FACTORS INFLUENCING CONSUMERS' PURCHASE INTENTION AND WILLINGNESS TO PAY TOWARDS GREEN RESIDENTIAL BUILDINGS IN MALAYSIA

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LIST OF ABBREVIATIONS

ATT	Attitude
AVE	Average Variance Extracted
BI	Behavioural Intention
CFA	Confirmatory Factor Analysis
CR	Composite Reliability
CSR	Corporate Social Responsibility
DBKL	Kuala Lumpur City Hall
df	Degree of Freedom
DV	Dependent Variable
EC	Environmental Concern
EFA	Exploratory Factor Analysis
EPA	Environmental Protection Agency
FR	Financial Risk
GBI	Green Building Index
GoF	Goodness-of-fit
H	Hypothesis
IV	Independent Variable
MBPJ	Petaling Jaya City Council
n	Number of Respondent
PBC	Perceived Behavioural Control
p	P Value
PI	Purchase Intention
PLS	Partial Least Square
PLS-SEM	Partial Least Square-Structural Equation Modeling
PM	Perceived Moral Obligation
PR	Performance Risk
PRM	Proposed Research Model
PS	Perceived Self- Identity
PSR	Psychological Risk
PV	Perceived Value
Q^2	Q Square
R^2	R Square
SE	Standard Error
SEM	Structural Equation Modeling
SN	Subjective Norm
SPSS	Statistical Package for the Social Sciences
TPB	Theory of Planned Behaviour

TRA	Theory of Reasoned Action
UNEP	United Nations Environment Programme
UOA	Unit of Analysis
WTP	Willingness to Pay
β	Beta
α	Cronbach's Alpha

ABSTRAK (MALAY)

Kajian kontemporari ini dijalankan dengan menunjukkan penyesuaian Teori Tingkah Laku Terancang (TPB), untuk mengkaji faktor-faktor yang mempengaruhi niat pembelian pengguna Malaysia terhadap bangunan kediaman hijau dan cara niat pembelian mempengaruhi kesanggupan mereka berbelanja untuk bangunan ini. Soal selidik tadbir sendiri telah direka dengan menggunakan skala yang ditetapkan. Seramai 304 responden dari daerah Selangor, Johor dan Pulau Pinang terlibat dalam kajian ini dan data diperolehi dengan kaedah rentas melalui rangkaian sosial, pusat membeli-belah dan pameran hartanah. Analisis data dibuat dengan menggunakan perisian *Statistical Package for the Social Sciences* (SPSS) dan *Partial Least Square* (PLS). Hasil kajian didapati daripada analisis menunjukkan sikap terhadap bangunan kediaman hijau adalah faktor penting yang mempengaruhi keinginan pembelian pengguna, seterusnya diikuti dengan persepsi identiti diri dan persepsi nilai. Sebaliknya, norma subjektif, persepsi kawalan perilaku, risiko prestasi dan risiko psikologi didapati tidak mempunyai pertalian secara signifikan dengan niat beli. Risiko kewangan disokong bahawa ia memberi kesan negatif terhadap niat pembelian bangunan kediaman hijau. Di samping itu, persepsi kewajipan moral dan keprihatinan alam sekitar telah memberi kesan positif pada keinginan pembelian pengguna Malaysia terhadap bangunan kediaman hijau. Penyelidikan ini memberi pemahaman yang mendalam tentang niat pembelian pengguna Malaysia terhadap bangunan kediaman hijau. Hasil kajian ini boleh digunakan untuk merangka dan membentuk strategi strategi bagi pemaju perumahan, syarikat-syarikat hartanah, ahli akademik, pembuat dasar, dan badan-badan kerajaan untuk meningkatkan pembelian

bangunan kediaman hijau dan mengurangkan pelepasan gas rumah hijau (GHG) daripada sektor hartanah tempatan.

ABSTRACT

The contemporary study demonstrates the adaptation of Theory of Planned Behaviour (TPB) to examine the factors influencing Malaysian consumers' purchase intention towards green residential buildings and how purchase intention affects their willingness to pay for such buildings. A self-administered questionnaire was designed using established scales. A survey of 304 respondents was conducted in Selangor, Johor and Penang through social networks, mall and property exhibition intercept methods. Statistical Package for the Social Sciences (SPSS) and Partial Least Square (PLS) were used to examine data analysis. The result driven from analysis revealed that attitude towards green residential building is an essential factor that influences consumers' purchase intention, followed by perceived self-identity and perceived value. In contrast, subjective norm, perceived behavioural control, performance risk and psychological risk were not significantly related to purchase intention. The financial risk was supported that it was negatively impacted the purchase intention of a green residential building. In addition, perceived moral obligation and environmental concern were positively impacted on Malaysian consumers' purchase intention towards green residential buildings. The research provides an in-depth understanding of Malaysian consumers' purchase intention towards green residential buildings. The research findings can be used to formulate strategies for the housing developers, real estate companies, academia, policy maker and governmental bodies to enhance the purchase of green residential buildings and reduce greenhouse gases (GHG) emission from the local real estate sector.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter laid the foundations for the thesis. It provides an outline about the study of the factors influencing consumers' purchase intention towards green residential buildings. It begins with background of study followed by a discussion on the problem statements, research objectives, research questions, scope of study, definition of major key terms and significant of study. Toward the end of this section, organizational of the study will be discussed.

1.2 Background

1.2.1 Conventional Buildings Issues

The issues of sustainability have ended up more significant in today's land market. There is an increment in the awareness and consciousness of the general population to the rapid ecological changes that are occurring worldwide. Various studies on consumers highlighted that there is an expanded positive attitude and observation toward organizations sensitive to environmental matters (Han, Hsu & Lee, 2009; Han & Kim, 2010; Yam & McGreal, 2010).

In addition, society becomes more aware of the physical structure of environmentally-friendly buildings (Fuerst & McAllister, 2011). The main reason is the

buildings are the main potential component in the reduction of greenhouse gases (Levine et al., 2007).

Deng, Li and Quigley (2012) uncovered that buildings and their related construction activities represent very nearly 33% of world greenhouse gas emissions, and the construction and operation of buildings record for around 40% of worldwide utilization of resources and energy. The greenhouse gas emissions from the building sector will be more than twofold in the following 20 years if no actions made or nothing to be done (United Nations Environment Programme, 2009).

Feliciano and Prosperi (2011) argued that construction industry consumed most of the raw materials, therefore low carbon footprint of environmentally sustainable building is particularly essential for sustainable development. Therefore, the construction industry is a key sector for sustainable development.

1.3 Overview of Green Residential Buildings

Based on the online resources obtained from Green Building Index (GBI) website, Malaysian government has launched the Green Building Index (GBI) on 21 May 2009. To be in line with the Malaysian government's effort to go green, all housing developers in Malaysia are pressed to design and construct houses for sustainable living (Tan, 2014). GBI is currently issuing four levels (normal, silver, gold and platinum) of certifications and these certifications are becoming increasingly important to companies which looking for buildings that are more environmentally-friendly (Dass, 2013).

As reported by online newspaper The Star, the Petaling Jaya City Council (MBPJ) announced that all the new commercial and residential projects must fulfill the list of green criteria that set by the MBPJ and it plans to make a sustainable city come 2030 by kicking off with a low carbon city framework programme in the year 2014 (Ch'ng, 2014). In order to raise the enthusiasm of purchasing green properties, purchasers of properties granted GBI certificate are qualified for stamp duty exemption of green buildings (Green Building Index, 2013). Additionally, the materials and hardware cost for green buildings have dropped and it is feasible for consumers to own a green building (Choong, 2014).

As a result, with the government's strengthen the utilization of energy saving measures for residential buildings, the real estate developers have perceived the thriving market demand for green housing development projects and a bigger number of green projects are developed in the nation (Ortiz, Castells & Sonnemann, 2009). Similarly, there are currently 214 development projects affirmed by GBI as being green projects and the green building fever is fast getting on in Malaysia (Green Building Index, 2013a).

To stay aggressive and keep on expanding in the future, the building industry aware it must address the environmental consequences of its activities to meet their economic objectives (Ortiz et al., 2009). For example, Petaling Jaya City Council (MBPJ), developers SP Setia Berhad, Kuala Lumpur City Hall (DBKL) and Sunway Group were individually recognized for developing the greatest number of green guaranteed buildings ("Green Award", 2014). In the meantime, Johor Baru has been perceived as the first Smart Healthy City and Communities Township and model township in Iskandar Malaysia (Benjamin, 2014).

Numerous studies have demonstrated that “green” buildings achieve positive advantages (Retzlaff, 2009; Dass, 2013; Thompson & Ke, 2012). Developers are understanding that regardless of the marginal ascent in building expenses when they choose to make their projects “green”, there are marked favourable circumstances for doing as such, like their properties bringing higher prices and the developments being connected with glory (Dass, 2013). Property developers remained to advantage from building green structures as far as accomplishing higher sales or rentals (The Star, 2013).

Dass (2014) pointed that green buildings allowed owners to command an additional selling price of RM25 to RM50 every square foot above the market in Malaysia and these externalities have added to the general reputation of the property. A green residential building with an extended economic life is naturally connected with a higher price because the owners face lower life-cycle costs (Yoshida & Sugiura, 2015).

Accordingly, numerous developers see green certifications for their projects as a rapid ticket to greater profit and an intention to raise the gross development value of their projects (Dass, 2013). Numerous key players in building industry demonstrated the advantages of venturing in green buildings (Retzlaff, 2009).

Besides real estate industry, the organizations with great performance are prone to venture more in sustainability and bigger firms have better defined corporate social responsibility (CSR) (Thompson & Ke, 2012). Green buildings generally utilize key resources like energy and water more productive than conventional buildings, leading to more saving in electricity bill (Newsham, Mancini & Birt, 2009; Yean & Gunawansa, 2011).

Furthermore, green buildings have the capacity to increase employees' productivity with better working condition and environment (Eichholtz, Kok & Quigley, 2010). Accordingly, the "greener" organizations often defeat others in the share trading market (Thompson & Ke, 2012).

Other than that, implementing carbon remission options in green buildings are connected with a set of advantages such as the generation of occupations and business opportunities, elevated economic intensity and energy security, social welfare benefits for low-pay families, enlarged access to energy services, enhanced indoor and outdoor air quality, and increased amenity, well-being and quality of life (Levine et al., 2007). As a result, green buildings don't just save cost, whilst offering a safe and sound living space, additionally minimize the negative effect on the natural habitat and give a positive appearance to the property (Jayathan & Man, 2013).

1.4 Consumer Response to Green Residential Buildings

Going green has ended up prevalent among households, and numerous individuals are taking up this trend by adopting an eco-friendly way of life (Tan, 2014). This ecological concern has changed into environmentally favourable practices and eco-friendly purchasing decisions (Paco & Rapose, 2009).

A few variables build the interest of the green residential buildings such as cost saving (Yean & Gunawansa, 2011), higher selling price and rental (Deng et al. 2012) and also safe and healthy living space (Jayathan & Man, 2013). Todays, there are numerous

residential building projects in Malaysia which are affirmed by Green Building Index (GBI) and the projects were met with incredible enthusiasm from home buyers and investors alike (List of GBI certified building referred to Appendix A). Numerous buildings designed under GBI have now been occupied with high occupancy rates.

One of the GBI certified projects, specifically Molek Pine 3, is a freehold low density extravagance condominium from Berinda Properties in Johor Bahru. It has effectively sold out all its 212 high rise units (28 storeys) and currently 36 low rise units (6 storeys) are open for sales (Berinda Properties, 2015).

Likewise, THE Light Waterfront Penang is another GBI certified project in Penang. Phase One project with GBI certificate such as The Light Linear, The Light Point and The Light Collection I and II hits the astounding sales. All The Light Linear 328 elegant modern seaview condominium units have been sold off. The Light Point has been 90% sold off out of 88 condominium units. The Light Collection I and II are 70% (total 152 condominium units) and 82% (total 297 condominium units) sold respectively ("Waterfront dream taking shape", 2012).

Furthermore, KEN Rimba Legian Residences was certified and given a green award by GBI in 2010. The sum of 328 units of double-storey terraces were completely sold out in the year 2013 (Ken Holdings Berhad, 2013).

With the expanding consumer purchase intention of green residential buildings, it indicates that the market demands fundamentally determined the availability and structures of green building developments (Chau, Tse & Chung, 2010). In addition, the study of Kwak, Yoo and Kwak (2010) stressed that the consumers were intrigued and

willing to pay more on green building features such as installation of ventilation systems and thicker walls. Hence, an understanding of potential house-purchaser towards green residential buildings ought to play a significant role in determining the triumphs on green residential building development (Chau et al., 2010).

1.5 Problem Statement

Todays, built environment plays a significant role in the wider debates on environmental change and ecological protection on the grounds that the construction and operation of buildings expend energy and devote to carbon emissions significantly (CB Richard Ellis, 2009). In the real estate sector, residential buildings emphatically contribute to worldwide greenhouse gas carbon dioxide (CO2) emissions because of the high energy demand for electricity power and heating, especially in industrialized nations (Achtnicht, 2011).

Furthermore, the extreme greenhouse gas causes the weakening of climate changes which undermine every living being on the planets and the crisis includes ascending of ocean level, lopsided ecosystem, diminished biological diversity and extreme climate (Chen, Chen, Chen & Hsieh, 2012). Meanwhile, numerous natural disaster happened in 2012 such as typhoons, floods, earthquakes, landslides and around one million residents were affected (Lan & Sheng, 2014). As a result, global warming is increasing and 15 areas or territories in Peninsular Malaysia have not had rain in over 20 days, with some dry for over a month (Lim, 2014).

Because of an unnatural climate change, property organizations are under pressure from a wide range of stakeholders to actualize sustainable strategies and numerous property investment managers are presently starting to react to pressure from actors outside the property sector (Thompson & Ke, 2012). The real estate plays an essential role in influencing the environment (Deng et al., 2012). The real estate sectors, including residential and commercial, are the highest sectors to cost effectively reduce the projected baseline emissions of approximately 29% by 2020 (Levine et al., 2007).

Moreover, recently eco-friendly building has been promoted as a most vital strategy for encouraging energy saving during the residential houses developing process and the concept has been a critical strategy to diminish the disintegration of the earth (Lan & Sheng, 2014). Green buildings prompts the development of innovation technologies toward greater cleaner and efficient use of energy as well as integrate harmony between individuals and earth in building layout or design (Huang, Yuan, & Shen, 2012). As the market demand fundamentally determines the availability of green buildings, comprehension of consumer behaviour should play an essential role in identifying their successes (Chau, Tse, & Chung, 2010).

However, to date, less empirical works has been attempted to investigate consumers' behaviour towards green residential building developments in Malaysia. For instance, Tan (2014) unveiled the satisfaction of consumers towards their green building inhabitants in Iskandar Malaysia which covers the southern part of Johor State. Lamentably, the findings reported that the consumers are not satisfied towards the performance of green infrastructures and equipment. Green communities did not attract

ecologically savvy house owners, leaving in uncertainty the behavioural sustainability for any development that has green infrastructure (Hostetler & Noiseux, 2010).

In addition, besides consumer behaviour towards green residential buildings, some studies did disclose the environmental practices in New Zealand (Eves & Kippes, 2010); environmental benefits that affects energy retrofits choices for existing houses in Germany (Achtnicht, 2011); effect of green experience on preferences and willingness-to-pay for green building attributes in Hong Kong (Chau et al., 2010); economic returns to energy-efficient investments in the housing market in Singapore (Deng et al., 2012); valuation by residents towards green apartments in China (Hu, Geertman & Hooimeijer, 2014) and there were different studies concentrated on the advantages of green buildings in United States (Eichholtz et al., 2010; Fuerst & McAllister, 2011) and Netherlands (Brounen & Kok, 2011; Kok & Jennen, 2012).

Subsequently, past research proposes in-depth studying house purchase behaviour with distinctive factors other than location, green attributes, neighbourhood social and physical quality (Hu et al., 2014). Henceforth, other studies explore house purchase behaviour with diverse components such as perceived moral obligation (Chen & Tung, 2014; Dean et al., 2012; Dowd & Burke, 2013), environmental concern (Hartmann & Apaolaza-Ibanez, 2012), perceived value (Chen & Chang, 2012), and perceived risk (Han & Chung, 2014). Moreover, Hu et al. (2014) proposed that opinion from potential customer of the house purchase need to be examined and there is an apparent need to additionally examine the willingness to pay among prospective house purchasers.

Accordingly, the present research is intended to bridge this gap, fill this void in the literature and analyzes the elements influencing consumers' purchase intention and willingness to pay towards green residential buildings with appropriate sample in Malaysia. Potential house purchasers are instrumental for the accomplishment of a housing development (Yam & McGreal, 2010). In the view of the green buildings are expected to be risen in the near future, this finding should be vital in this manner (Chau et al., 2010).

1.6 Research Objectives

Referring to the problem statement above, this study is to attain the stated objectives:

1. To investigate whether attitude towards green residential buildings, subjective norms, perceived behavioural control, perceived moral obligation, environmental concern, perceived value, perceived self-identity, and perceived risk influence consumers' intention to purchase green residential buildings in Malaysia.
2. To examine the relationship between the consumers' purchase intention and willingness to pay towards green residential buildings in Malaysia.

1.7 Research Questions

The objectives of this research prompt the research questions as follows.

1. Do attitude towards green residential buildings, subjective norms, perceived behavioural control, perceived moral obligation, environmental concern,

perceived value, perceived self-identity, and perceived risk influence consumers' intention to purchase green residential buildings in Malaysia?

2. Is there any relationship between consumers' purchasing intention and willingness to pay towards green residential buildings in Malaysia?

1.8 Definition of Key Terms

In order to share a common understanding of the concepts and for better comprehension of further discussion, the following key term's definition were referred specifically.

1.8.1 Purchase Intention

Purchase intention is a blend of consumers' enthusiasm for purchasing a green residential building and the likelihood of purchasing (Schniederjans & Starkey, 2014).

1.8.2 Attitude towards Green Residential Buildings

Attitude towards green residential buildings refers to the degree where a purchaser has a favourable or unfavourable examination of certain behavioural (Tan, 2013).

1.8.3 Subjective Norms

Subjective norm is viewed as a consumer's impression of social pressure to buy or not to buy certain commodities (Teng & Wang, 2015).

1.8.4 Perceived Behavioural Control

Perceived behavioural control is regarded as consumer's perception of their capacity to buy certain products (Tan, 2013).

1.8.5 Perceived Moral Obligation

Perceived moral obligation reflects the consumer's view of the ethical correctness or incorrectness of protecting natural resources (Chen & Tung, 2014).

1.8.6 Environmental Concern

Environmental concern can be characterized as a consumer's view of a nation's environment (Newton, Tsarenko, Ferraro & Sands, 2015).

1.8.7 Perceived Value

Perceived value is referring to a group of ascribes which are identified with the view of an item's value (Chen & Chang, 2012).

1.8.8 Perceived Self-identity

Perceived self-identity is viewed as the notable aspects of a consumer's identity toward buying an item (Tan, 2013).

1.8.9 Perceived Risk

Perceived risk can be regarded as consumers confronting products or services they are uncertain of because of some kind of expected misfortune in mind which prompts misery or unbalance (Wu, Yeh & Hsiao, 2011).

1.8.9.1 Financial Risk

In this study, financial risk refers to the worries about the price of the green residential buildings and the possible financial misfortune, which hinges upon the price of the buildings (Wu et al., 2011).

1.8.9.2 Performance Risk

Performance risk can be regarded as the concern about the expected capacity of the item (Wu et al., 2011).

1.8.9.3 Psychological Risk

Psychological risk can be characterized as the concern that a bought item will go against a consumer's self-image which may include dissatisfaction and disappointment as an aftereffect of the purchase (Han & Chung, 2014).

1.8.10 Willingness to Pay

Willingness to pay is regarded as the highest cost a consumer is willing to pay for an item (Han et al., 2009).

1.9 Significance of the Study

Consumer purchase intention and behaviour has been an imperative exploration topic for decades. The comprehension of consumer behaviour and purchase intention helps in recognizing the weak points and furthermore reflects the positive aspect of any business.

1.9.1 Theoretical Contribution

For theoretical contribution, this research contributes to the green residential buildings purchasing literature by examining which factors impact consumers' green residential buildings purchasing intention. The study serves to advance literature concerning Malaysian consumers in regards to their purchase intention towards green residential buildings. The development of such a conceptual framework gives a complete comprehension of consumers' purchasing intention with respect to green residential buildings in Malaysia.

In addition, the research on green residential building's consumption provides advanced knowledge and learning for the marketers. The housing developers need to comprehend their potential customers towards sustainable homes in order to gain from the market.

Consequently, the endeavors placed in this study give a driving force to more work in related areas. The discoveries and findings can likewise be connected to different area of inquiry other than green residential building's consumption. The application of the TPB to green residential building's purchase will provide an empirically grounded

model to help comprehend the basic elements impacting consumer purchase of green residential buildings instead of conventional residential buildings.

A further contribution of the study will be added to existing studies that extend the TPB to consider the role of moral norms, perceived value, perceived self-identity and perceived risk in clarifying purchase intention. Moreover, the current research might grant to the present wealth of knowledge and learning in the area of psychological modeling for researchers and therefore inspire further research in consumer behaviour and conduct.

1.9.2 Practical Contribution

For practical contribution, this study is significant to housing developer and government in light of the fact that it provides important information for enhancing the housing delivery framework by tending to housing demands of house purchasers. In this study, the priority was given to distinguishing and investigating the purchase intention behind potential house purchasers, which provided a priceless comprehension into their idea of a suitable living arrangement.

In the meantime, housing developers ought to provide green residential buildings that are favourable by the house purchasers to address the demands of progressively affluent and discerning consumers. Consequently, with a superior comprehension of consumers' purchase intention in the areas identified with their environmental concern, perceived value and risk towards green residential buildings, housing developers can identify the activities needed to address their customer's needs.

In order for housing developers to better position themselves and survive in the housing market, they should be sensitive to house purchasers' interests by determining the components related to home-ownership priorities. Appropriately, this study might assist real estate companies to distinguish the nature of consumers' attitudes and different variables toward green residential buildings so that adequate promoting methods can be developed.

Besides that, comprehension of the consumer behaviour creates innumerable chances to generate markets for green building materials and practices that use recycled materials or utilize less poisonous ingredients or parts. Meanwhile, it enhances the country's economy through the advancement of the house construction industry. Subsequently, the information of this study will offer significant knowledge that can be used for anticipating and impacting behaviour such as making it easier to participate in green residential buildings purchase intention.

Ultimately, the government can apply the findings of this study as a reference to develop the green building encouragement policy. The housing developers can likewise plan the strategies of green building marketing.

Thus, a more profound comprehension of potential house purchaser demands is likewise valuable for government policymakers as they can channel their major consideration to those areas that potential house purchasers have weaker inclinations in their resource allocation and quest for sustainability excellence.

1.10 Organization of the Remaining Chapters

This study is organized in five chapters. The first chapter presents an introduction and additionally an overview of this study. The second chapter exhibits the review of literature that blueprints past studies embraced in connection to factors that drive the consumers' purchase intention towards green residential buildings, theoretical framework and the hypotheses development. Chapter three represents the information and variables in terms of research design, sample collection, measurement of variables and the method of data analysis. Chapter four investigates the results of finding utilizing both SPSS and Smart PLS software, focusing on statistical analysis, descriptive statistic, validation analysis, reliability analysis and structural equation modeling analysis. At last, chapter five illustrates the overall findings, implications of the research and limitation of the study as well as suggestion and recommendation for future research and conclusions.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the past literature to establish a theoretical foundation whereupon research hypotheses can be formulated. This chapter starts with a clarification of green buildings, following by review of green residential buildings and the theory of planned behaviour which prompts an exhaustive and evolutional theoretical review. The theory of planned behaviour is affirmed in a consequent review of the extant empirical research on the issues including consumer behaviour research. Subsequently, this chapter will give an overview of the previous literature on the key terms of this study such as the factors of attitude towards green residential buildings, subjective norms, perceive behavioural control, moral norms, environmental concern, perceived value, perceived self-identity and perceived risk; consumers' purchase intention towards green residential buildings and their willingness to pay for green residential buildings. At last, research framework and research hypotheses are proposed in Section 2.15 and 2.16, based on the relevant literature review.

2.2 Outline of Green Residential Buildings

The phrase green is otherwise named as eco-accommodating, sustainable or ecologically friendly (Pizam, 2009). Ecological sustainable buildings are generally called green buildings (Environmental Protection Agency (EPA), 2009).

The idea of green building has distinctive name in worldwide. Green buildings are structures with predominant environmental performance (Yoshida & Sugiura, 2015). It is a sort of development that tries to build the sustainability and effectiveness of buildings and development (Retzlaff, 2009).

The concept of green building underlines fundamentally on the green development matters of protection, energy saving, biological equalization and renewable energy sources (Lan & Sheng, 2014). It is the act of expanding the proficiency of new buildings, and decreasing their effect on human well-being and the earth through superior construction, maintenance, site area, operation, design and evacuation (Environmental Protection Agency, 2009).

Green Building Index (GBI) (2013) pointed there are six requirements to achieve for the sake of recognizing as a green building. There are water efficiency, innovation and advancement, sustainable site planning and management, energy efficiency, materials and resources as well as indoor environmental quality. This concept extends and complements the traditional building configuration that concerning comfort, utility, economy and strength (Environmental Protection Agency, 2009).

In the context of green residential buildings, the contrast between non-residential building and residential one is that the previous typically works at maximum capacity during the day whilst homes run at peak in the evening and night (Kamalakaran, 2013). Residential buildings are viewed as green when they utilize ecologically friendly materials for construction and it raises the efficient of resources use such as energy, water and materials (Kamalakaran, 2013). Green residential buildings use renewable energy,

water protection devices, recyclable timber items, recyclable roof systems, recyclable kitchen cupboards, certified energy efficient instruments, reduced fluorescent lamps, light-discharging diode lighting system, solar panels, rainwater harvesting system, energy efficiency instruments and latent design for natural cooling and heating (Tan, 2014).

Moreover, not just a greener residential building can be more energy and water efficient, it additionally can have a decreased carbon footprint, be less extravagant to operate, and be a healthier place to live (Environmental Protection Agency, 2009). Green residential building decreases the building effect on human well-being and the nature throughout the building's lifecycle by having better construction, design, maintenance, siting, operation and evacuation (Kamalakaran, 2013).

2.3 Purchase Intention of Green Residential Buildings (PI)

Intentions to perform a behaviour are conceived as the most critical and essential indicators of behavioural execution, and mediate the impacts of attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991; Ajzen & Madden, 1986).

Fishbein and Ajzen (1975) have characterized intentions as an individual's place on subjective likelihood dimension including a connection in the middle of an individual and some actions. Purchase intention is a compound of shoppers' enthusiasm for buying merchandise and the probability of acquiring. It is an impulse by subjective norm, attitude towards purchasing and perceived behavioural control (Ajzen, 1991). The Theory of Planned Behaviour (TPB) was used to clarify purchase intentions among other

theories. It determines the intention to purchase specific merchandise through the application of a fabulous framework (Ajzen & Madden, 1986; Tan, 2013).

Purchase intention has been analyzed over a scope of green items. For example, the studies of organic food that was conducted in Taiwan with 693 respondents (Teng & Wang, 2015); Italy with 291 samples (Pino, Peluso & Guido, 2012); Malaysia with 184 participants (Abdullah, Sheikh, Muhammad & Mohd, 2014); and U.K with 499 samples (Dean, Raat & Sheppard, 2012).

Moreover, other green products were used in examining the purchase intention. For example, environmentally sustainable apparel that conducted in South Korea and United States with total numbers of 267 samples (Kang & Kim, 2013); Eco-friendly product that held in Italy with 926 respondents (Barbarossa & Pelsmacker, 2014); environmentally friendly wines in U.S with 120 samples (Barber, Kuo, Bishop & Jr, 2012) and additionally green electric motorcycle in Taiwan with 305 participants (Wu, Wu, Lee & Lee, 2015).

In this manner, Sheppard, Hartwick and Warshaw (1988) recommended a solid connection between intention and behaviour. However, Tan (2013), Kang & Kim (2013), Kim et al. (2013), Chen and Tung (2014), Wu et al. (2015) and Amatulli and Guido (2011) supported and defended the use of behavioural intention (BI) as a dependent variable.

As a general rule, the majority of studies have demonstrated that a more uplifting subjective norm, attitude and greater perceived behavioural control should reinforce a

person's intention to carry out the conduct under consideration (Ajzen, 1991; Liebe, Preisendorfer & Meyerhoff, 2011).

Over the past decade, public worries about environmental and ecological issues have been on the increment. Consumers have gotten to be more mindful of the environmental effect of their purchasing choices (Kim & Chung, 2011). They are aware that their purchasing behaviour may do mischief to the earth and begin to inquiry and buy eco-friendly items, once in a while even paying more for such items (Lee, Hsu, Han & Kim, 2010).

With the expanding public consciousness of Corporate Social Responsibility (CSR), house-purchasers favour socially responsible developers who are delicate to their housing needs (Yam & McGreal, 2010). Today, society gets to be more affluent and consumers are more educated about rating certificates, their styles of consumption are changing. The youngsters of the middle class are searching for green features in new homes, besides considering elements such as location, design and a reputable developer (Lim, 2014).

Furthermore, research found that both traditional and green house owners were ready to pay more and had solid inclinations for enhancing different aspects of ecological and environmental performance in sustainable residential expansions (Chau & Chung, 2010). House purchasers request a typical house to stay and also sustainable houses that do not compromise the nature and they are spurred to possess green residential buildings that could achieve a desired level of livability that is in line with the principles of sustainability (Tan, 2014).

Nonetheless, there are repudiated past research discoveries that ecologically savvy house owners were not keen to green residential developments (Hostetler & Noiseux, 2010). The unfavorable results are partly because of the house purchasers' inclinations for green residential expansion were unexplored or even unaddressed.

2.4 Attitude towards Green Residential Buildings (ATT)

There is a need to know the potential house purchasers' attitude towards green residential buildings for the sake of determining their buying intention. As indicated by Fishbein and Ajzen (1975) with the theory of reasoned action (TRA), an individual's behavioural intention relies on his or her attitude toward the conduct.

As per Ajzen and Madden (1986) and Ajzen (1991), attitude can be viewed as the level of favourable or unfavourable assessment from a person toward the given behaviour. It is an assessment from an individual, either positive or negative toward performing a particular behaviour (Ajzen, 1991). This attitude is taking into account prominent result evaluations and behavioural beliefs. Behavioural beliefs are regarded as one's perceived plausibility of an expected outcome's occurrence by including in a specific conduct, and outcome assessments include the evaluation of the possible outcomes of a particular behaviour (Ajzen & Fishbein, 1980).

Moreover, people will reinforce a positive attitude toward a conduct if they have confidence in the demonstration of that particular conduct will build a decent result

(Ajzen & Fishbein, 1980). According to the TPB, attitudes fill in as a key determinant of behavioural intentions.

As indicated by Schniederjans and Starkey (2014) as well for Kang and Kim (2013), attitude towards green items had an effect on purchase intention in the context of green products. A few researchers uncovered that attitude towards the organic food had a positive critical effect on their purchase intention (Abdullah et al., 2014; Dean et al., 2012; Teng & Wang, 2015).

In addition, Punyatoya (2015) presumed that consumers with positive environment-friendly brand attitude have fundamentally higher intention to buy the brand. Similarly, it was revealed that ecological attitude was a critical indicator of environmental behaviour in the study of Singh and Gupta (2013).

Besides, the adoption of an internal environmental attitude was discovered to be helpful for determining green purchasing behaviour and an outward environmental attitude encourages the selection of a general environmental behaviour (Leonidou, 2010). Kim and Chung (2011) further stressed that consumers' attitude toward buying organic skin care items had a positive effect on their purchase intentions.

Furthermore, Tan (2013) uncovered that attitude towards green homes was a critical indicator of purchasing intention. The individuals with a greater positive attitude towards green homes would be more probable to purchase such homes (Tan, 2013). In moral consumption studies, subjective norms were a weaker indicator compare to attitude (Marcketti & Shelley, 2009). Similarly, Michalos et al. (2012) reports that attitudes are more influential than knowledge in identifying sustainable development behaviours.