



Green Home Concept: Consumer's Perception towards Green Homes in Sri Lanka

*D. S. Rohini Samarasinghe

* Senior Lecturer, University of Sri Jayewardenepura, Department of Marketing Management, Nugegoda, Sri Lanka

ABSTRACT

The study elicited the awareness of features in green home and the people's perceptions towards intention to live green home in Sri Lanka. Especially it examines whether the Sri Lankan people understand green features in their homes and values are related to purchase or living green homes. The study utilized survey research adopting quantitative research technique by using the standard questionnaire to measures on behavioural intention of green homes. A random sample of 200 respondents from Western Province in Sri Lanka and self-administrative questionnaire was used to collect the data and analyzed using both descriptive measures, and correlations between variables. Linear regression analysis was employed to test hypotheses. The study concludes that the building or purchasing green home is not only depending on people's awareness of green features but is also determined by health consciousness, the environmental values, socio-economic constraints and habits of people. The results of this study provide to businessmen with valuable insights on consumer behaviour as applicable to understand the green consumers in Sri Lanka in order to develop effective green strategies.

Keywords : Green Home Concept, Consumer Consciousness, Intention to Live Green Home

Introduction

Today's global environment faces some risky trends such as global warming, carbon emission, pollution, resources & energy problems. With this global climate change, people face life threatening environmental consequences. In response to this, various environmental friendly solutions are implemented day by day for the health of the environment and the overall well being of the world around us. Apart from that green building (e.g., green homes or smart home) concept came out in order to meet the need and desire for energy efficient and more environmental friendly construction practices.

Accordingly, concern about the environmental impact of commercial activities and consumption behavior has generated growing interest in "green building or housing concept". It is increasingly important to develop strategies to environmentally sustainable way. Construction industry of green building/home has become as one of the major contributors to climate change to develop the build environment in a sustainable way. American Institute of Architects (2000) highlights the construction industry is the highest source of emissions and energy consumption in the USA and around the globe. Kruse (2004) has noted that mining and manufacturing of raw materials used in constructions and the transportation of heavy building materials are contributing significantly to climate change. He also mentioned that the Cement industry alone accounts for 5% of global man-made CO₂ emissions. In building home uses resources, such as many raw materials, energy, water, land, labour and so forth. It also generates waste and produce harmful atmospheric emissions.

Thus, green building/home brings together a vast array of practices and techniques to reduce and ultimately eliminate the impacts of building on the environment and human health. It often emphasizes taking advantage of renewable resources, e.g., using sunlight through solar power, using plants & trees through green roofs, rain gardens, reduce energy consumption and for reduction of rain water run-off. Many other techniques such as using packed gravel and permeable concrete instead of conventional concrete or asphalt to enhance replenishment of ground water are used as well. Therefore, the green home is seeking consumption to create a sustainable development in the world.

Recently, Sri Lankan government and home builders are introduced green home design & housing scheme aiming to reduce environmental damage by tapping into consumer demand. Green Building Council of Sri Lanka - (GBCSL 2010) explains that 'housing' is a basic need of all human beings and people hope to uplift their living standard and therefore green buildings will help reduce energy consumption and carbon dioxide generation could be significantly cut down by adopting sustainable building principles. There were no such empirical studies conducted to Sri Lankan consumers' awareness of green home attributes and intention to live or buy them in the Sri Lankan context.

However, the awareness of the green home concept and demand of this has not reach to expected level and thus, an important task here is to undertake a research on consumer perception and intention towards living in green home of Sri Lankan consumers. Therefore the study problem is raised as to whether Sri Lankan consumers consider green attributes when building or purchasing their own home, and how they perceive health, environment and comfort consciousness towards living in green homes.

Objectives of the study

The main purpose of this study is to examine the Sri Lankan people's awareness and perception of green features in building or living their own home. It focuses on achieving the following sub objectives in order to address the above major purpose;

1. To identify the degree of the influence of consumer awareness of green features in building or purchasing homes.
2. To examine the extent to consumer consciousness in terms of health, environment & comfort influences to intention for green homes.

Literature Review and Hypotheses Development

Shan et al, (2010) found that home owners pay an important role in requiring green homes as they are the real driving force for buildings to achieve better sustainability. Especially, environmental friendly buildings/ homes are called green/sustainable buildings. Therefore, green buildings use key resources such as raw materials, energy, water, and lands more

efficiently and effectively than traditional buildings with protect the environment. Building design guide of NIBS (2009) indicates six fundamental principles concerning construction should persist in a green building such as;

- ◆ The need to optimize site/existing structural potential
- ◆ Optimize energy use
- ◆ Protection and conservation of water
- ◆ Use of environmental friendly building materials
- ◆ Enhancing indoor environmental quality and
- ◆ Optimizing operational and maintenance practices

Further, BCA in Singapore (2009) provides green building features are those features that lead primarily to energy efficiency, water efficiency, and environmental protection and better indoor environmental quality and other environmental friendly features. Based on the above literature review, key features of green building of the present study were identified as energy efficiency, water efficiency, waste management, environmental friendly raw materials, environmental protection and better indoor environmental quality. Newbold et al. 2010 have found that people are willing to pay significantly higher costs for green homes. As such awareness of green home attributes can influence consumers' purchase intention. Therefore, it is hypothesized that;

H1: Consumers' awareness of green home features positively influences their perception towards living in or purchasing intention for green homes.

According to the US Green Building Council (2009) green building is defined as "practice of increasing the efficiency of new buildings, and reducing their impact on human health and the environment through better site location, design, construction, operation, maintenance, and removal. Further, Urban Ecology Australia (2007) shows that building with more natural lights, and better air quality typically contribute to improved health, comfort, and productivity of end users. It is evident that living in environmental friendly home has improved health of the human being. Therefore, the present study proposes three consumer values that may influence to perception toward living green homes; health consciousness, environmental consciousness and comfort and appearance consciousness. Health consciousness guides people to engage in healthy living life style. Fisk & Rosenfeld (1998) mentioned that building with overall environmental quality can reduce the rate of respiratory disease, allergy, asthma, sick building symptoms, and enhance worker performance. Sri Lanka is heavily use unhealthy materials (e.g., Asbestos) for their roof ignoring the lone term health effect. Further, Sri Lanka is also increased in diseases such as diabetes and hypertension due to changing lifestyles, alteration in food consumption patterns and decrease in physical activity. Therefore, it is hypothesized that;

H2: Consumer's health consciousness positively influences their perception toward living in green homes.

Many research have proved that environmental consciousness guides people to make purchasing decision that are greener (Schlegelmilch et al. 1996) and also mentioned that environmentally conscious people are apt to change their purchasing behaviours to improve the environment. Therefore, it is hypothesized that;

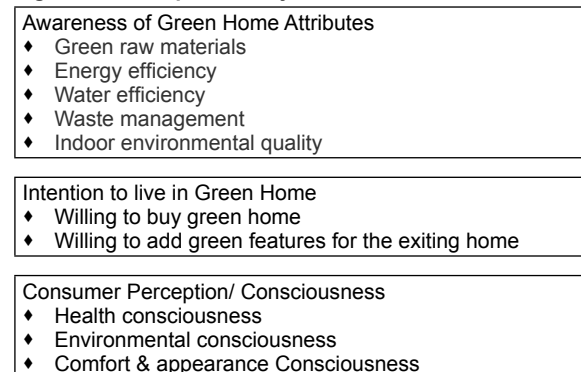
H3: Consumer's environmental consciousness positively influences their perception toward living in green homes.

Comfort and appearance consciousness leads people to express their image. A novel approach to realize the smart, minimum energy of green home is considered in this aspect. Comfort is a main criterion for home owners to employ expensive building automotive technology and it aims is to provide a comprehensive system and architecture for sustainable or digital ecosystem of next generation building. Thus, it is obvious that the appearance & visual comfort, an intelligent usage of home appliances can lead to consumer satisfaction of green homes. Therefore, it is hypothesized that;

H4: Consumer's comfort consciousness positively influences their perception toward living in green homes.

Based on the above literature review, the following study model depicts the hypothesized relationships existing the independent variables and dependent variable of the study.

Figure 1: Conceptual Study Model



Source: Author developed based on literature review

Methodology

The study was applied a survey research approach with self-administrative questionnaire to understand Sri Lankan consumers' awareness of green home features and perception towards green homes. Awareness of features in green home was measured in terms of the amount of knowledge an individual has about the green raw materials, energy and water saving, waste management, indoor quality while perception was measured in terms of the degree of emotionality an individual attach to the health, environment and comfort & appearance consciousness about the green homes using 5 point -Likert scales (Strongly Agree – Strongly Disagree). Intention to live in green home was measured in terms of the individuals' willing to buy and add green features to their existing homes. In order to measure these dimensions, the unit of analysis was people who constructing or living their own home and willing to purchase new home selected of the Western province in Sri Lanka. A convenience sample of 200 respondents was used for the analysis.

Before conducting the questionnaire survey, a pilot study was carried out with a few respondents to confirm validity of the constructs. Cronbach's alpha was calculated to measure the reliability / internal consistency of the measurement scales., All the values were sufficiently reliable, e.g. awareness was .71, health .82, environment .76, comfort (If the value is >= 0.7, the scales will be sufficiently reliable, Nunnally 1967). The face validity of the scales assured through experts' reviews and literature survey. In order to test the dimensionality of the measurement constructs, an exploratory factor analysis was performed by following the procedure recommended by Churchill (1979).

Data analysis strategy in the study consists of both descriptive statistical analysis and inferential statistical analysis. The hypotheses were tested using linear regression analysis The Statistical Package for Social Sciences (SPSS) version 16.0 was used for data analysis.

Findings & Discussion

This study has empirically examined how awareness and perception of Sri Lankan people influence intention towards living or purchasing green home. Initially, the survey findings suggest that Sri Lankan consumers' level of understanding of green features and green purchase intention are rather low except energy saving attribute. The findings shows that the most of Sri Lankans (85%) are caught running up huge electricity bill at home affect to use energy savings bulbs & save energy. It turns out that people are now reverting to green energy as well. Anyhow, most of the respondents (80%) are aware sola power but they have no intention to apply it for their home because of the high initial costs.

According to the Pearson correlation analysis, it was evident that health consciousness had a significantly positive association with green home purchase intention while environmental and comfort consciousness towards living or purchase intention of green homes had no significantly strong positive associations. In testing the hypothesized relationships depicted in the conceptual model, the linear regression analysis revealed the following results as shown in the table: 1.

Table 01: Linear Regression Results

Independent Variable	Dependent Variable	Beta	Significance level (at p value<0.05)
Awareness of green features in home	Intention	0.04	0.25
Health consciousness	Intention	0.67	0.002*
Environmental Consciousness	Intention	0.04	0.28
Comfort Consciousness	Intention	-0.01	0.41

The results of this analysis are given in the table: 1. According to this analysis, hypothesis-1 is rejected and there is no significant evidence to conclude that the consumer's awareness of green features positively influences the living green home or purchase intention in Sri Lanka. However, hypothesis-2 is accepted and there is significant evidence that the consumer's health affect positively influences living green home or purchase intention in Sri Lanka and also its impact seems strong. Further, hypothesis-3 and 4 are rejected and there is significant evidence to support rejection of these two in Sri Lanka. Especially, comfort consciousness is negatively affect the Sri Lankans because most of the respondents are looking at luxury home features (e.g., Air Conditioning, unnecessary

large spaces, non energy efficient home appliances) ignoring the environmental affect of them. 72% of Sri Lankans would like to show the outer appearance of their home than eco features. Further R2 value of the model was 0.46 revealing that 46% of the variance of the perception of willingness to live in or intention for green home purchase is explained by the independent variables of the study.

Conclusion and Further Research

In final analysis, the study identifies the perceived health consciousness is a significant drive that motivate Sri Lankan to live in or buy green homes. However, awareness of green features, environmental consciousness and comfort consciousness are not powerful influences for green home living or purchase intention in Sri Lanka. This can mean that Low and middle income groups having poor living standard are often vulnerable to environmental health risks associated with poor health quality, lack of safe water and poor sanitation and therefore, they are motivated to consider more on health consciousness rather than any other factor in Sri Lanka. Hence, from branding perspective, green marketing programs have not been entirely successful. Further it says overexposure and lack of credibility seems marketing strategy introduced by the sellers and public become very skeptical this finding is consistent with that of Kotler and Keller (2005).

It is also necessary to carry out further studies to identify other powerful factors that affect green home purchase intention than the variables tested in the study as the Sri Lankan social-cultural context have unique characteristics. It can further study how demographic characteristics of Sri Lankan can moderate these relationships.

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