HOME BUYERS BEHAVIOURAL INTENTION MODEL OF GREEN RESIDENTIAL IN INDONESIA

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UNIVERSITI TEKNOLOGI MALAYSIA
HOME BUYERS BEHAVIOURAL INTENTION MODEL OF GREEN RESIDENTIAL IN INDONESIA

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A thesis submitted in fulfilment of the requirements for the awards of the degree of Doctor of Philosophy (Real Estate)

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Blessed be the Lord Jesus
To my beloved Kukuh Lukiyanto,
Keona and Callysta
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Green residential is developed with the objective to reduce and eliminate negative environmental impacts. Home buyers as an essential element of the green housing market have been aware of and realise the benefits of green residential compared to the conventional home. However, there is a discrepancy between home buyers and developers, since developers proclaim that their development projects are green and promote green residential as a gimmick. Thus, to succeed in the green residential development, developers should understand the home buyer intention factors of purchasing green residential based on green building rating criteria in Indonesia. Home buyers’ are affected by their internal and external factors in term of the residential purchase behaviour. However, limited research considers both of those factors as the determinant of home buyer behavioural intention. The aim of this study is to determine the factors of the home buyers’ behavioural intention to buy green residential and relationship between the behavioural intention factors by developing the model of home buyers’ behavioural intention of green residential. The behavioural intention factors that influence home buyers to purchase the green residential were collected and gathered through the literature review on previous studies from journals, reports, articles and others. The conceptual framework adopted the Theory of Planned Behaviour (TPB) which the evidence empirically has the predictive ability on the buyer’s behavioural intention. The data was collected through self-administered questionnaire by cross-sectional survey and gathered from 414 prospective home buyers’ after a data screening process. The descriptive and confirmatory factor analyses performed on the main TPB and extended TPB factors. The main TPB factors are attitude towards green residential and behavioural belief; subjective norms and normative belief; perceived behavioural control and control belief. The extended TPB factors consist of environmental knowledge, environmental concern, green awareness, self-image, culture value, and green lifestyle. The inner model analysis of Partial Least Square-Structural Equation Modelling was applied to determine the relationship between main TPB and extended TPB factors, then develop the behavioural intention model from the significant relationship. The result supported the application of extended TPB to predict the home buyer behavioural intention of green residential in Indonesia. The major factors which form the model are the subjective norm and normative belief; perceived behavioural control and control belief; and environmental knowledge. This study contributes to the developers, government, as well as for home buyers should apply the behavioural intention model as a framework which contains the green building rating criteria for the success of green residential development in Indonesia.
ABSTRAK

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<td>276</td>
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<td>E</td>
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<td>278</td>
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CHAPTER 1

INTRODUCTION

1.1 Introduction

Green residential is part of the green building which is the major users of resources, namely the energy and water consumption, raw material employment and usage of land. The home buyer is an important element for the success of implementing green residential. Research in consumer behaviour of the property market has proven that home buyers’ psychosocial factors have influenced their intention to perform the behaviour. The Theory of Planned Behaviour (TPB) is one of the theories conducted to predict the intention in many contexts of environmental behaviour particularly the purchasing intention of green products. The three main predictors of the TPB are the attitude towards the behaviour, subjective norm, and perceived behavioural control. Many researchers have postulated that the additional factors in the TPB can improve its predictive capabilities, namely the extended TPB. Accordingly, this study will determine the factors of extended TPB which could predict the home buyers’ behavioural intention to buy green residential. Then, this research also determines the relationships between those factors and behavioural intention to buy green residential which will become the most significant factors affecting the intention. Furthermore, the development of the home buyers’ behavioural intention of the green residential model is performed.
This chapter put forward the background of the study and whole content of the research approach including the research problem statement, research questions, aim of the research, research objectives, scope, significance, and research methodology. Moreover, this chapter also provides an outline of the thesis structure.

1.2 Background of Study

Green buildings are intended to be environmentally responsible, economically profitable, and healthy places to live and work at (Melchert, 2007). Green buildings are developed with the objectives to produce green residential and apartments or condominiums, green office buildings and others which practically reduce or eliminate negative environmental impacts and improve existing unsustainable design, construction and operation practices (Elias et al., 2013). Research by Nelson (2008) in Mohanty (2012) showed that green buildings have the largest potential market in the fast growing emerging economies in Asia, nevertheless in Indonesia, the green building movement is still at an early stage, at levels below four in the sustainable scale of one to ten as shown in Figure 1.1.

Figure 1.1: Leading real estate investment markets around the world (Mohanty, 2012)
The position of Indonesia as the fourth most populous country in the world has encouraged the country to be as one of the appropriate property locations in the world. Today, more than 50 percent of 240 million Indonesia people live in urban areas and in 2025 it is estimated that 68 percent of the population will live in this area (www.tempo.com). Residential development in urban areas would give the conception of environmental degradation and provide fundamental changes in the development that have respect for the environment. Because of the limited carrying capacity of the environment, green residential is substantial to pay attention to the needs of people and provide environmental, social, and economic benefits, in addition to protecting the earth and mankind (Elias et al., 2013). A green residential building is part of the green development and buildings; focusing on house resources which can be controlled from being polluted by the environment and stress on energy saving features (Martin et al., 2007).

In Indonesia, many residential areas and settlements have exceeded the carrying capacity of the earth, so the green residential development began to be offered to the public (Sugandhy & Hakim, 2007). Consequently, green residential is becoming a new trend nowadays. Most of the residential developers claimed that they are actively involved in green communities, by building certain green features and claiming that their development project is green (Adiwoso et al., 2013). The property developer realised that according to home buyers, green residential is still perceived as a new industry and the term has been widely used as a gimmick in Indonesia (Danusastro, 2012).

On the other side, Indonesian consumers have a different perspective on green residential. Most of them have consciousness and collective vision to save the environment, while on another side the cultural linkages among them are just for the best-buy when consuming the product (Adiwoso et al., 2013). Moreover, most of the consumers will buy something with a lot of consideration. Residential buyers have already realised that green residential is not only a trend in Indonesia, but has to be a lifestyle change (Arif et al., 2009). Yet, some of them are following the issue of the green or sustainable and have the motivation to change from the conventional practices towards environmental practices (Rahadini, 2010).
The primary critical elements for growing a green residential market are consumers, industries (both for-profit and non-profit organisations), and governments (Martin et al., 2007); as presented in Figure 1.2. Consumers are home buyers who are well versed in the attributes of green residential and receptive to the value-proposition. The industry includes developers, builders, sub-contractors, and other professionals familiar with the methods for building, marketing, and selling green residential. Nevertheless, the consumer element is critical to the success of any developing market (Martin et al., 2007). Therefore, this study is focusing on home buyers’ perspective toward green residential.

![Diagram of market elements](source: Martin et al., 2007)

**Figure 1.2**: The market of green residential (Source: Martin et al., 2007)

There were three studies representing the different results of house buyers as consumers towards the green residential property. Home buyers in New Zealand still insist that the most important factors in the house purchasing decision are the location of the property and price than the concept and feature of green residential itself (Eves & Kippes, 2010). A recent study in Malaysia resulted that the house buyer perspectives towards green residential buildings are still vague and lack proper understanding (Elias et al., 2013). Overall, about 67 percent of respondents were not aware of green residential and 23 percent acknowledged the green residential concept but with a vague understanding. In Hong Kong, a research by Jayantha (2013) showed that people were willing to pay more for green residential buildings recognised by the Hong Kong Building Environmental Assessment Method (HK-BEAM) and Hong Kong Green Building Council (HK-GBC).
These different findings showed that consumers in each country have
different awareness and perspectives related to the residential green building concept
that could influence their purchasing behaviour. Chan and Lau (2000) suggested that
a good start to understand the environmental movement from a particular country is
to examine how consumers in the country consider the environmental problems and
green issues are applied in the consumer behaviour. Consumer behaviour studies
towards green products in Indonesia have been carried out, as listed in Table 1.1, in
organic food, green cosmetics, and other green non-food products. According to this
table and from the best knowledge of the author, there is no study of the home
buyers’ behavioural intention on green residential in Indonesia.

Table 1.1: Evidence of Indonesian Consumer of Green Product

<table>
<thead>
<tr>
<th>No</th>
<th>Author</th>
<th>Area/Variables</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Herry et. al. (2006)</td>
<td>Society perception of green products (man and woman-adult) in Padang. Variables: demography, social, psychology, cultural</td>
<td>The group of society that had high concerns to green product was housewife, the middle economy class and has up to 40 years old. Most of respondents had motivation to choose green product and had enough good perception on that. In social factor, the sureness of society on green product was very high. Cultural factors supported society to care on the green products.</td>
</tr>
<tr>
<td>2</td>
<td>Suprapto, B and Wijaya, T. (2012)</td>
<td>Intention of Buying Organic Food (mother who have children) in Yogyakarta. Variables: healthy life style, attitude toward organic food, buying intention of organic food</td>
<td>First, the model is fit to empirical data in the field to shows the effect of healthy consumption life style and attitude toward organic food toward buying intention of organic food. Second, attitude toward organic food has significant effect toward buying intention of organic food. Third, healthy consumption life style has significant effect toward organic food.</td>
</tr>
<tr>
<td>3</td>
<td>Junaedi (2008)</td>
<td>Influence Gender as a Moderating in Development Model of Green Consumer Behaviour In Indonesia (organic food) Variables: values orientation (individualism and collectivism), premium price, environment consciousness, ecological knowledge, ecological affect, green purchase intention, purchase behaviour, and gender as moderating</td>
<td>This study tested the influence of values orientation on environmental consciousness; also explained the effect of ecological knowledge, ecological affect, premium price and environment consciousness on green purchase intention. The role of gender as moderating variables on the causal model development that can predict the green consumer behaviour on organic food as green product.</td>
</tr>
<tr>
<td>No</td>
<td>Author</td>
<td>Area/Variables</td>
<td>Result</td>
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<tr>
<td>4</td>
<td>Miranti (2012)</td>
<td>Influence of gender towards consumers’ green purchasing behaviour of university student in Jakarta. Variables: environmental attitude, environmental concern, perceived seriousness of environmental problems, perceived environmental responsibility, peer influence, self-identity, green purchase behaviour</td>
<td>Female consumer showed a more readily-favorable cognition, emotion, and behaviour in environmental protection than in male consumers, yet in terms of peer influence showed that male consumers have higher means.</td>
</tr>
<tr>
<td>5</td>
<td>Ardianti et al.</td>
<td>Consumer behaviour of green cosmetic product in Bogor Variables: Attitude toward behaviour, subjective norm, perceived behavioural control, behavioural intention</td>
<td>The results showed that consumers age, education, income, eco literacy to be significant factor in predicting consumer willingness to pay green cosmetics. This study using Theory of Planned Behaviour (TPB) to examine the relationships between consumer’s AtTB, SN, PBC and green cosmetic buying intention. The all TPB factors correlate positively with intention except PBC that has negative correlation.</td>
</tr>
<tr>
<td>6</td>
<td>Weni (2011)</td>
<td>Green product customer profile and their motives to purchase green products in Purwokerto. Variables: environment consciousness, customer involvement with environmental issues, and willingness to pay at the premium prices on customer’s intention to buy green product.</td>
<td>The result shows that consumers were becoming more concerned of their consumption and the impact on the environment, especially for their health. The results from PLS analysis indicate that environment consciousness, customer involvement with environmental issues and willingness to pay at the premium prices has a significant relationship on customer’s intention to buy green product.</td>
</tr>
<tr>
<td>7</td>
<td>Sudiyanti (2009)</td>
<td>Predicting Women Purchase Intention For Green Food Products in Indonesia Variables: environmental knowledge, attitude towards green food products, subjective norm, perceives behavioural control, perceived difficulty, and green purchase intention</td>
<td>This study reveals further evidence of consistency between Attitude, Subjective Norm, Perceived Behavioural Control and Perceived Difficulty as presented in Theory of Planned Behaviour. Despite the supporting evidence for the original Theory of Planned Behaviour, Environmental Knowledge, additionally, has been found to be the immediate predictor of Purchase Intention. It also has been demonstrated that among the predictors, Subjective Norm was found to be the most considerably factor in predicting purchase intention.</td>
</tr>
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</table>
1.3 Research Problem Statement

As discussed in the previous section, consumer and developer have interrelated elements in the green residential market. In Indonesia, many residential developers are aware of saving the environment so they strive to develop the concept of green residential in their housing development. For instance, there was an award for developers who are serious and committed to the using and building of the green residential property, namely Green Property Award held by one of the property magazines. This award has been established since 2009 and 48 residential area development received it from 2009-2013. Green residential development areas judged on eight criteria referring to Greenship rating system of the green home criteria. However, there were no residential area developments awarded for all of the criteria. On the other hand, there were also many developers who have not actually implemented the green residential concept but allegedly committed to earn higher profits from sales and not fully implementing the concept of green residential (Tanuwidjaja, 2010). This is evidenced by the data from residential property in one of the housing list websites in Indonesia showing that from almost 1000 of residential projects in Java and Bali more than 20 percent used green as a name of their residential developments and 40 percent used green as an attraction in their promotions (www.perumahanmu.com).

Consumers, basically have the awareness and knowledge to protect the environment. As showed by empirical studies in Table 1, consumers’ knowledge, awareness, lifestyle and motivation of the environment affects consumer behaviour when deciding to purchase green products such as organic food, as green products have more advantages than the conventional products, which is healthy. Likewise, green residential is certainly more favourable than the conventional ones by the residents. Green residential has many benefits for the consumer in the economy (lower costs in long-term, short-term savings, lower health care costs and higher resale value), better health and well-being (better family health, easier maintenance, and better indoor air quality) (McGraw-Hill, 2007).
Based on the Leadership in Energy and Environmental Design (LEED) certification, green homes could potentially contribute up to 30 until 60 percent energy reductions; cut energy bills by 20 per cent annually; be built similar or even less than conventional (only 2.4 per cent) and researchers found that on average, new green homes are sold for 30 percent more than conventional homes (USGBC, 2014).

Consequently, it can be addressed that residential developers have the effort to meet the consumer demand in order to save the environment by being ready to build the green residential. Hence, the gap that occurs on the consumer side is to what extent consumer awareness and knowledge about the benefits of green can affect their behavioural intention to purchase the green residential that are beneficially in social, environment, and economic; while the developers have not fully implemented the green residential specification in accordance with the green home criteria in Greenship. Therefore, it is highly important to study the appropriate consumer behaviour of green residential in Indonesia with the Greenship criteria, so developers can market their products more effectively to consumers and also succeed in the green residential development. Indeed, as suggested by Peattie (2010) the consumer has been the central character in the development of green marketing, as business attempts to understand and respond to the external pressures to improve their environmental performance. The enhancement of consumers’ environmental awareness is substantial since they could influence the environment with their positive purchasing behaviour (Ishaswini, 2011).

In addition, Darmawan (2013) suggested that to reinforce the examination of problems statement ought to incorporate information or suppositions from some other individuals identified with the topics to be contemplated, namely the preliminary investigation. However, there were lacks of studies which have examined the consumers’ behavioural intention and behaviour factors influencing such on green residential buying in Indonesia. Therefore, to support the importance of research on the consumer buying behavioural intention of green residential, the preliminary investigation has been carried out by several experts and professionals in the field of property and marketing, as presented in Table 1.2.
### Table 1.2: Result of Preliminary Investigation

<table>
<thead>
<tr>
<th>Name/Initial</th>
<th>Institution/ Organization</th>
<th>Investigation Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU (Senior Lecturer)</td>
<td>Local Institution, Surabaya</td>
<td>The research of consumer behaviour to purchase of green residential is good issue, because there were limited researches conducted in this topic. In fact, property developer in Indonesia used green as term of attraction to promote their product. Consumers’ knowledge of green residential is residential with lots of trees and spacious garden areas; in Indonesia it’s called ‘greening’. Therefore, need for understand their knowledge to could know their behavioural intention, and should collect data from prospective home buyers such in exhibition.</td>
</tr>
<tr>
<td>MIS (Professor)</td>
<td>Local Institution, Malang</td>
<td>Critical issue from marketing field. Green residential understood by residents is housing with large green areas, lots of trees, and a playground area for children, close to public facilities (school, public market) and can be easily accessed by public transport. Beside house selling price, buyers will be considering the above criteria when purchase a home. Moreover, concern for the environment has become a consumer lifestyle.</td>
</tr>
<tr>
<td>US (Professor)</td>
<td>Local Institution, Bogor</td>
<td>Interesting topic for study. Start thinking what theory can be the basis of research. First: The main focus should be thinking of the main variables studied (dependent variable) is a behavioural intention. The approach is a theory which would be used. Buying intention was included in the theory of the consumer decision behaviour. Know what the definition of behavioural intention is and how to measure it. Then look for the independent variables, such as individual consumer factors: motivation, personality, self-concept, and the consumer environment (demographics, age, education and purchasing power).</td>
</tr>
<tr>
<td>RAS</td>
<td>Developer, Malang</td>
<td>Knowing the intentions and profile of consumers can help developers determine strategy in marketing our products. This study can determine what background of the prospective home buyer's decision to purchase green home.</td>
</tr>
<tr>
<td>AS</td>
<td>Developer, Surabaya</td>
<td>So far buyers buying a house in green residential development that supported with large gardens and plenty of trees, wide roads, and facilities are available for them to socialize. So, this research could contribute to the developers by knowing factors that influence consumer intent to purchase.</td>
</tr>
<tr>
<td>CE (Professor)</td>
<td>International Institution, Australia</td>
<td>First thing to conduct in this study is by know the consumer awareness, then their behaviour. Since Indonesia just a few years adopted the green building concept.</td>
</tr>
</tbody>
</table>
According to the preliminary investigation in Table 1.2, it can be concluded that research in consumers’ buying behavioural intention of green residential is important to determine the consumer intention of buying associated with their knowledge, awareness and concerns toward environmental and green residential. From the developer's opinion, the knowledge of the behavioural intention of home buyers' would contribute to the determination of their marketing promotion and success of green residential development in Indonesia. The pro-environmental behaviour has become a lifestyle for Indonesian consumers. Moreover, they were becoming more concerned with the consumption and impact of their behaviour on the environment (Suprapto & Wijaya, 2012; Weni, 2011; Junaedi, 2008).

Consequently, there has been lack of research that focuses on the home buyers’ behavioural intention of green residential and many studies have been conducted relating to the green or sustainable building in Indonesia. Among other things, the studies relate to the concept of green building housing assessment (Danusastro, 2010), energy policy strategy (Mujiyanto & Tiess, 2013), energy reduction in green building (Sangkertadi, 2010), green cities (Endarwati, 2012), and residential energy consumption (Sukarno et al., 2012).

Indeed, consumer behaviour has been an important topic in property market research. In the micro level of the real estate market research, consumer behaviour focuses on human behaviour and the reasons behind it (Gibler & Nelson, 1998). In addition, consumer behaviour is the study of individuals, groups, or organisations in selecting, purchasing, using, and disposing of goods and services to satisfy needs and desires (Gibler & Nelson, 1998). The concept of consumer behaviour in real estate was drawn from the psychology and sociology as discovered in many works of literature (Gibler & Nelson, 1998; Koklic & Vida, 2009). The theory of attitude in social psychology has been used as the base for consumer decision. Related to consumer decision, this activity is being made by the home buyer in a different range of fields such as health issues or financial elements (Henry, 2005).
Moreover, consumer when describing the behaviour uses a measure of how strong the intention is to perform the behaviour which is called the behavioural intention (Sheeran et al., 2002). Dodds et al. (1991) defined the purchasing intention as a possibility of the consumers in trying to purchase a product. Ajzen (2005) explained that the behaviour will be based on factors that involve considerations to perform or not to perform the behaviour; wherein the process, these considerations will form the intention to perform a behaviour. Therefore, this research needs to measure the consumer behavioural intention to buy green residential.

Nevertheless, there are many theories to predict the behavioural intention in consumer behaviour such as Theory of Buyer Behaviour, Theory of Reasoned Action, and Theory of Planned Behaviour (TPB) (Moital, 2007). However, the Theory of Planned Behaviour (TPB) is the applicable theory to determine the behavioural intention (Ajzen & Madden, 1986; Han et al., 2010), as presented in Figure 1.3. This theory explains that personal factors, social and behavioural information are capable of influencing beliefs, normative beliefs and the control belief that behaviour can be performed (Ajzen, 1991). Based on these beliefs, it will bring norms, and perceived behavioural control capabilities. Next, it will stimulate a person's intention to behave and choose to perform a particular behaviour if there is support from significant others in their lives.

Figure 1.3: Theory of Planned Behaviour (TPB) (Ajzen, 2005)
Ajzen (2002) stated that the explanatory power of the Theory of Planned Behaviour (TPB) has been proven in a wide range of individual behaviours. The extending of TPB by including critical variables in particular contexts could increase the predictive ability of TPB (Ajzen, 1991; Conner & Abraham, 2001). Additionally, Ajzen (1991) also suggested the application of TPB on different cultures from which the theory is formed, in this study, namely the Indonesian culture, because many theories of consumer behaviour are developed in America and other developed countries (Bagozzi et al., 2003; Ajzen, 2011). Thus, the need of consumer behaviour theories empirical validation is important in developing countries.

Based on the investigation of the professional opinion above, it is expected that this research can provide practical contribution by identifying home buyers’ behavioural intention when purchasing green residential and also make the green residential property in Indonesia successful. However, there were limited researches to predict the consumers’ purchase behavioural intention of green residential especially from previous researches where there were still inconsistencies in the results despite using the same theory. Therefore, a context of this study intends to determine factors influencing the prediction of home buyers’ purchase behavioural intention of green residential in Indonesia by using the extended of Theory of Planned Behaviour (TPB), so that it can produce the appropriate behavioural intention prediction models of the green residential consumers in Indonesia. Furthermore, in order to gauge the home buyers’ buying intention of green residential, it will be integrated with the criteria of Greenship rating system which are based on the climatic conditions of Indonesia.

1.4 Research Gap

The implementation of the TPB was conducted to identify the consumer purchasing behaviour of the sustainable home, even when the discoveries have a disagreement. In Malaysia, Tan (2013) conducted a research on the intention of home buyers to purchase a green and sustainable home.
This study applied the extended TPB and investigated that the social referents' opinion was not significantly related to the purchase intention. Yet other variables such as attitude towards the green housing, perceived behavioural control, and perceived self-identity positively influence the behavioural intentions to purchase such homes. Another previous study by Numraktrakul et al. (2013) in Thailand indicated that the subjective norm and perceived behavioural control most positively influence prospective buyers to purchase green house. In contrast, the attitude towards behaviour does not perform well in the prediction of green home purchase intention.

The ability of TPB relies on the researcher’s ability to accurately identify and measure all salient attributes considered by the consumer (Solomon et al., 2006). Clearly, many consumption situations are highly complex and influenced by a plethora of both conscious and sub-conscious factors rendering this optimistic premise. The model relies on the assumption that consumers undertake comprehensive cognitive processing prior to purchase behaviour, related only to the psychosocial approaches (Bagozzi et al., 2003). However, the study by Koklic and Vida (2009) on the in-house purchasing behaviour suggested that there were internal and external factors indirectly impacting house purchasing decision through the lifestyle and self-concept construct. Consequently, in order to close the gap of TPB ability in predicting behavioural intention of consumers’ to purchase green residential, other factors besides the TPB main factors should be considered.

Accordingly, consumers’ are the main element for the success of the green residential market. In order to fulfil their need, consumer as individuals have a diversity of factors that affect their behaviour, including in determining behavioural intention to buy green residential. In addition, evidence from previous studies showed that environmental knowledge, awareness, and concern level of the consumers are capable of forming their behavioural intention (Aman et al., 2012; Serena & Paladino, 2012), but even so, it does not also affect their behavioural intention to purchase green products (D’Souza et al., 2007; Chen & Chai, 2010). By the way, consumers are very contradictory when it comes to their purchasing behaviour.
On the other hand, people are aware and expressing concerns towards purchasing behaviour of green products, but refuse to change the behaviour to purchase a pro-environmental product (Kalafatis et al., 1999).

The behavioural intention researchers using the Theory of Planned Behaviour (TPB) or extended of TPB indicated the diversity of different outcomes on purchasing green or sustainable product. In addition, the results from previous research showed the inconsistency of the findings, not all of the variables in the TPB have a significant effect on the behavioural intention. Based on the empirical results of this review, there are some gaps of the researches that can be used as the theoretical foundation. The research gap is summarised in Table 1.3.

<table>
<thead>
<tr>
<th>Research Gap</th>
<th>Previous Research Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap 1</td>
<td>Numraktrakul et al. (2013) get the results that attitude is not an important role in predicting purchase intention of green house</td>
</tr>
<tr>
<td></td>
<td>Tan (2013) showed that environmental attitude toward eco-friendly homes is a behavioural intention significant predictor for inhabiting eco-friendly homes</td>
</tr>
<tr>
<td>Gap 2</td>
<td>Numraktrakul et al. (2013) found that subjective norm take an important role in predicting purchase intention of green house</td>
</tr>
<tr>
<td></td>
<td>Tan (2013) conclude that social referents is not significant predictor of behavioural intention for inhabiting eco-friendly homes</td>
</tr>
<tr>
<td>Gap 3</td>
<td>Botetzagias et al. (2014) found that perceived behavioural control is the most important predictor of recycling intention</td>
</tr>
<tr>
<td></td>
<td>Yazdanpanah and Forouzani (2015) showed that perceived behavioural control is not significant predictor of intention to purchase organic food</td>
</tr>
</tbody>
</table>

1.5 Research Questions

Related to the problem statement above, there are three problems developed as follows:

1. What are the factors influencing the home buyers’ behavioural intention of green residential?
2. What is the relationship between the behavioural intention factors of green residential and behavioural intention to buy green residential?
3. How to develop the home buyers’ behavioural intention model of green residential?

1.6 Research Aim

The aim of this study is to determine factors that influence the Indonesian home buyers’ behavioural intention of green residential and develop the prediction model of behavioural intention to buy green residential. This study provides recommendations that can be considered by the target audience of this research, namely the green residential market which are home buyers, developers and government in increasing their understanding of the behavioural intention in buying green residential. The recommendations are summarised from the relevant literature reviews and findings of this study.

1.7 Research Objectives

In order to achieve the research question and aims, this study addresses the following research objectives:

1. To determine the home buyers’ behavioural intention factors of green residential.
2. To determine the relationship between the home buyers’ behavioural intention factors and behavioural intention to buy green residential.
3. To develop the home buyers’ behavioural intention model of green residential.
1.8 Research Scope

A prospective homebuyer is a person who has the willingness to buy green residential. The prospective buyers will actively search out relevant information with a view to arrive at a definite decision regarding purchase (Iman, 2006). Moreover, the prospective home buyer will search information by attending property exhibition or visiting the developer marketing office. Therefore, the respondents of this study are prospective home buyers.

There are three types of landed residential in Indonesia which are the small house with maximum 36 m² floor area; the medium house with 36-70 m² floor area and big house floor area of more than 70 m² (Indonesia Central Bank, 2014). In addition, the prediction of the green residential behavioural intention refers to the Greenship criteria of a green home rating system.

This study will collect data by distributing questionnaires to the prospective home buyers’ in Jakarta and Surabaya. Jakarta is the capital city of Indonesia. The Jakarta government has already required developers to implement the green building concept referring to the Governor Regulation of Jakarta Capital Special Region Number 38 Year 2012 on Sustainable Building. Moreover, the data of green property award indicated that most of the property developers honoured with the awards are located in Jakarta and the surrounding areas. Therefore, it is important to collect the data from the prospective home buyers in Jakarta.

Surabaya is a capital city of the East Java Province. East Java is a province with an economic performance that exceeds the national economic growth in 2013 at 6.86% (Hasbullah, 2013) and the best property business development in Eastern Indonesia. Meanwhile Anityasari (2013) asserted that Surabaya has been the pioneer in bringing the concept of green city and eco-city. The municipal government has already successfully introduced the "green and clean" concepts so that the residences in the city of Surabaya are cleaner and cooler.
Surabaya city is synonymous with the "green" slogan which indicates that as an environmentally friendly city, among them, there is the term of a green city, green school, and so on. Thus, it could be important to know the perception of the Surabaya citizen towards green residential.

1.9 Significance of Research

The results of the study will contribute to the improving of the decision-making of home buyers’ behaviour in purchasing the green residential. It is also important for the knowledge of property marketing, developers to meet home buyers’ purchasing behaviour, and also the home buyers will have a better knowledge in the context of the purchasing behavioural intention of green residential and its influences.

1.9.1 Knowledge

Theoretically, this study is expected to be advantageous for the body of knowledge. First, it adds perspective to the study of science property market research and consumer behaviour, especially in Indonesia. Second, this study contributes the predicting behavioural intention model by the extended of TPB with the determining factors in the green residential purchasing.

1.9.2 Green Residential Market

The elements of the green residential market are the home buyers as the consumers, developers, and government.
Practically, this study will minimize the mismatch between developers and home buyers, particularly in Indonesian residential market. Furthermore, they could walk together for the success of green development in Indonesia.

Real estate developer could potentially use this information to know their consumers’ better and provide a higher standard of customer service by understanding completely what the home buyers want rather than focusing on only one side of the story (functional attributes). By understanding the amount of knowledge effects on the home buyers purchase behaviour, they can tweak their sales pitches to present those variables that are most important to the home buyers related with their behavioural intention of green residential.

In addition, they could understand how to improve their product and attract buyers’ to purchase green residential with a better understanding of the green residential concept and knowing on why and how people purchase green residential. Finally, developers can build the green residential suit set forth in Greenship rating system so they will not only use “green” as a gimmick. Furthermore, the government may collaborate with developers by providing the guidance or regulation for the success of the green residential development.

For the prospective home buyers, the findings of this study becoming the information and guidance for them to have a better understand on what the future buyers will be looking for when purchasing the green residential. In addition, home buyers as the investors who have capital gaining growth purposes may discover what the future homebuyer will be evaluating positively when making a decision on green residential purchasing.

Lastly, the home buyers who are struggling to find green residential property can use this information to better understand themselves as consumers. This can help them make better decisions and purchase more wisely (Blackwell et al., 2006).
1.10 Research Methodology Overview

Before identifying the problems, this study gathered local issues of green residential and empirical studies that occurred from green consumer behaviour as a background that provide the theoretical aspects. In order to address these issues, the aim and objectives were defined and followed with the scope and significance of this study as stated in the earlier subsection.

The methodology applied in this study is quantitative research approach that focuses on how to achieve the aim and objectives by conducting survey design with cross-sectional survey method and self-administrate questionnaire. The data analysis will be quantified by the descriptive and inferential analyses. This research methodology as presented in Figure 1.4 consists of five stages, namely, the literature review, develop the research proposal, determine factors of home buyers’ behavioural intention, model development and validation, including discussion, conclusion, recommendation and limitation. The following paragraphs will discuss each stage.

The first stage is literature review where issues and gap of green residential in Indonesia is defined and investigated. This stage will further investigate the theoretical background and particular factors of behavioural intention from theories on green purchasing behaviour by considering many factors that enhance prospective home buyers buying behavioural intention. The conceptual framework is defined in this stage. The second stage develops the research framework. The aim is to establish the research background, problem statement, research questions, research aim, objectives, scope and limitation, contribution, expected research findings, and research methodology.
The third stage determines factors of home buyers’ behavioural intention which are conducted by the data collection and analysis. The data collection includes sampling design and assesses the measurement of reliability and validity of questionnaires. Therefore, this study needs to conduct a pilot study. The data analysis aims to do green residential buyers profiling and determines the home buyers’ behavioural intention factors. Furthermore, this stage involves analysing the relationship between home buyers’ behavioural intention factors and behavioural intention to buy green residential.

The fourth stage is model development and validation. The home buyers’ behavioural intention model of green residential develops based on the result of the relationship analysis. The model validation measure the extent to which the model results are closer to the actual conditions. Therefore, the final model was validated by internal method (analyse the data from field survey of home buyers) and external validation method (expert validation through questionnaire). Finally, the fifth stage discusses the result from previous stage and gives a conclusion. Therefore, this study will provide input, implications and limitations, thus supporting other researchers to conduct this better study in future.
**RESEARCH METHODOLOGY FRAMEWORK**

<table>
<thead>
<tr>
<th>RESEARCH TASK</th>
<th>STAGE</th>
<th>AIM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review the relevant literature: issues and gap of green residential in Indonesia, green building, green residential, consumer behavior theories, green purchase behavior, factors of behavioural intention</td>
<td>STAGE 1 Literature Review</td>
<td>Establish the issue and gap in Indonesia, theoretical background, factors of behavioural intention, and conceptual framework</td>
</tr>
<tr>
<td>Develop the research framework</td>
<td>STAGE 2 Develop the research proposal</td>
<td>Establish research background, problem statement, research questions, aims, objectives, scope and limitation, contribution, expected research finding, and research methodology</td>
</tr>
<tr>
<td>Data Collection: Questionnaire survey was distributed to prospective home buyers</td>
<td>STAGE 3 Determine Factors of Home Buyers Behavioural Intention</td>
<td>Determine the home buyers’ behavioural intention factors</td>
</tr>
<tr>
<td>Data Analysis: Descriptive analysis and Inferential analysis (SEM-PLS)</td>
<td>STAGE 4 Model Development and Validation</td>
<td>Determine the relationship between home buyers’ behavioural intention factors and behavioural intention to buy green residential</td>
</tr>
<tr>
<td>Validation with internal method (analyze the data from field survey of home buyers’) and external method (expert validation through questionnaire)</td>
<td>STAGE 5 Discussion, Conclusions, Recommendation and Limitation</td>
<td>Develop the home buyers behavioural intention model of green residential</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establish the home buyers behavioural intention model of green residential through validation results</td>
</tr>
</tbody>
</table>

*Figure 1.4: Research Methodology Framework*
1.11 Thesis Chapter Layout

The organisations of the chapter outline for the research are described below:

1. Chapter 1: Introduction
   This chapter presents the reasons for conducting the research. It includes the background of the study, statements of the problem that provides the outlines gap in the literature, research questions, main aim of the study, and research objectives. This chapter also provides research scopes, significance of the research, research methodology overview, and chapter outline.

2. Chapter 2: Green Purchase Behaviours and Green Residential
   This chapter discusses the literature review significant to this research. This literature review describes the development and rating system of green residential in Indonesia, consumer green purchase, and Theory of Planned Behaviour (TPB). The original construct of TPB and other variables such as environmental knowledge, environmental concern, green awareness, self-image, culture value and lifestyles will also be reviewed and defined.

   Chapter 3 discusses the conceptual framework derived from the Theory of Planned Behaviour (TPB) and called as the extended TPB, including the factors of behavioural intention and linkages between these factors by presenting all of the hypotheses. This chapter also performs the operational definition and measurement of each behavioural intention factor.

4. Chapter 4: Research Methodology
   Chapter 4 discusses the methodology used for the overall research work including the data collection and analyses; starting by the research design and location, research population, sample and sampling including the response rate of this study. The validity and reliability tests of the instrument are conducted by the pilot study.
Chapter 5: Behavioural Intention Factors of Green Residential

This chapter presents the descriptive analysis as the result from the questionnaire survey method. The confirmatory factor analysis is also conducted as the measurement outer model for each factor of home buyers’ behavioural intention to achieve the first objective.

Chapter 6: Behavioural Intention Model of Green Residential

Chapter 6 discusses the analysis of behavioural intention hypotheses testing with the Structural Equation Model (SEM). Then, the model development prediction and validation of the home buyers’ behavioural intention prediction model is presented. Thus, the second and third objectives are completed.

Chapter 7: Conclusions and Recommendations

This chapter presents the summary of the research technique, research findings in line with the objective of the study, contribution of the study to the body of knowledge and green residential market, and also limitation and recommendations for future research.

1.12 Summary

This chapter presents the background of this study, problem statement and research gap, research question and objective, scope and limitation, the significance of the research, research methodology overview, and outlines of the chapter. The next chapter will review the green residential and green purchase behaviour including the theory that will be undertaken in this study.
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