

HOUSE BUYER'S ACCEPTANCE TO THE GREEN HOME CONCEPT

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Abstract : Being more knowledgeable about the negative impacts of massive exploitation and misuse of land and natural resources, and how they potentially endanger their life and home, today's housing consumers has become more conscious of nature and concerned with damages happening to it. The immense construction of conventional house which is aimed at fulfilling people's demand on residence in Malaysia is claimed to inevitably result in chronic damage to environment for it employs high number of labours and produces large amount of carbon dioxide into the air. Therefore, the Green Home concept is introduced to sort out the problems without reducing energy, air quality, space and natural resource. Nevertheless, the concept itself is still new for people in Malaysia and will take time and effort to understand and accept. This study is to reveal the level of people's understanding of this Green Home concept as well as its primary components and implementation procedures in Malaysian housing industry.

Keywords: Massive Exploitation, Natural Resource, Green Home

Introduction

For Malaysian government, housing aspect is a profound element, and for this reason, the aspect is highly prioritised in its agenda. This move is not a astonishing surprise since the

government is indeed responsible to provide sustainable housing to ensure the quality of present and future generations' life by protecting environment and residents' health (W. Alex , 2008).

To provide housing which protects environment and residents' health, the industry should apply the Green Home concept when constructing houses. The Green Home concept itself is the practice of designing or creating house structures by using processes (eg. design, construction, operation, maintenance, repair and building demolition), which takes the environment and the efficient use of resources into serious consideration (Mahmoud Itewi, September Issue).

Actually, the Green Home concept has been widely practiced in European countries. There, designers, developers, and architects have begun designing houses, which use less electricity and energy. Here, in Malaysia, unfortunately, the level of designers' and house buyers' awareness about enviromental issues is still low and it impedes the implementation of the Green Home concept in house construction. For the purpose of solving the problem, this study investigated and determined the level of house buyers' understanding about the Green Home concept.

Research objective

The objectives of this study are to :

1. Review the level of home buyers' understanding of the Greenhouse concept.
2. Review the level of home buyers' acceptance of the Greenhouse concept.

'The hypothesis of this study'

To figure out the level of house buyers' understanding and acceptance of the Greenhouse concept, several hypotheses have been formulated:

Hypothesis 1 :

Ho : 'There is no significant relationship between the level of house buyers' understanding of Green Home concept and their acceptance level of it.

H1 : 'There is significant relationship between the level of home buyers' understanding of Green Home concept and their acceptance level of the idea

Hypothesis 2 :

Ho : 'The level of house buyers' understanding of the Green Home concept has nothing to do with the level of their acceptance of the concept.

H1 : 'There is a correlation between the level of house buyers' understanding of the Green Home concept and the level of their acceptance of it.

Problem statement

Global warming issue is familiar for the people all over the world. Indeed, it has been debated by many experts across the country, but none of them has found a perfect solution for the worldwide problem. Global warming is a phenomenon of global temperature rising over time as a result of the greenhouse effect

caused by the production of harmful gases, such as carbon dioxide (CO₂), methane (CH₄), *dinitrooksida* (N₂O), and CFC. Under the sun's heat, the gases release up the air and are trapped in the earth's atmosphere.

Global warming has occurred since the last 100 years. According to Seri Intan Othman, Berita Harian newspaper on February 27, 2014, an average global temperature has risen 0.6 degrees Celsius and it potentially increases from 1.5 degrees Celsius to 5.8 degrees Celsius by 2050. The rising temperature will indirectly cause polar ice melted and sea level increased dramatically.

Because of the global warming issue, the United States and Russia have been hit by drought as the Arctic Ocean ice hit a minimum record in September 2013. In the last few decades, extreme heat wave and drought have been hitting the world more often (Straits Times) than before. Last year, it was reported that North polar regions had encountered the highest rise in temperature since 1800, and warming of the oceans there also increased 2 times faster than the rest of planet Earth.

The calculation made by the scientists also revealed that the Arctic has been warming to 2 times faster than other areas, and the thickness level of the sea ice has reached its thinnest. Similarly, Greenland, which was once filled ice and glaciers that made explorers difficult to move shipping lanes can now be easily circumvented because the its ice block is easy to break. Its mountains ranges are no longer fully covered by thick snow, on

the contrary, they are now only covered by a small portion of thin snow, which again, shows how serious this global warming is that it needs to be solved immediately.

Research Methodology

Methodology are rules employed in order to carry out an investigation. There are diverse methods to get the intended data in a study like questionnaires, interview, observation, survey and other methods. The methods can be used by any researchers who conduct a study by considering their research goal. This study, in particular, was collecting data to investigate the level of house buyers' understanding and acceptance of the Greenhouse concept.

Location study

The study was conducted in Kampar, Perak Darul Ridzuan. Perak is a state located in the northern part of Malaysia Peninsula, and covers an area of 21,035 square kilometers with a total population of 2,258,428 people in 2010. Kampar, on the other hand, has an area of 39,000 hectares with a population of 15,074 people, including 216 foreigners. Local Authority of Kampar District Council has 11 administrative divisions of Gopeng, Jeram, Kampar, Kopisan Baharu, Kota Baharu, Kuala Dipang, Lawan Kuda Baharu, Malim Nawar, float - Cloud, South Strabane, and Tronoh Mines. This study, however, focused only on the part of Kampar only (Department of Statistics, 2010).

Sampling Review

The population of people who are in administrative divisions of Kampar are 15.074 people, but only 140 respondents were taken as samples for this research study. The 140 respondents were made up of local Kampar potential home buyers.

Data analysis

The collected data were analyzed in terms of respondents' level of understanding of the home buying concept.

Table 1 : Frequency Analysis of House buyers' Understanding

| Level | Frequency (People) | Percent (%) |
|--------------------------|--------------------|-------------|
| Do not understand at all | 0 | 0 |
| Do not understand | 0 | 0 |
| Not sure | 3 | 2.10 |
| Understand | 104 | 74.30 |
| Deeply understand | 33 | 23.60 |
| Total | 140 | 100.00 |

This table describes the frequency analysis of the home buyers' understanding level of the Green Home concept. A total of 3 respondents (2.10 %) were not sure about the concept of the Green Home, while a total of 104 respondents (74.30 %) said that they understood the concept of the Green Home. The rest of them, 33 respondents (23.60 %) admitted that they deeply

understood the Green Home concept.

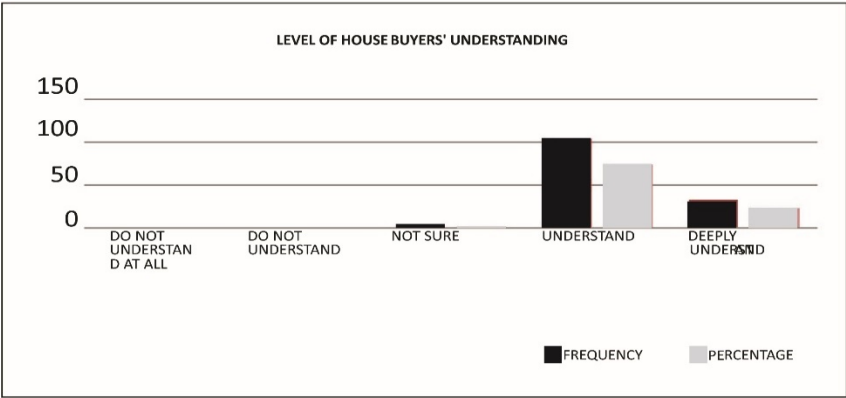


Figure 1 : Frequency Analysis of the House Buyers' Understanding Level following bar chart.

TABLE 2: Frequency Analysis of the House Buyers' Acceptance level of Green Home Concept

| Level | Frequency (People) | Percent (%) |
|--------------------|--------------------|-------------|
| Strongly disagree | 0 | 0 |
| Disagree | 0 | 0 |
| Hesitate/ Not sure | 3 | 2.10 |
| Agree | 68 | 48.60 |
| Strongly agree | 69 | 49.30 |
| Total | 140 | 100.00 |

The table above shows that a total of three respondents (10.2 %) answered they were not sure about the level of their acceptance of the Green Home concept. Similarly, the other 68 respondents

(48.60 %) also stated they accepted the Green Home concept in their favor, while the rest, 69 respondents (49.30 %), voted they strongly agreed with the concept.

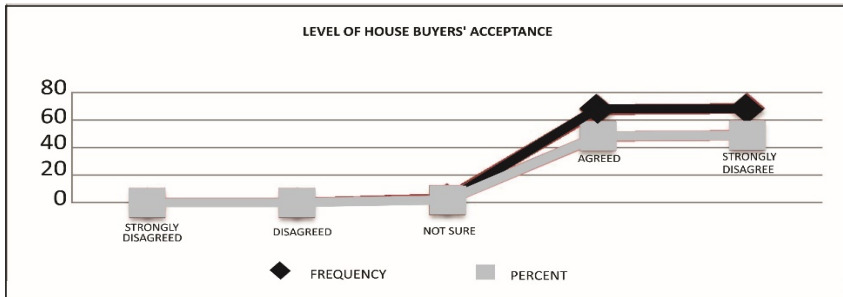


Figure 2 : Analysis Frequency of the House buyers' Acceptance Level of the Green Home concept according to the chart line

Hypothesis Testing

Pearson's Correlation Coefficient

This hypothesis testing is to study the relationship between independent and dependent variables. Pearson's correlation analysis was used to test this hypothesis: the data was analyzed by significant data. A p value < 0.05 was consider to represent a "correlation", while the value of $p < 0.005$ represented the opposite. The correlation test was conducted to investigate the relationship between the level of house buyers' understanding of the greenhouse concept and their acceptance level of the concept.

Table 2: Pearson's Correlation test The Level of House buyers' Understanding and Acceptance

| | | Home buyers' acceptance | P |
|-------------------------------|---|----------------------------|-------|
| The level of understanding | r | 0.443 | 0.000 |

Pearson correlation test shows a value of $r(138) = 0.443$, $p < 0.01$. This shows that there is a solid relationship between the level of home buyers' understanding and acceptance of the Green Home concept. With this finding, H_0 is rejected and H_1 is accepted.

TABLE 3 : Cross Tabulation between the Level of House Buyers' Understanding and Their Employment Status.

**LEVEL OF HOUSE BUYERS' UNDERSTANDING *
THE HOUSE BUYERS' WORK STATUS**

| | WORK STATUS | | | | | |
|---------------|------------------|---------------------|-------------------|---------|--------|-------|
| | CIVIL SERVANT | PRIVATE EMPLOYEE | SELF- EMPLOYED | STUDENT | OTHERS | |
| LEVEL | 0 | 1 | 1 | 0 | 1 | 3 |
| UNDERSTANDING | 0.0% | 3.2% | 2.9% | 0.0% | 4.2% | 2.1% |
| | 19 | 20 | 29 | 17 | 19 | 104 |
| | 76.0% | 64.5% | 82.9% | 68.0% | 79.2% | 74.3% |

| | | | | | | |
|-------|--------|--------|--------|--------|--------|--------|
| | 6 | 10 | 5 | 8 | 4 | 33 |
| | 24.0% | 32.3% | 14.3% | 32.0% | 16.7% | 23.6% |
| TOTAL | 25 | 31 | 35 | 25 | 24 | 140 |
| | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

The table above shows that the respondents from the self-employed status seemed to understand the Green Home concept better than the respondents from the other employment status. This is because the data shows that a total of 29 self-employed respondents (4.00) answered "deeply understand", while 5 respondents (5.00) voted "understand" and a respondent voted (3.00)"uncertain" when they were marking the questionnaires. The self-employed respondents possibly gave such answers since they already had experience in buying or adopting the Green Home concept at work or they had acquired the knowledge of the concept through conversation in a coffee shop with friends, family, or via newspapers, television and others, considering that majority of those self-employed respondents live in suburb.

The other work status, unfortunately, appeared to have a lower understanding: only 19 respondents (4.00) chose "understand", whereas 4 people (5.00) answered "very familiar", and only one respondent (3.00) voted "uncertain". This probably happened because they had never been exposed to the concept of Green Home.

Table 4 : Cross tabulation between the Level of House Buyers' Acceptance and Their Work Status of the Green Home concept.

House Buyers' Acceptance * Work Status

| | WORK STATUS | | | | | |
|--------------|---------------|------------------|---------------|---------|--------|--------|
| | CIVIL SERVICE | Company Employee | Self-Employed | Student | Others | |
| Acceptance | 0 | 0 | 2 | 0 | 1 | 3 |
| House buyers | 0.0% | 0.0% | 5.7% | 0.0% | 4.2% | 2.1% |
| | 4 | 21 | 12 | 13 | 18 | 68 |
| | 16.0% | 67.7% | 34.3% | 52.0% | 75.0% | 48.6% |
| | 21 | 10 | 21 | 12 | 5 | 69 |
| | 84.0% | 32.3% | 60.0% | 48.0% | 20.8% | 49.3% |
| Total | 25 | 31 | 35 | 25 | 24 | 140 |
| | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

The data displayed on the table above shows that respondents from self-employed work status have better comprehension of the Green Home concept than the other respondents do: the data shows that a total of 29 self-employed respondents (4.00) ticked "understand", whereas 5 respondents (5.00) voted "overwhelmingly understand" and the rest (3.00) ticked "uncertain" when they put answers on the questionnaire.

This finding are perhaps caused by the fact that most of the population in Kampar are those living in rural areas, where they could heard about the Greenhouse concept through conversations in a coffee shop with friends, family, or even from newspapers, television and other mediums. On the other hand, respondents who are self-employed may also be experienced in buying or adopting the concept of Greenhouse in their employment status.

Other job status seemed to have a lower understanding about the concept : only 19 respondents (4.00) chose "understand", while 4 people (5.00) chose "very familiar" and only a person (3.00) said "uncertain". It is probably provoked by the fact the other employment status is consist of people who had never been introduced to the concept of Green Home before.

Table 5 : Cross tabulation between the level of Home buyers' understanding and their education.

**The Level of Home Buyers' Understanding *
Their Level of Education.**

| | LEVEL OF EDUCATION | | | | | |
|---------------|--------------------|-------------|---------|--------------|--------------|------|
| | Elementary School | High School | DIPLOMA | FIRST DEGREE | MASTER/ Ph.D | |
| Level | 2 | 1 | 0 | 0 | 0 | 3 |
| Understanding | 7.4% | 2.1% | 0.0% | 0.0% | 0.0% | 2.1% |
| | 21 | 40 | 13 | 27 | 3 | 104 |

| | 77.8% | 85.1% | 52.0% | 75.0% | 60.0% | 74.3% |
|-------|------------|------------|-------------|------------|------------|-------------|
| | 4 14.8% | 6 12.8% | 12 48.0% | 9 25.0% | 2 40.0% | 33 23.6% |
| Total | 27 | 47 | 25 | 36 | 5 | 140 |
| | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

What table shows above is the fact that the respondents graduated from high schools seemed to understand the Green Home concept better compared to the respondents from other educational levels. The data also displays that a total of 40 self-employed respondents (4.00) chose "understand" while 6 respondents (5.00) voted "overwhelmingly understand" and only one respondent (3.00) voted "uncertain" when marking the questionnaire. They probably gained the information about the Green Home concept from having conversation with their friends, family and workmates. The Respondents with high school education level perhaps had experience in adopting or applying the Green Home concept when constructing their house.

Table 6 : Cross tabulation between the level of Home buyers' acceptance and Education

| Home Buyers' Acceptance * Their Education Level | Level of Education | | | | | |
|---|--------------------|--------------|--------------|--------------|--------------|---------------|
| | Elementary School | High School | DIPLOMA | FIRST DEGREE | MASTER /Ph.d | |
| ACCEPTANCE3 HOUSE BUYERS | 3 11.1% | 0 0.0% | 0 0.0% | 0 0.0% | 0 0.0% | 3 2.1% |
| | 12 44.4% | 25 53.2% | 11 44.0% | 18 50.0% | 2 40.0% | 68 48.6% |
| | 12 44.4% | 22 46.8% | 14 56.0% | 18 50.0% | 3 60.0% | 69 49.3% |
| Total | 27 100.0% | 47 100.0% | 25 100.0% | 36 100.0% | 5 100.0% | 140 100.0% |

As the table shows, respondents with secondary school education more understand the Green Home concept rather than the respondents possessing other educational levels. This finding was drawn from the data above, which shows that a total of 25 high school-educated respondents (4.00) marked "understand" and 22 respondents (5.00) voted "overwhelmingly understand" as they

filled out the questionnaire. The high school education respondents probably acquired their understanding from buying, trying or adopting the Green Home concept in their daily activities.

Recommendations and Conclusion

Building awareness and understanding of the Green Home concept among people apparently requires the involvement of civil society and parties belonged to the housing industry, such as ministries, local authorities, developers and house buyers themselves. The application of Green Home practices perhaps can bring significant impact on the development and implementation of the Green Home concept.

To rise the public demand for a house built on the Green Home concept, the government, especially the Ministry of Housing and Local Government should work with any non-government agency to spread awareness of the Green Home concept to house seekers in Malaysia. They should publish more articles and research finding discussing the Green Home concept and its benefits, and multiply newspapers and social media to facilitate people to study them.

In addition, the home buyers themselves have to realize that it is their responsibility to conserve and preserve the world's environment not matter how. To realize the goal, in my opinion, the government needs to make a team or division specialized in controlling the price of house with Green Home concept and

building materials which are used to build house applying the Green Home concept so that the environmentally friendly house will stay affordable for people in Malaysia.

Finally, this study found that the level of house buyers' knowledge and acceptance of house in Kampar District lies at medium high. However, even with the good fact, there are still a lot of work to do before this Green Home concept is fully understood and accepted by public in Malaysia.

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