



A Study of Consumer Awareness: Towards Eco Friendly Buildings in Pune City

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Abstract

In modern India, Construction activity is one of the largest activities boosting the Indian economy and has a significant impact on the environment in terms of leaving the footprints. Constructions in India have been pursued without giving much attention on the environmental issues which has resulted in pressure on its finite natural resources. Unplanned and unsustainable constructions in India have lead to severe environmental problems in India. Green constructions from residential estates to Malls and airports should be considered in the long term strategy plan as a long term solution to combat climate change and reduce utilization of fossil fuels and reduce wastage of water.

By 2025 the combination of Green buildings and smart growth in India could deliver improved efficiency in utilization of resources.

Through this reach paper the basic understanding of eco- friendly building programs and concepts was explored amongst the consumer.

Key words: Eco friendly buildings, Sustainable buildings, Energy efficient buildings, Green Constructions.

Introduction

In the last decades the uncontrolled impact of industrial activities on the natural environment has created critical ecological concerns. The aggravation of phenomena like climate change, ozone depletion, over exploitation of natural resources, air pollution, and toxic wastes are harming the sustainable development of the planet and of the economic system. Terms like green marketing and green customer have evolved and a lot of work is being done to understand the awareness levels of the customer, their attitudes towards the green products and their willingness to accept and pay a premium for the green products

Every year people living on the earth throw away enough garbage to cover a huge part of the world. Most of the waste ends up in landfills which are very costly and which may have a major impact on the environment and on the health of the people living on this planet. Saving the environment has become a big issue in recent times. The messages are being promoted as REDUCE, RE-USE and RECYCLE.



Construction activity is one of the largest activities boosting the Indian economy and has a significant impact on the environment in terms of leaving the footprints. Constructions in India have been pursued without giving much attention on the environmental issues which has resulted in pressure on its finite natural resources. Unplanned and unsustainable constructions in India have lead to severe environmental issues. Indian government is encouraging foreign companies to invest in India through their policy frameworks and financial incentives

This study attempts to present the awareness level and the to present a snapshot of developments and important features of Eco- friendly buildings

Review of literature

Dileep Kumar (2010) analysed that how far the hotel business organizations in the tourism sector meet the customer"s needs through green marketing effort and how they influence the consumer behaviour and their satisfaction by inducing environmentally responsible behaviour.

Vijay Jain et al (2010) summarized the three C"s process for green marketing implementation as Consumer Value Positioning, Calibration of Consumer Knowledge and Credibility of product.

Artee Aggrawal et al (2010) outlined that Eco-responsible (Green) organizations have a tough task to optimise their product offering mix in such a way so that they can not only attract customer towards them but also can have their products price competitive.

Ramakishen et al (2010) understood that the factors for going green as Goodwill, Differentiation, Competition, Pressure Groups, Government Pressure, Customer Demand, New Market Entry

The study conducted by **Sourabh Bhattacharya (2011)** states that the green marketers in India should carry out heavy promotional campaigns, because majority of the Indian consumers are price-sensitive and are not sure about the quality of green products.

The study by **Saloni Pawan Diwan & B. S. Bodla (2011)** observed that it is not a smooth sailing of the ship carrying green products and services in the sea of intense competition. The boat can encounter an iceberg of increased cost and prices and inflated claims of "greenness".

Selvakumar & Ramesh Pandi (2011) indicated that Green Marketing is not all about manufacturing green products and services but encompassing all those marketing activities that are needed to develop and sustain consumers" eco-friendly attitudes and behaviours in a way that helps in creating minimal detrimental impact on the environment.



The study by **Moloy Ghoshal (2011)** examined that green marketing was still in infancy. In the perception of marketing scholars, green marketing refers to eco-level and market segmentation and the role of structural factors and economic incentives in influencing consumer behavior. The green marketers must understand to satisfy two objectives: improved environmental quality and customer satisfaction.

The study by **Ann Kronrod et al (2012)** highlighted and explained the surprising prevalence of assertive environmental messages in the media. Environmental agencies, which are populated with people who perceive protecting the environment as a highly important issue, should understand that not all consumers are as informed and concerned about the environment.

Robert Dahlstrom (2011) examined that Green Marketing has positive influences on multiple participants in the economy. The environment, developing economies, consumers, corporate strategy, the product, production processes, and supply chain benefit from green marketing. Green marketing firms establish strategic alliances with government, local communities, nongovernmental organizations (NGOs), industry experts, and competitors.

According to **Roger A Kerin et al (2007)**, Green Marketing takes many forms. It comes from product development opportunities that emanate both from consumer research and its “Pollution Prevention Pays” program. This program solicits employee suggestions on how to reduce pollution and recycle materials.

Biji P Thomas & H Nanje Gowda (2010) highlighted that environmentally friendly buildings are also known as Green Buildings. Some of the visible “green” features, such as exterior window shading, good daylighting, green (landscaped) roofs, and natural ventilation chimneys are often considered as the signals of being green.

The study by **Rakesh Rajpal et al (2011)** analyzed that Green Supply Chain Management (GSCM) is a relatively emerging issue for the majority of Indian Corporations. The findings of this study indicated that industries should emphasize on supplier management performance in adoption of green supply chain management. Implementing Green supply chain properly will drive real business value.

Environmental Marketing & Sustainability

Ashwini Kumar Sharma (2010) conceptualized that the green building concept in real estate not only enhances the marketability of a project, but also addresses important national priorities, such as water conservation, handling of consumer waste and energy conservation.

Andrew S. Winston (2010) summarized in their study that Companies and countries must deal with current and longer-term environmental issues while simultaneously working on current economic challenges. The four areas of focus mainly “Get Lean, Get Smart, Get Creative, Get people engaged” will benefit your company today and tomorrow. In short, green isn’t a tangential pursuit that distracts from the real work of the business.



According to **Yvon Chouinard et al (2012)**, Sustainability is survival. The essential “services”, such as clean water, clean air, arable land, and a stable climate, are what all businesses depend on to survive. Sustainability is not a tomorrow problem, but it is a movement.

Gregory Unruh and Richard Ettenson (2010) found that Green growth is at the top of many leaders' agendas, but the way forward is rarely clear. The three broad product strategies like Accentuate, Acquire and Architect should align green goals with your capabilities.

From the study by **Elangovan et al (2006)**, it was clear that there is a growing concern for environmental degradation and the resultant pollution all over the world. Industrialization, Urbanization, new consumption pattern and social linkages are mainly responsible for the present state of environmental degradation.

In their analysis by **Pravin Agrarwal et al (2010)** found that the Kyoto Protocol had been signed in the year 1997 to tackle the effect of global warming. India may think of having its own carbon credit market, where energy intensive firms may purchase carbon credit internally from other energy efficient firms.

The study by **Varsha Jain & Subhadip Roy (2010)** addressed the concept of Ecoism from the consumer perspective. It was found that Eco-friendly products are still in a nascent stage in India (such as organic food). It is difficult for the consumers to comprehend about eco-friendly products across all categories.

Kupuswamy & Venkatrama Raju (2011) examined that the initiatives undertaken by the companies to improve Energy Efficiency, devising ways and means for re-use of energy, oils and materials to promote Resource Conservation. It highlights the development of sustainability at three levels, namely, Strategic Level, Relationship and Co-ordination Level and Operating Level.

In their study by **Muthamizh Vendan Murugavel (2010)** found that, the impact of global warming is likely to hit developing countries hardest. Global warming threatens availability of fresh water, food security and productivity of natural resources.

Philip Kotler (2011) recognized that the Companies need to make drastic changes in their research-and-development, production, financial, and marketing practices if sustainability has to be achieved. The several environmental challenges to be considered in the sustainability are change in the composition of the atmosphere, depletion of the ozone layer, Soil degradation and increased desertification, Increased air and water pollution.

Smitha Khare (2011): Amid ecological debates and the alarm bells over global warming, a resolute Indian is firm on making the country greener. Environmental consciousness is gradually becoming part of today's lifestyle with everyone chipping in to make the country greener.



Martin Wright (2011): In a world of dwindling natural resources, sustainability is no longer a fashionable word. It makes business sense. Leading companies are adapting fast. Unilever has committed to halving its environmental impact by 2020- while doubling sales. Wal-Mart plans to have 100% of its energy needs met from renewable.

David L. Loudon & Albert J. Della Bitta (2010) signified that the “green” movement is growing extensively and marketers are seeking to cash in on an environmental awakening. “Green” may be to the 90s what “light” was to the „80s, with products clamoring to show how they are environmentally sensitive.

Philip Kotler & Kevin Lane Keller (2011): Companies that moud “green programs” can face two main problems: consumers may believe that product is of inferior quality of being green and consumers feel the product is not really that green to begin with.

Michael R. Solomon(2009) identified that firms that adopt the philosophy to protect or enhance the natural environment as they go about their business activities is an instance of green marketing. Marketers point to a segment of consumers who practice LOHAS – an acronym for “Lifestyles of Health and Sustainability

The study by **Henry Assael (2006)** observed that In U.S., Companies have taken actions to promote environmental controls towards green marketing; For example : Reynolds Wrap promotes recycling , while Crane Papers advertises the natural content of its products,

McDonald"s switched from plastic to paper wrapping and uses recyclable products to build its restaurants.

Douglas J. Darymple & Leonard J. Parsons (2002) believe that the “green” movement is a answer for business to produce more environmentally safe products. This approach is known as green marketing. Environmentalism is only one aspect of responsible conduct. The products should be designed for recyclability where possible.

Fertiliser Marketing - Organic Fertiliser

The study by **Pallavi (2011)** found that the technological breakthrough in agriculture, popularly known as the green revolution, which took place in Indian agriculture from the 1970s onwards, has considerably increased the income of rural India. The overall marketing mix has changed from the traditional „4 Ps" to the new „4 As", i.e., Affordability, Awareness, Availability and Acceptability.

Venugopal et al (2011) in their study elucidated that Horticulture has emerged as an indispensable part of agriculture, offering a wide range of choices to the farmers for crop diversification.

The study by **Chennakrishnan (2011)** outlined that, with growing consumer appreciation of organically grown fruits, there is an increasing demand for organically grown bananas. India



has the potential to emerge as a major exporter of organically bananas by promotion of bio-fertilizers, bio-pesticides, recycling the wastes of eco-friendly inputs and setting up national certification schemes and accreditation agencies to certify organic products in the country.

Consumers' Attitude & Perception

The study by **Ranjith & Ela Goyal (2011)** highlighted that highest brand memory, brand recall, brand that connects with the people, pricing, overall satisfaction in long life of the product and communication programs designed by the company are the parameters that influence the consumer perception.

From the study by **Bhaskaran & Suchitra Mohanty (2008)**, it has been observed that The concept of organic agriculture is very wide and holistic which is close to sustainable agriculture. Organic agriculture is a method of agricultural production that supports the environment. It uses minimum external input and recycles the on-farm resources efficiently.

Significance of the Research

The construction sector in India is a significant contributor to the National income. This sector contributes to about 8-10 % of India's GDP. The real estate comprising of housing, commercial and retail is growing at a rapid rate and is poised to emerge as one of the most preferred investment destination for the local Indians and well as the foreign investors.

At the same time it is appeared to be confusion as to whether eco friendly buildings are built with high quality materials and with recycled materials. However, that more attention could be paid to clarify to consumers that the products used to construct green homes are durable as well as environmentally friendly.

Since this concept is new in Pune lot of misinterpretations and confusion is there amongst the customers. So there is a enormous necessity of proper research in this area.

Green Marketing-Need

In today's innovative business world of high technology due to growing community and consumer interests in green and socially responsible products, increased community pressure on companies to internalize externalities, such as health issues, neighborhood amenity, climate change; environmental and governmental legalizations and initiatives; innovative technologies and approaches of dealing with pollution, improved resource and energy efficiency, and to retain old (loyal and profitable) customers and consumers, it is very much urgent to implement green marketing.

Further green management produces new environment friendly customers which lead to increase in sales and profits of an organization that leads to growth and development of business; it also leads to good public image of the organization. In the present times when the government regulations around the globe are very strict and the whole world is talking about global warming ,climate change and environment protection the companies would be left with no option but to adopt green marketing otherwise it might be too late to survive in the



greener world. The consumer's world over in general and India in particular are increasingly buying energy efficient products.

The main objectives of the research are:

1. To determine the current transition stage in Green building business.
2. Consumer Perspectives on eco friendly vs. Conventional Homes
3. To study the customer awareness level amongst the customers.

Methodology Adopted:

In this study, for collecting primary data, the survey method of data collection was used. The data was collected through structured personal interview method and to some extent observational method was also incorporate for data collection. To identified strength of the method was, it's insightfulness as perceived casual inference emerged and the flexibility in design due to the structured questions design , led to the focused insight into the specific areas that the researcher wants to focus so that interview flowed more like formal discussion which has set questions. So that information collected would pertain to the research objectives, which resulted in the anticipated research outcomes being met successfully.

Questionnaire:

The questionnaire contains 3 sections. In the first section of the questionnaire the questions were included about the respondent's demographic profiles at the same time the questions were asked, to understand the extent of the attitude of respondents towards the environment and understanding of eco friendly concept in construction. Furthermore, they were also asked the sources of information.

In the second section, the researcher tried to find out the awareness level about the eco friendly buildings and in the last part the researcher want to study the customer perspectives on green vs. conventional home. Simple data analysis techniques were adopted such as descriptive statistics; and SPSS were used to accurate analysis and inferences.

Scope of the Study:

The study will be limited to the eco friendly buildings with the purpose of gaining a deeper understanding of green consumer, their awareness and the attributes attract them towards the same. Due to the time constraint the geographic scope will be limited to Pune city. And the time scope of the study will be limited to the present scenario and the current situation in the market.



Data Collection:

The primary data has been collected through administration of structured questionnaire and secondary data has been collected from various web sites and reference books.

Sampling Design:

A survey of randomly selected residents was conducted to determine their awareness of an interest in green buildings. The research sought to complete 50 surveys of respondents selected from major areas of pune city.

Data interpretation and findings

1. Although the green building market is growing nationwide, data indicates that significant outreach efforts are needed to encourage demand for green homes in pune city.
2. Data seems to indicate that residents are not clear on what 'eco friendly' means but lot of interest was noticed in understanding the concept.
3. Most of the respondents are not aware about the certification programs currently available in Pune city.
4. Data showed that using tradition media (television, newspapers, and magazines) are the means through which most people have learned about this concept of eco friendly buildings.
5. In response to the questions on how green homes compared to conventionally built homes, interviewees consistently indicated that they were more environmentally friendly. Their responses, however, were not as consistent with regard to water conservation, energy efficiency and material and building quality. This seems to indicate that residents do not link energy/water conservation and quality of materials with environmental quality.
6. Most of the respondents were thinking that green built buildings were not easy to maintain and such buildings are built with recycled materials.
7. Majority of respondents agreed that eco friendly buildings are durable and they are made of Quality construction materials.
8. According to the respondents Eco friendly buildings provide Healthy indoor air and have better landscaping.

Conclusions and Recommendations

1. This research points out to the continued need for education and both environmental and economic benefits of the eco friendly buildings.
2. Continued efforts are needed to build label recognition for the green Certification programs currently available for the Pune city. This will help to explain the deeper meaning of green building to the public and also encourage continued market growth.



3. Even though the green building market share is continuing to grow rapidly, the lack of understanding of what 'green building' means points to the need for continued outreach efforts.
4. Results show that television, newspaper and magazines are the primary ways through which people first learned about green building and very few respondents received information through the real estate agents, sales offices and concerned people.
5. A further exploration of point-of-sale (sales offices, builder/contractor, real estate agents) education and outreach options is necessary. Workshops for real estate agents and offices, and builders can help educate industry members and better allow them to explain options to potential customers. Additionally, having literature available on green building at real estate agents and builders offices can provide a stimulus for the consumer to initiate a conversation about green options available to them as they consider buying or building a new home.
6. This data demonstrates that existing confusion in the industry regarding best material choices is influencing consumers' perception of the durability and quality of materials being used in green homes.

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