Owner's motivation to construct the green buildings in Jakarta, Indonesia

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Abstract. Green building concept is a concept that design to reduce the effects of global warming. Research needed to know what things that motivate the owner to increase the number of green buildings. The study was conducted by interviewing building owners in Jakarta, Indonesia that had certified as green buildings. The results showed that although the costs required to build a green building was higher than conventional buildings, the owner got a higher sale value of the building and saved the building's maintenance costs. The level of education and understanding of the owner about the concept of green building was still lacking but did not affect the decision to build green buildings.

Keywords: green building, motivation, owner

1. Introduction

Global warming is an issue that has been a big challenge for every country in the world. The construction sector triggers global warming because many constructions are occurring on a big scale nowadays and affecting the environment. Based on Green Building Council, green building is an effort to be able to produce buildings by applying environmentally friendly aspects and processes with efficient use of resources during the building life cycle, start from planning, construction, operational maintenance, renovation, and even building demolition. However, this concept needs to be followed by many people and demanding public awareness to be able to protect the environment. The number of buildings that have certified green building or green building in Indonesia is still merest. Though buildings are a contributor to gas that triggers global warming, General Chairperson of the Green Building Council Indonesia (GBCI) [1] said that only 49 buildings had received green building certificates. Meanwhile, the other 69 buildings still in the initial stage, particularly design recognition, for later final assessment.

The project owner is the person who determines whether the green construction concept can apply in the construction process [2]. Despite the interest of project owners to build green buildings still low, and the implementation of the green concept still needs support from the government [3]. It is necessary to know what motivation causes the project owner to construct and own a green building. The results obtained can use to increase the desire of other building owners to build green buildings.

2. Previous Research

Green building is part of sustainable development, which is a process that awakens humans to improve their quality of life in supporting the earth [4]. Green buildings, according to the Green Building Council are buildings that pay attention to environmental aspects from the design stage to the
operational stage. These aspects include aspects of protecting, conserving, reducing the use of natural resources, maintaining the quality of the building and the air in it, and paying attention to the health of its inhabitants. The application of green building design and construction will reduce the accident rate in construction projects [5].

'Green' certified buildings need to meet several aspects of the assessment. In Indonesia, GBCI has a system called Greenship rating, which is a tool compiled by GBCI to determine whether a building can be declared eligible for green building certification or not. Greenship rating is a rating assessment system that divides into six aspects consisting of appropriate site development, energy efficiency, water conservation, material sources & cycle, indoor air quality, building environmental management. Each aspect consists of several ratings that contain credit, each of which has a specific value load and will be processed to determine the assessment. The implementation of green building rating has not become an obligation in Indonesia [6].

Several studies have found out the owner's motivation to build green buildings. Motivator defines as a specific catalyst designed to encourage people to be able to move in a certain direction. According to [7], there are three categories of motivation: environmental, economic, and social. [8] Reveal that several motivations influence the owner to build green buildings, internal motivations, and external motivations. Internal motivation includes a. Improve quality of life for users of green buildings [9], b. Attention to the environment [10,11], c. Enhanced owner's prestige [12, 13, 14]. External motivation: d. High market attractiveness to green building projects [15], e. Financial [14,16] and non-financial incentives [11,16] from the government.

[17] Said that internal owner motivations in Australia are due to the willingness of the project owners himself, and owners have a value that cares for the environment. While external motivations include incentives from the government as compensation for price increases due to green construction, the ease of obtaining a development permit from the government, and green buildings have high demand and value. Owner motivations will increase the owner's commitment to achieving project success in Australia [18]. This commitment is necessary, especially since the green concept is relatively new in the world of construction [19].

3. Research Method
The research had conducted qualitatively using open-ended interviews. Respondent was building owners with 5th green-certified building owners in Jakarta, Indonesia. The motivation variables that asked were the internal and external motivations. Internal motivations include 1). The project owner’s willingness. 2). A value that cares for the environment. The external motivations include 3). Incentives from the government as compensation for price increases due to green construction 4). Ease of obtaining development permits from the government, and 5). Green buildings have high demand and rental value.

4. Data Analysis
The results of the interview can summarize in the following points

• **Low operational costs (external motivation)**
  Green buildings will have lower operating costs of around 35% than ordinary buildings that do not have certification as green buildings. It is a strong reason why the owners want to build a green building.

• **The high value of building assets (external motivation)**
  Green building is a property whose building value always increases every year. When later it will be sold to other parties, its value will not go down yet it will remain stable or even increase. Because of that, the owners build green buildings, especially as a businessman, having high investment value is their primary goal. The asset value of a green building will always increase due to market demand for a building that is environmentally sustainable. When the green building’s demand is high, the value of buildings will increase, especially in the city of Jakarta, where the number of green buildings is still scant. The owner expects high profits gain when the building assets value is high.

• **Improve the quality of life (internal motivation)**

Every green building occupant will experience a better life because green building improves the air quality around the building, and it will have an impact on the health and productivity of its occupants. The owners expect they can sell it to consumers who are interested in a healthy lifestyle.

- **Awareness of climate change (internal)**
  The worsening climate change also triggers the motivation of the owners to build green buildings with the main objectives to reduce the detrimental impact on the environment.

- **Increase the reputation of the owner (internal motivation)**
  Being the owner of a green building is an advantage for the owner and increase reputation. Ownership of the green building will give advantage to the owner because consumers in Indonesia tend to trust more brands that have a good reputation, especially a good reputation in terms of protecting the environment.

Government incentive variables to motivate owners to build green buildings have not existed in Indonesia. The summary results of the interview can be seen more clearly in the image below.

**Figure 1.** Owner’s motivation for building green

5. **Discussion**

Increasing the number of green buildings is very important for environmental sustainability. Therefore, it is necessary to increase owner awareness and motivation. All owners have the same motivations that are green building lowers operating costs, followed by a higher probability of building assets. The dominant motivation for the owner to build green buildings is external motivations, especially the motive for obtaining economic benefits. The owner desires to take profit from lower operating costs and increased building assets. The internal owner's motivations are to get a better quality of life and care for the environment.

These findings are similar to research conducted in Australia, financial gain and environmental awareness are things that motivate the owner to build green buildings[17]. The differences motivation of owners in Australia versus Indonesia is the incentives and ease of regulation from the government variables. Whereas in Indonesia, there is no policy of provide the incentives. The implementation of green building development has not become an obligation[6].

The owner's motive to build green buildings in Jakarta, Indonesia is more dominated by economic motivation. The government, consultants, and project management can socialize the financial benefits and prestige that will be obtained by the owner in the early design stage. The government can also support by providing easy licensing, regulations, and incentives for green buildings.

6. **Conclusion**

The motivation of project owners to build green buildings was that green buildings lower operational costs, followed by the possibility of higher building assets. The level of education and understanding
of the owner about the concept of green building was still lacking but did not affect the decision to build a green building. The government should be active in support of the application of the concept of green building in Indonesia in terms of regulation, incentives, and socialization. Further research can do on a broader national scale. Research can also conduct to determine the obstacles faced by owners in building green buildings, find out the motivation of the developer because the developer also plays an initiator in the construction of green buildings.

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