The Awareness of Generation 'Y' on Green Building Development in Malaysia

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Abstract

Malaysian construction industry has undergone over 50 years of rapid industrialization and became an economic engine for the country. The industry contributes 5% to Gross Development Product and employs almost 9.3% of overall workforce. However, most of the development has been reported as unsustainableand requires specific sustainable approach to the construction industry. This situation urges the government and professional bodies in Malaysia to take proactive actions in promoting sustainability concept for better environmental and social protection. Nevertheless, creating new sustainable construction concept highly depends on the knowledge and involvement of participants within this industry especially generation 'Y'. This research aims to investigate the awareness of generation 'Y' on green building development in the Malaysian construction industry. In addition, this research also recommends means to improve the level of awareness on green building development among generation 'Y' in Malaysia. Data will be collected through questionnaire survey. The paper posits that it is essential to raise the awareness and educate generation 'Y' on green building development for continual improvement in the future.

Keywords: Awareness; Generation Y; Green Building; Construction Industry

1.0 Introduction

Construction industry has long been recognized as one of the most resource-hungry and least sustainable industries in the world. This industry has tremendous impact on environmentand causes some of the worst pollution. According to the U.S. Environmental Protection Agency, construction impacts last for decades and affect the lives of current and future generations. Buildings consume major global resources. Almost 50% of global energy isconsumed in buildings, while 50% of the water, 60% materials for buildings, 80% land loss to agriculture, 60% timber products, 90% hardwoods are all directly linked with building construction. Indirectly 50% of coral reefs destruction and 25% of rain forest destruction are all attributed to buildings and construction. Therefore, it is thought that one way to produce sustainable development is through green technology.

Following that situation, Malaysia is one of the countries whichare trying to execute green technology as a significant contribution to every development agenda for the future (Sim and Putuhena, 2015). Issues of sustainability and green construction have been duly highlighted in the Construction Industry Master Plan (2005 – 2015) as being of significant importance for the Malaysian construction industry. The Malaysian government is also committed to address sustainability issues and meeting its target and obligations in this regard. The creation and delivering of sustainable construction not only require action from all participants related with the constructionsector but awareness among public also will give an extra credit to increase the levels of support on that subject.

However, the main challenge to implement a new sustainable construction approach is the lack of public awareness and their participation in this approach. It was supported by Abidin (2009) that awareness, knowledge as well as understanding about green building are the drivers for the implementation of green building to success. It is vital to enhance public awareness especially generation 'Y' for better environmental protection, social well-being and economic prosperity in the future. Besides that, Samari et al. (2013) also pointed out that awareness of green building construction among the public may influence the demand for sustainable building. This means that the public plays an important role to drive the demand for green building development in Malaysia.

As such, for the purpose of writing this research, the author will concentrate more on the awareness of generation 'Y' on green building development in the Malaysia.

2.0 Literature Review

2.1 Overview on Green Building Development

According to the US Green Building Council (2003) defines 'Green Building' as: "To significantly reduce or eliminate the negative impact of buildings on the environment and on the building occupants. Green building is designed to save energy and resources, recycle materials, and minimize the emission of toxic substances throughout its life cycle (Tan, 2009). Meanwhile, according to the United States Environmental Protection Agency (2014), green or sustainable building refers to a structure that uses process that is environmentally responsible and resource-efficient throughout a building's life-cycle that started from its design, construction, operation, maintenance, renovation and demolition. In addition, green building also can be described as a building that is more energy and resource efficient,not releasing pollution into the air, soil and water, and is healthier for occupants than the standard building (Richardson &Lynes, 2007). It was supported by Retzlaff (2009) that green building is a type of development that seeks to increase the sustainability and efficiency of buildings and development. From all definition mentioned above, it can be summarized that green building is a building that focuses on the use of resources efficiently such as water, energy, air, soil and materials, which at the same time is designed to reduce its negative impacts on the environment while increasing its occupants' health during its life-cycle.

Parallel with Vision 2020 introduced by our former prime minister, Tun Mahathir Bin Mohamad, Malaysia needs to convert from a developing country to a developed country by 2020.This vision calls for full development not only in economic, but also in political, social, spiritually, psychological and cultural aspects. Thus, to achieve that vision, Malaysian construction industry requires specific assessment tool to enable Malaysia in becoming a leading nation in the 21st century.

2.2 Green Building Index (GBI)

In January 2009, Malaysian experts embarked on developing a localassessment tool in building level, which is called as Green Building Index (GBI). The objective of thedevelopment of GBI is to save energy, resources, recycle materials and harmonize with the Malaysia climate, traditions, culture and its environment as well as maintaining the capacity of the ecosystem at local and global levels (Tan, 2009). In addition, the Malaysian Government realizes that in the 21st century, renewable and sustainable energy as well as green technology will be the core of economic growth for all countries. This, in turn, minimizes degradation to the environment and promotes healthy and improved environment for all forms of life (Malaysia Productivity Corporation, 2010).

Green Building Index (GBI) contains six (6) key criteria, which are energy efficiency, indoor environmental quality, sustainable site planning and management, material and resources, water efficiency and innovation. Each building will be awarded with a GBI rating like Platinum, Gold, Silver or GBI Certified if its development has achieved all the criteria stated in that tool.The total points for all criteria is 100 and to achieve the points, a building company will comply with necessarypossessions so that the building will likely be more green environment-friendly (Bahaudin et al., 2013). Table 1 exemplifies the scores and ratings for GBI.

Table 1: GBI Scoring and Rating Award. Source: Green Building Index, http://www.greenbuildingindex.org

Criteria	**Total Score**	**Points**	**GBI Rating**
Energy efficiency	35	86 and above	Platinum
Indoor Environmental Quality	21	76 to 85	God
Sustainable Site Planning Management	16	66 to 75	Silver
Material and Resources	11	50 to 65	Certified
Water Efficiency	10		
Innovation	7		
Total	**100**		

By having this as parameter, it will provide an opportunity for industry players to design and construct green and sustainable buildings. This means that this tool indirectly can enhance and promote the green building

implementation among developer, design team, construction team as well as the public.

2.3 Generation 'Y'

Each generation has transformative effects on the economy growth, but the actions of generation Y, also known as the Millennial Generation will give special impact to our country. As mentioned by General Director of Special Affairs Department (JASA), DatukFuad Hassan in the programme'JomGenerasi-Y Stand as One'this generationrepresents a large number of population in Malaysia, thus they will be an important entity for the country's development. He also cited that we need to walk hand-in-hand with this generation because they are in the age of group that is heading for maturity and it is important for our national public institution.

Generally, generation Y consumers are groups of people who was born in the year of 1977 to 1994 (Bakewell& Mitchell, 2003; Broadbridge et al., 2007; Morton, 2002), though some researchers confined the group to those born in year 1977 to 1995 (Focsht et al., 2009). In the Malaysian context, generation Y can be described as those whose birth years fall between 1977 and 1997. Martin (2005) also cited that theytend to be self-reliant, independent and like to be allowed the freedom and flexibility to complete tasks at their own pace and in their own style. Besides that, they are the most technologically savvy and educated generation to enter the workforce (Lowe et al., 2011). While, Lowe et al., (2011) stated that generation Y likes to think in the short term, expecting immediate feedback and rewards for their efforts.

In addition, generation Y has alsoknown to be well-educated, upbeat, socially conscious, self-reliant andentrepreneurial thinkers (Broadbridge, Maxwell, & Ogden, 2007).As this generation has grown up in a rapidly changing environment, having experienced technological advances such as the Internet and mobile phones, they do not only expect change but desire it(Martin, 2005). Hence, it is essential to understand their characteristics apart from other generational cohorts in order to determine the best way to raise and improve their awareness on green building development in Malaysia.

3.0 Methodology

The main objective of this research is to investigate the awareness of generation 'Y' on green building development in Malaysian as well as recommending methods to improve their awareness on the subject. Therefore, for the purpose of this research, literature review and questionnaire were selected as the research methodology for this study. A total of 150 questionnaires were distributed through email and by hand in which 90 percent was returned. The data collected was analysed as follow.

4.0 Data Analysis and Finding

According to the survey conducted, it is discovered that most of generation Y knows about green building development in Malaysia which is about 76% while only 24% said that they have never known this sustainable approach. This result is in line with one of the objectives formulated under the National Green Technology Policy (NGTP) launched by Prime Minister of Malaysia which isto enhance public education and awareness on green technology and encourage its widespread use. It is important to increase their awareness on this approach to obtain better implementation in the future.

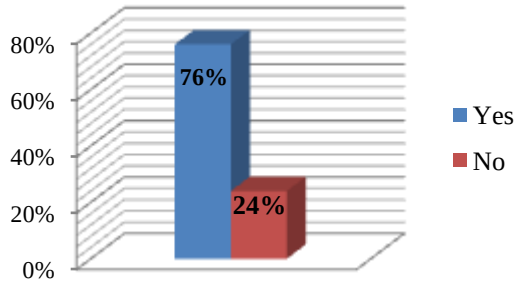

Figure1: Generation 'Y' Awareness on Green Building Development in Malaysia

Figure 2 below shows that 70% of the respondents haveknown about this sustainable approach through internet, while 16 % said through news, 12% through information on newspaper and 2 % through construction magazine. The main reason why the internet has become the main mechanism is because generation Y is a consumer who is internet-savvy. Thus, the distance may not be an obstacle for this generation because they are able to receive

messages regarding this approach via the internet across the nations.

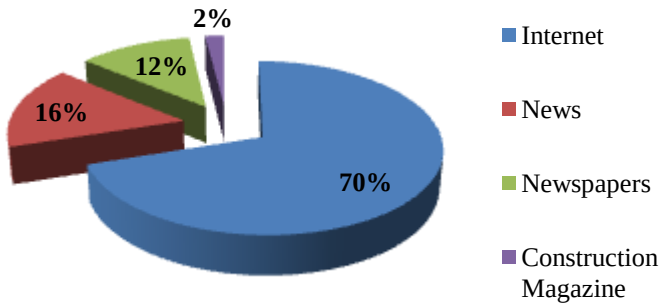

Figure 2: Mechanism Used to Know and Gain Information on Green Building Development

Green technology shall be anengine to boost up the national economy and promote sustainable development to the construction industry. It was supported by Ministry of Energy, Green, Technology and Water (2009) that green technology shall be a driver to accelerate the national economy and promote sustainable development. As depicted in Figure 3.0, 73% of the respondents said that green building is crucial to be implemented to our country's development. This is followed by 24% of the respondents who felt unsure and 3% who said that this approach is not important.

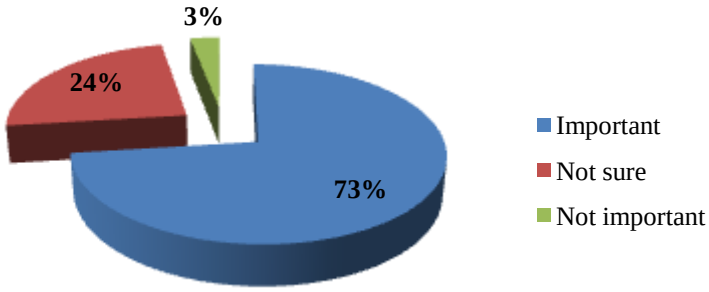

Figure 3: The Importance of Green Building Development to the Malaysia

Based on figure 4 below, majority of the respondentsheld that a healthy environment indoor quality has to be the major criteria to be considered when adopting new sustainable approach to the construction industry. The reason is because the environment will give an overall impact to the nation's society growth. The second criteria selected is energy efficiency which is 29% followed by 28% on conservation and reused of material and resource, 5% on sustainable site planning and lastly 2 % on safeguarding water and water efficiency.

Based on the conducted survey, it is clear that Gen Y is well aware of green building development in Malaysia. Nevertheless, Malaysia still needs full commitment and participation among this generation on this approach to ensure its successful implementation in the future. The result highlighted that 46% of the respondents agreed that electronic media like television and radio will be the main mechanism to improve their awareness on green building development. The reason is because they are also recognized as 'digital generation'. Thus, promotion through TV and radio can be useful to them because they can easily access it and understand it even more. As supported by Umar and Khamidi (2012), the advertisement that is shown through the television, radio station, and others can be another significant value in order to promote the green building among the public. Besides that, 40% said that the internet also can be used to enhance their awareness by creating more websites, blog and applications related to this approach. In addition, 11% of the respondents believed that green courses should be included into the national education syllabus through Ministry of Education and Ministry of Higher Education which include both public and private institutions. Lastly, 3% of the respondents suggested that by conducting seminar, workshop, and conference for generation Y can educate as well as raising their awareness on this approach.

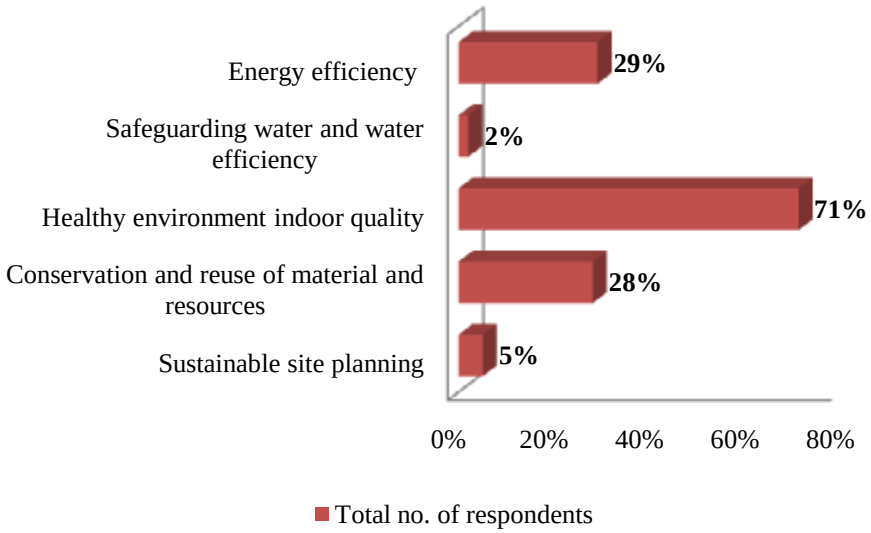

Figure 4: Criteria of Green Building Development

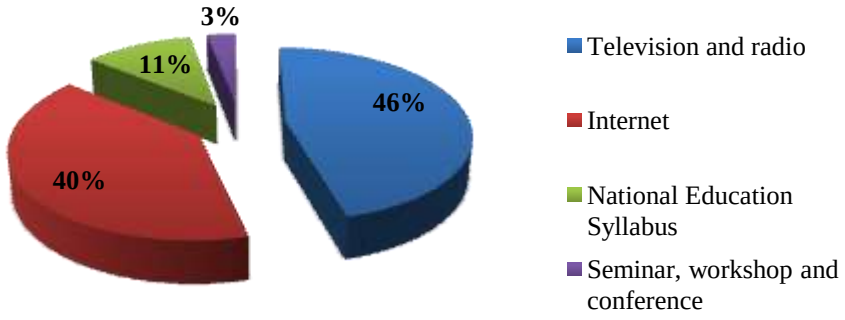

Figure 5: Methods to Improve the Generation 'Y' Awareness on Green Building Development

5.0 Conclusion

This paper reports the overall results of a questionnaire distributed among Generation Y on their awareness on green building development in Malaysia. The methods that can be used to improve their awareness also have been identified. The finding concludes that the absence of generation Y awareness can be a major barrier to develop green technology in Malaysia. The reason is because these new approaches are still a new phenomenon in our country. Most of them are not familiar and do not understand the long term benefit created by this approach. Thus, the government, construction industry and environmental agencies need to take several initiatives to improve their awareness as well as encouraging their participation in this approach. In line with 10th Malaysia plan, the government should encourage and increase public awareness and commitment for the adoption and application of green technology in Malaysia.

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