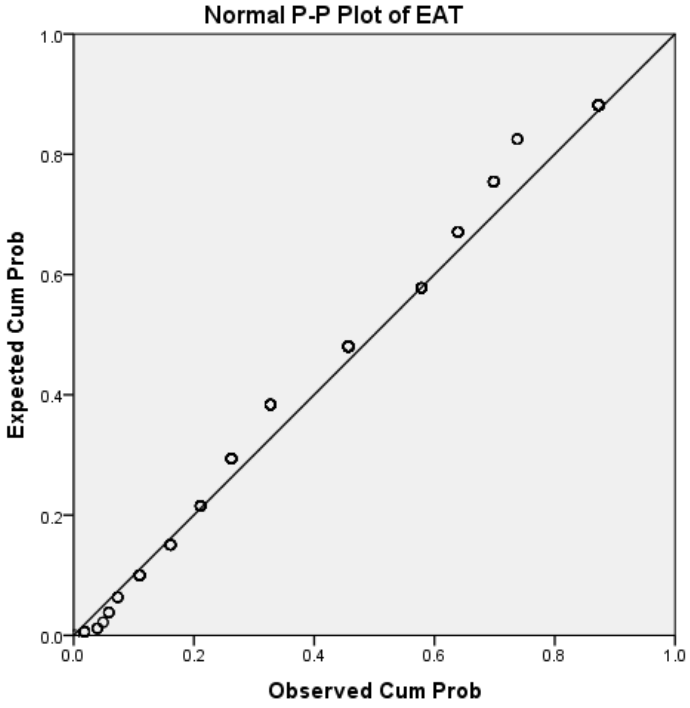
Descriptive Statistics for Survey Instrument

Variable	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Environmental Advertisement	3.959	0.679	-0.325	0.127	-0.266	0.253
Functional Positioning	3.994	0.587	-0.157	0.127	-0.415	0.253
Green Positioning	3.919	0.613	-0.206	0.127	-0.435	0.253
Emotional Positioning	3.768	0.453	-0.029	0.127	-0.202	0.253
Green Branding Positioning	3.894	0.486	-0.158	0.127	-0.201	0.253
Environmental Attitude	6.041	0.812	-0.653	0.127	-0.062	0.253
Green Buying Intention	5.801	0.898	-0.573	0.127	-0.185	0.253
Willingness To Pay More	3.755	0.902	-0.813	0.127	0.318	0.253

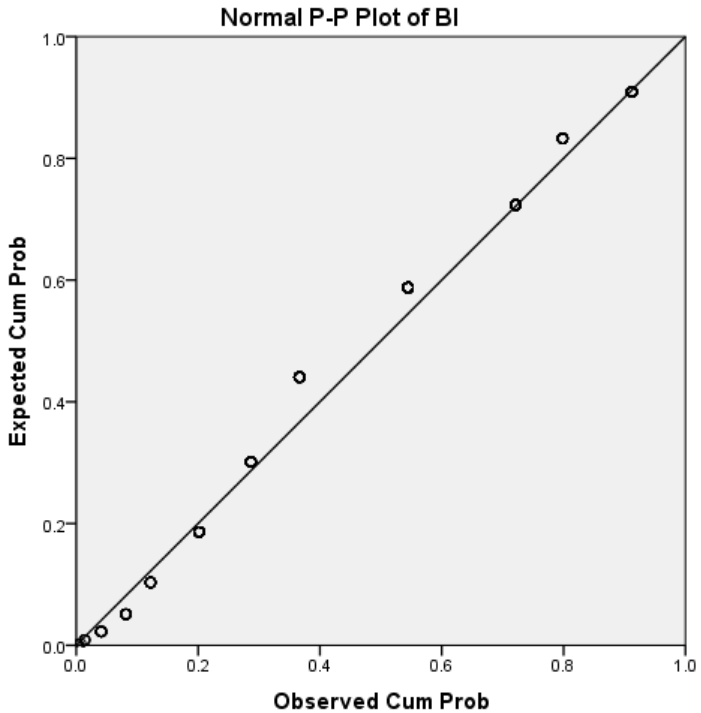
P-P Plots for Uni-Dimensional Construct – Environmental Advertisement



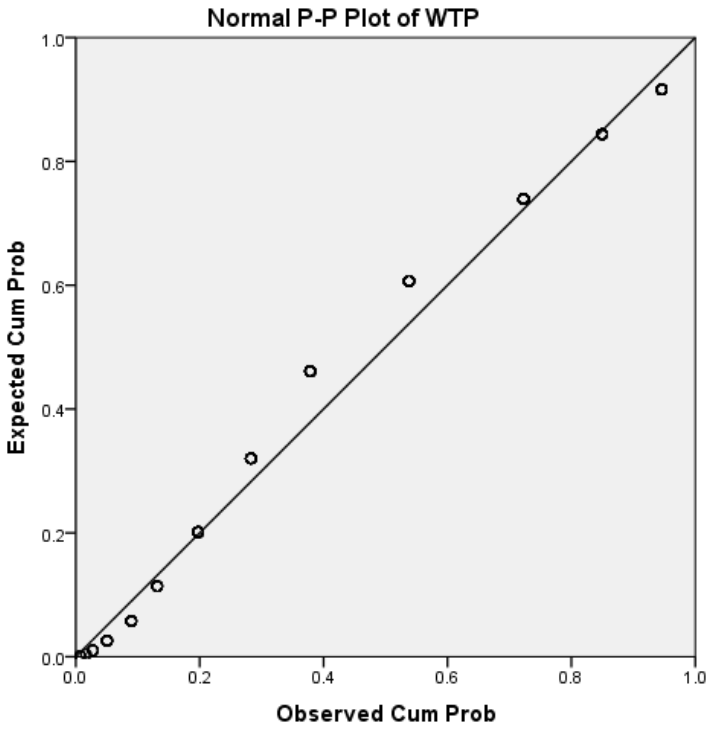
P-P Plots for Uni-Dimensional Construct – Environmental Attitude



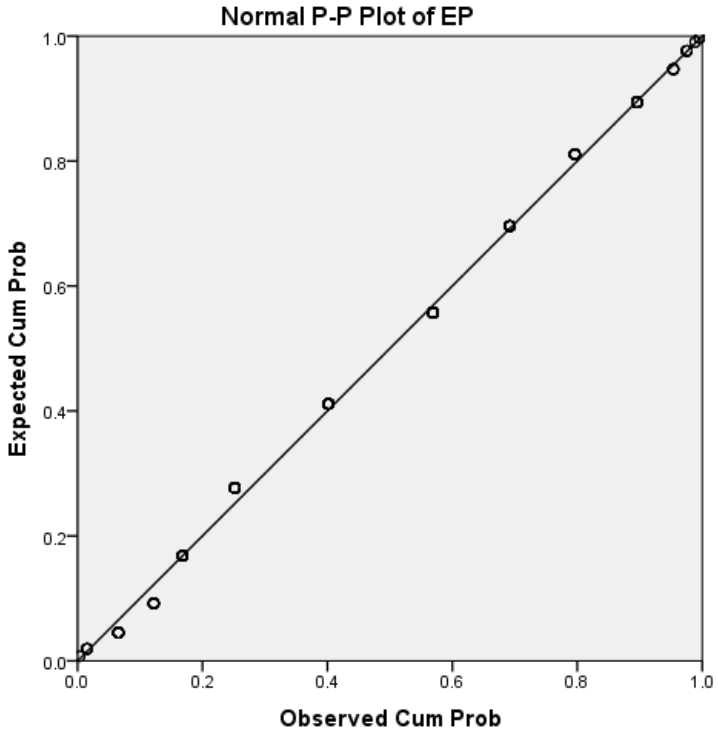
P-P Plots for Uni-Dimensional Construct – Green Buying Intention



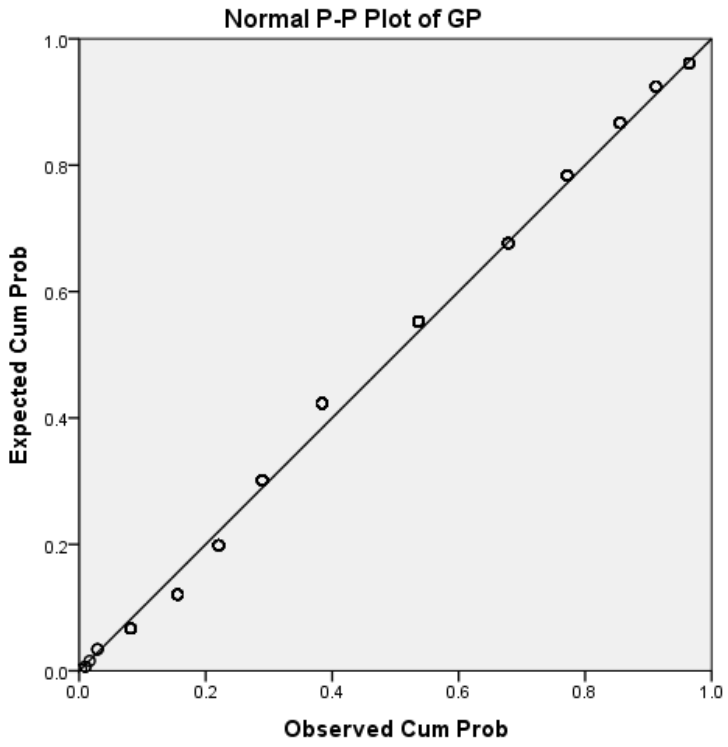
P-P Plots for Uni-Dimensional Construct – Willingness to Pay More



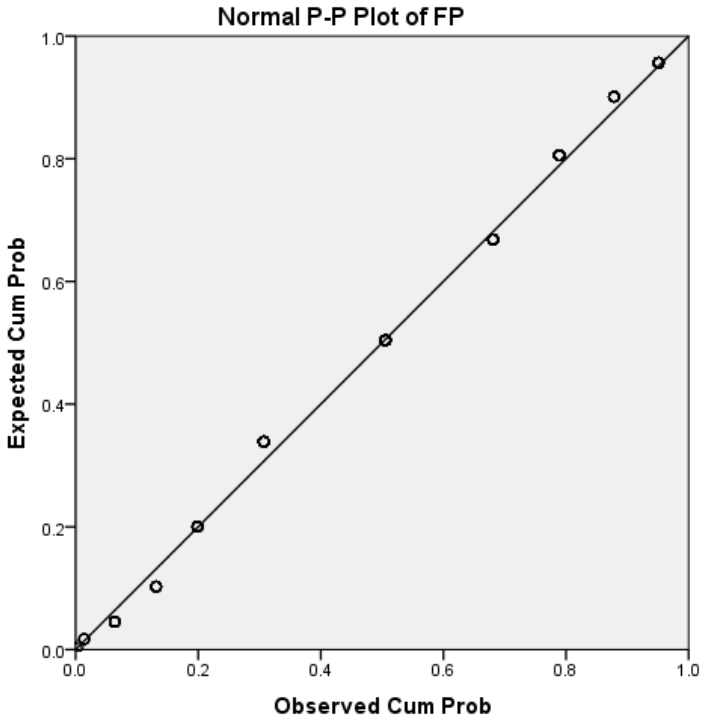
P-P Plots for Multi-Dimensional Construct – Emotional Positioning



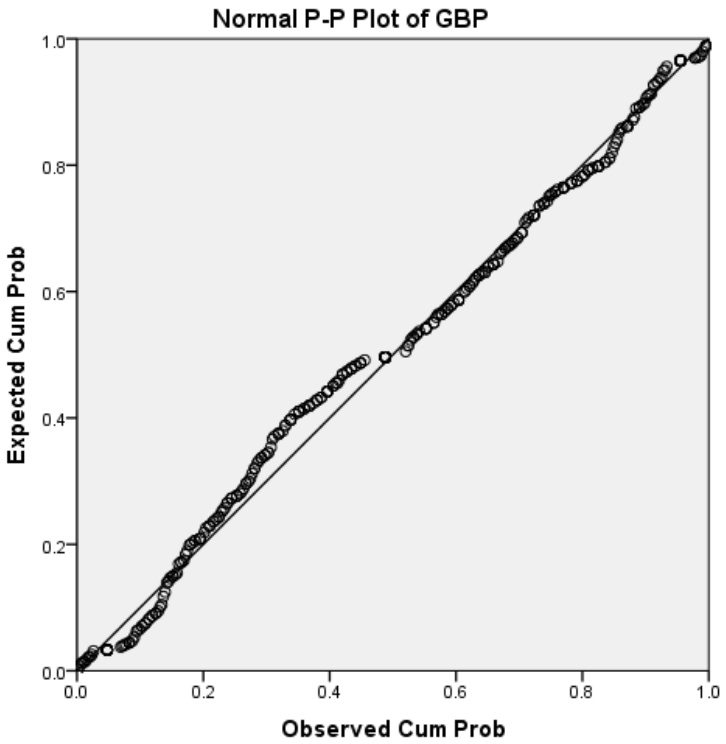
P-P Plots for Multi-Dimensional Construct – Green Positioning



P-P Plots for Multi-Dimensional Construct – Functional Positioning



P-P Plots for Multi-Dimensional Construct being combination of Emotional Positioning, Green Positioning and Functional Positioning forming the Green Brand Positioning



APPENDIX E

Journal Publication List

Residential properties with green living concept: what drives consumers to buy?

Rames Sivadasan and Farzana Quoquab
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Received 15 April 2020
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2 June 2020
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Abstract

Purpose – The purpose of this study is to investigate consumers' buying intentions (BIs) towards sustainable properties with green living concept (GLC). It also aims to examine the dynamic relationships between environmental advertisements (EAd), green brand positioning (GBP), attitude towards environmental responsibility (ER) and consumers' sustainable properties BI in the Malaysian context.

Design/methodology/approach – Data were collected via online questionnaire survey, which yielded 143 completed usable responses. Structural equation modelling–partial least squares (Smart PLS, version 3) was used to analyse the data.

Findings – The findings of this study revealed that EAd and GBP significantly affect consumers' attitude towards ER, which in turn affects consumers' BI of the sustainable properties with GLC.

Practical implications – This study suggests that without inculcating a positive attitude towards the environment among consumers, it becomes a daunting task to drive consumers to purchase sustainable properties in Malaysia. Thus, the marketers should focus on green promotional activities to attract more customers to buy sustainable properties with GLCs. Moreover, it is suggested to target the right market segment to secure more sales.

Social implications – The findings of this study will enable the government and the social marketers to understand the drivers of buying sustainable properties with GLC, which in turn will contribute to the higher environmental welfare.

Originality/value – This study is among the pioneers to examine consumers' sustainable property purchase intention. It provides significant insights for the social marketers and policymakers to understand how to motivate consumers to purchase sustainable properties with GLCs. Moreover, this study has investigated few comparatively new links such as the direct effect of EAd and GBP on attitude towards environmental responsibility and the mediating effect of attitude towards environmental responsibility between environmental stimuli and consumer's sustainable properties BI.

Keywords Green brand positioning, Sustainable property buying intention, Environmental advertisement, Attitude towards environmental responsibility

Paper type Research paper

Introduction

Environmental deprivation, global warming, climate change and extreme CO_2 release in the world significantly impacted the quality of life worldwide (Chua *et al.*, 2020;

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DOI 10.1108/IJOES-04-2020-0042

Green Housing Development: Is it Really Sustainable?

Rames Sivadasan, Rohaida Basiruddin

To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v9-i12/6740 DOI: 10.6007/IJARBSS/v9-i12/6740

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