

# BUYER'S PERCEPTION ON GREEN RESIDENTIAL BUILDING: A STUDY IN SARAWAK

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**ABSTRACT:** *The objectives to be highlighted in this study are: to investigate the buyer's perception on green building for residential types of project which focusing in Sarawak, also to identify the level of knowledge and awareness of the respondents towards the concept of green building concept and also to examine the buyer's perception on movement of green building in their state itself. A sample of respondents set by 200 respondents, which the location of the Sarawak itself limited to Sibul, Miri, and Kuching districts only. The quantitative methodology has been chosen to gather the best possible data to identify the objective set for this research. . The findings of the study will be useful for giving a new idea in green residential concept to Sarawak's potential buyers and what it's their expectation towards green building concept to be implemented in residential project. Therefore, the results may help the construction's players on the readiness of the potential buyers in accepting this concept for their future property.*

**Keywords:** green residential, green concept, green benefit, potential buyers.

## 1. INTRODUCTION

Worldwide concern on the ecological quality and managing the world assets for the future era have understood that seeking after social improvement and monetary advance dependably accompany value, the long haul corruption and conceivably irreversible harm to the earth [2,3,5]. Amongst the best practices for feasible advancement and natural administration while seeking after monetary and social improvement is by the adaption of green innovation execution and make it economical. The appropriation of maintainable development and green structures has turned into a vital issue in Malaysia as of late and has been rightfully highlighted under the Malaysian Construction Industry Master Plan (2005 – 2015) [1].

The high demand for green design drive greater than ever as world awareness for the environment and sustainability. In many cases, green structures may provide a lower lifetime cost alternative to conventional building methods [1]. In Malaysia, a rating system for green design called Green Building Index (GBI) has existed. The GBI Residential Rating tool evaluates the sustainable aspects of residential buildings. This includes linked houses, apartments, condominiums, townhouses, semi-detached and bungalows. This tool places more emphasis on sustainable site planning & management, followed by energy efficiency. This serves to encourage developers and homeowners to consider the environmental quality of homes and their inhabitants through better site selection, provisions of public transport access, increased community services and connectivity, as well as improved infrastructure. Such achievement will help reduce the negative impact to the environment and create a better and safer place for residents and the community as a whole.

In order to promote and to flourish the construction industry with green building technologies; GBI is the first green building program where the environmental rating system becomes one of its standards and also the first comprehensive system in Malaysia to evaluate the environmental design and building performance [2,4,10]. Since the agenda is novel, it has created a lot of misperceptions and problems, not only for potential buyers, but also for the construction industry players such as developers, architects, engineers, town planners, and contractors. According to the Ministry of Energy, Green

Technology and Water [2,6], the construction industry faces troubles in order to extend the green building technologies in Malaysia as follows: a very low demand towards green's products and services as well as expensive costs; a very tough challenge to get cooperation from construction industry players in the application of the green technology; a lack of local expertise in green technology; a lack of R&D activities, transfer technology and knowledge in green technology fields, and a lack of awareness, understanding and acceptance of green technology among the construction industry players and citizen as the whole.

Due to the various concept applied into a green building, it brings the benefit of economic savings which are achieved primarily through lower operations and maintenance costs, specifically lower utility costs for electricity, water and waste disposal. The most important thing is that the development of green buildings plays an important role in the effort of minimizing the environmental impact [7].

## 2. RESEARCH BACKGROUND

As a developing country, Malaysia also adopts the green programs (green buildings and green technologies) [9]. The government has implemented the green programs as stated in the government agendas since 2010 [2]. Several implementations included are the improvement of living standards, promoting sustainable development system, preserving and conserving the environment, and green supply [9]. The entire agenda is based on the implementation of Agenda 21, Sustainable Development Program United Nations (UN) [2,9]. Throughout the agenda, Malaysia was interested to follow the footsteps of developed countries in developing foresight in-line with the consensus with other countries as included in the World Summit on Sustainable Development (WSSD) on the planning and direction of green development in the new millennium.

Malaysia has made great strides in meeting the requirements of its citizens in relation to housing. Under various five-year plans, the government has implemented numerous housing programs, in both rural and urban areas, with the aim of making Malaysia a 'home-owning society'. The public sector has concentrated mainly on low-cost housing programs, while the private sector has focused on medium- and high-cost

housing programs. The house-building industry in Malaysia is in line with the goals of the Habitat Agenda as well as the principles of Agenda 21 [9]. This is the blueprint for sustainable development in the 21st Century, adopted by 179 nations, including Malaysia, at the 1992 summit in Rio de Janeiro [8].

One of the main elements in sustainable development is to provide shelter for all [1]. The government has shown a keen interest in providing housing, in particular for low-income groups. However, the government could not provide sufficient housing to meet sustainability and green concept where all over the world starting to implement this concept in their country. Green Buildings are very slow growing in Sarawak. Unfortunately, the implementation of the green concept is more used in peninsular areas such as Kuala Lumpur. There are very least landed residential houses which are implemented with the green concept and been certified by Green Building Index (GBI – Residential New Construction, 2014). All these situations contribute to a study into the implementation of the green concept in a residential project, particularly in Sarawak.

The objectives to be highlighted in this study are: to investigate the buyer's perception on green building for residential types of project which focusing in Sarawak, also to identify the level of knowledge and awareness of the respondents towards the concept of green building concept and also to examine the buyer's perception on movement of green building in their state itself.

Presently, the demand for green residential is very low because buyers hesitate to pay 30% more costs for a green residential than a conventional house. Where this statement, applicable to Peninsular Malaysia, to extend this conceptual study, this research develops to study towards Sarawak's buyer's perception. The data collections for the study it's through a structured questionnaire which send to 200 respondents which are consists of those who have a good profession because the result from this group will affect the level of accuracy of the data collection. These study it's limited to Sibul, Miri and Kuching areas only. The findings of the study will be useful for giving a new idea in green residential concept to Sarawak's potential buyers and what it's their expectation towards green building concept to be implemented in the residential project. Therefore, the results may help the construction's players on the readiness of the potential buyers in accepting this concept for their future property.

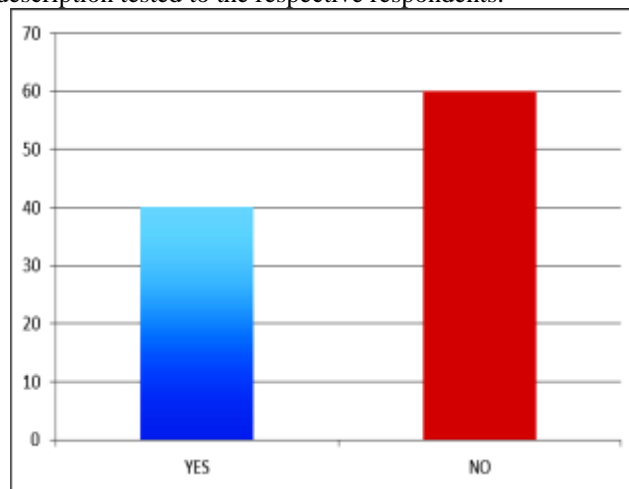
### 3. RESULTS AND DISCUSSION

Both primary and secondary source has been used as a research methodology in order to achieve clear picture and understanding of the results. The primary source consists a set of questionnaire survey while the secondary source

obtains from the desk stop study. Literature review resources obtained from the form of the journal, research paper and articles; relevant references books, newspaper and electronic data – also known as the desktop study. Most of the time in order to conduct this research it's to do the desktop study in order to obtain the sources in order to support the literature review for this research

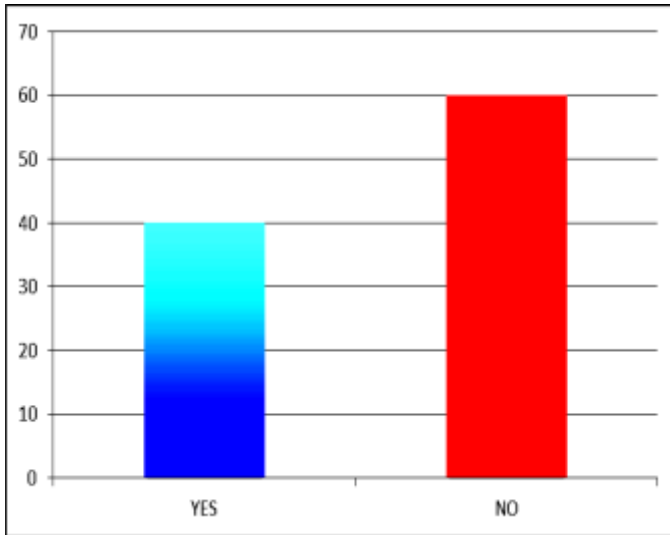
The questionnaire has been designed to achieve the finding of results for the objectives such as to capture the potential buyers' perception towards implementing green building concept in Malaysia, particularly in Sarawak. However, this research has its limitation where the research area coverage only at Sibul, Kuching and Miri only. The rationales by choosing these three areas are because of the functioning of each areas contributing to the movement of Sarawak's economies. About 200 numbers of respondents responded to the questionnaire. The data collections for the study it's through a structured questionnaire which send to 200 respondents which are consists of those who have a good profession because the result from this group will affect the level of accuracy of the data collection.

The structured questionnaire scale on answer limited to 'yes' and 'no' answer expecting from the respondents. Furthermore, the analyzing of the data it's based on the frequency or by percentage analysis. The highest percentage indicates the higher indicator or momentum to the point of description tested to the respective respondents.



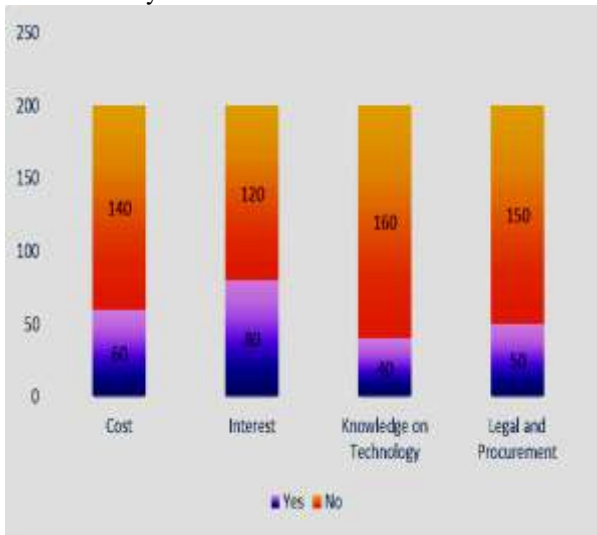
**Figure 1: Percentage of respondents knows the concept of Green Building.**

Figure 1 stating on the results of the percentage of respondents knows the concept of Green Building. 60% said 'No' and 40% said 'Yes' to this statement. It's clearly shown that the potential buyers or public itself do not really know what it's the green building concept it's all about.



**Figure 2: Percentage of respondents knows the implementation of Green Building concept in Malaysia.**

By referring to the Figure 2 stating the percentage of respondents knows the implementation of green building concept in Malaysia. 60% said ‘No’ and 40% said ‘Yes’ on this statement. It is clearly shown that the potential buyers or public itself do not aware of the implementation of this concept in Malaysia, which most of the project located in Peninsular Malaysia.

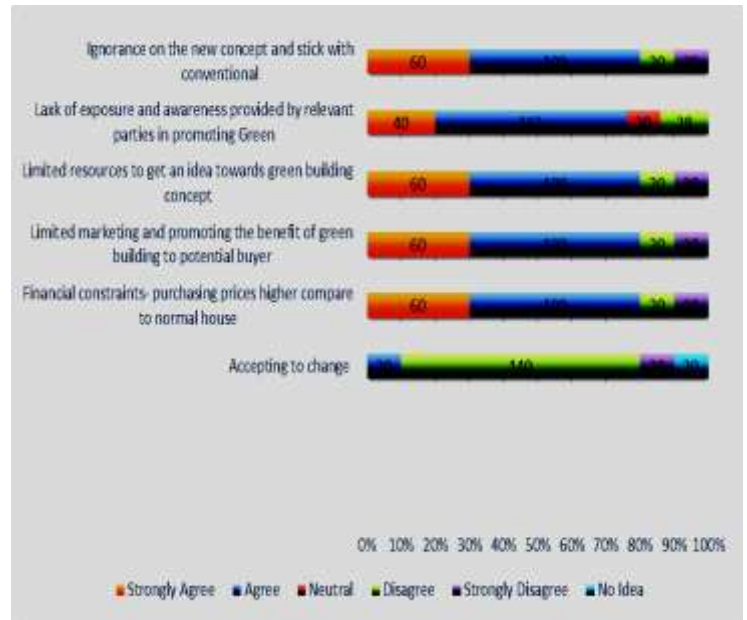


**Figure 3: Respondents insight in general in adapting green building concept.**

Figure 3 discussing on the respondent's insight in adapting green building concept based on four factors – cost, interest, knowledge on technology and legal and procurement. The first factor most of respondents 140 agree that green building project requires more cost to purchase compared to the conventional or normal project. 120 agrees that they do not really interested in green building concept due to certain reason. 160 saying

that they agree and admit that they do not really kin on new technology practices in a market especially for building

construction. 150 agrees that they do not have a knowledge and not kin in green building types of building legal and procurement matters.



**Figure 4: Respondent’s constraint factors to adapting green building concept.**

By referring to Figure 4, discussing on the constraint factors lead to the respondents or buyers to purchase green building project. 100 of them agrees on the ignorance on the new concept and they do not really update their knowledge towards new technology currently practices in a market. 112 respondents agree that lack of exposure and awareness provided by relevant parties in promoting green building concept especially on the benefits this concept may offer leads them to stick with the conventional types of residential. 100 agrees that limited resources get an idea, information and knowledge on this concept in their area. 100 respondents agree that they are facing financial constraint when it comes to purchasing green building types of the residential house as they are having perception where green building cost them slightly higher compare to normal residential types of project. Most of the respondents agree that with 140 saying they are refusing to change. They want to stick with the conventional types of residential due to they are familiar and kin on this concept.

**4. CONCLUSIONS**

Several recommendations that can speed up to overcome the stated issues; providing knowledge and training like organizing a seminar, talk or workshop and conferences to educating them and offering to the public and potential buyer for green principles on the concept and the benefits can be generated from implementing this concept in their project. Actions must be initiated to enable this concept to be applied efficiently in future construction projects. Provide as assistant to stakeholders, contractors and consultants in incorporating the sustainable issues at the project conceptual stage and planning stage. The even green concept it’s a slightly higher

investment at initial stages, but then, it is still a good investment to be considered for long-term and by implementing this concept its bring different character and interpretation from the conventional project.

Finally, stakeholders' actions are influenced by the market situation and demand from the buyer. To increase buyers demand green project, a little bit of pushing factors must be acting upon to the housing developers and also contractors to improve the specification of their houses which include certain green buildings elements to attract buyers. The modern and modest design must play role in the design of the building so that can attract that potential buyer to consider on this green project.

Based on the survey as well, the first perception of the design always affecting and give a higher percentage impact towards the decision to buy or not to buy that property.

In summary, more efforts are necessary to enhance the level of environmental awareness and civic consciousness among the Sarawak's people to build sustainable and greener project in the future. These are the point that should put into an account to make them ready to implement this concept. It's should start from the most important people in that particular state so that this concept can be successfully implementing in their area.

#### 5. ACKNOWLEDGEMENT

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