ANALYZING THE IMPACT OF GREEN MARKETING ON CONSUMER’S BUYING BEHAVIOR WITH RESPECT TO AUTOMOBILE SECTOR

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ABSTRACT
This research paper is an attempt to figure out how deeply the green marketing strategy is used in the automobile sector and how consumer decision is altered by such green marketing strategies. Over the last years, concern for environment has increased due to rising global warming crisis and skyrocketing energy costs. This consciousness raising has led the consumers to go for ecological products. Green marketing is an approach to attract buyers towards such products which are environmentally safe and are ozone friendly. India is one of the emerging markets for worldwide auto giants and incorporating greener ingredient within this sector would provide better growth avenues for the manufacturers. For having an insight about what impact does green marketing has with reference to automobile sector on the consumers decision, an analysis was done by way of survey on 52 respondents on the basis of various parameters such as Age group, Gender, Income level, education level & car specifications.

Keywords: Green Marketing; Consumer Behavior; Automobile Sector; Green Vehicle

INTRODUCTION

Concept of Green Marketing

Ever since with rising population, there has been an increasing concern for the ecology. With n number of products in the market serving millions of customers somewhere our environment has been at stake. Producers claim for a greater share of profits by serving such products which could have detrimental effects for the ecology and ozone but still there are some industries who claim that they are environment friendly and have high concern for society and are known as green industries and their marketing Philosophy is termed as green marketing.

According to Kotler (1991), Marketing is the social process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others. The marketing concept is a customer orientation backed by integrated marketing aimed at generating customer satisfaction as the key to satisfying organizational goals. But this concept has undergone a change, now consumers are not focused on getting just good quality products but a product which is environmental friendly, recyclable, reusable and planet friendly. This need of society is fulfilled by Green Marketing.

Green Marketing as defined by American Marketing Association(AMA) is the marketing of products that are presumed to be environmentally safe; it incorporates several activities such as product modification, changes in production processes and packaging, advertising strategies and also increases awareness on compliance marketing amongst industries.
Polanski (1994) defines green marketing as all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that satisfaction of these needs and wants occurs with minimum detrimental impact on the natural environment.

Several successful cases of green marketing strategies can be seen in India as follows:-

- CNG in Delhi: New Delhi was being polluted at a very fast pace until Supreme Court of India forced a change to alternative fuels. It asked the government to introduce clean fuel like CNG in public transport system which has low sulphur content.
- In India we have Eco hotels like Orchid, Rodas, and Rain tree believing and practicing green marketing.
- The Taj chain, is in the process of creating eco room which have energy efficient mini bars, organic bed linen and napkins made of recycled papers
- ITC has created the greenest luxury chain of hotels in the world - an identity that helped the company position differently in the market. All its hotel properties are LEED platinum certified. Leadership in Energy and Environmental Design (LEED) is a rating system developed by Green Building Environment Council in the US that sets standards for sustainable buildings.
- Developing Indica EV, an electric car that would run on polymer lithium ion batteries.
- Tata Motors Ltd. is setting up an eco friendly showroom using natural materials for its floorings and energy efficient lights.

Automobile Industry Profile

The automobile industry in India is one of the largest automobile markets in the world. India's passenger car and commercial vehicle manufacturing industry is the sixth largest in the world, with an annual production of more than 3.9 million units in 2011. According to recent reports, India overtook Brazil to become the sixth largest passenger vehicle producer in the world (beating such old and new auto makers as Belgium, United Kingdom, Italy, Canada, Mexico, Russia, Spain, France, and Brazil). Throughout the course of 2011 and 2012, the industry grew 16-18%, selling around three million units. In 2009, India emerged as Asia's fourth largest exporter of passenger cars, behind Japan, South Korea, and Thailand. In 2010, India beat Thailand to become Asia's third largest exporter of passenger cars.

As of 2010, India is home to 40 million passenger vehicles. More than 3.7 million automobile vehicles were produced in India in 2010 (an increase of 33.9%), making the country the second (after China) fastest growing automobile market in the world in that year.

But rapid expansion of automobile industry is also causing certain serious environmental problems. Every year more than 30 billion tons of CO₂ is released into the atmosphere. The main responsible source is the production of energy (37%) and the second is transportation (25%) (FEBIAC, 2008). India’s auto sector accounts for about 18 per cent of the total CO₂ emissions in the country. Relative CO₂ emissions from transport have risen rapidly in recent years.

Pollutants derived from automobile operation have begun to pose environmental problems of considerable magnitude. Vehicle emissions contribute to the increasing concentration of gases linked to climate change. In order of significance, the principal greenhouse gases associated with road transport are carbon dioxide (CO₂), methane (CH) and nitrous oxide (N₂O). Of the total greenhouse gas emissions from transport, over 85% are due to CO₂ emissions from road vehicles. The transport sector is the fastest growing source of greenhouse gases. About 70% of the carbon monoxide, 45% of the nitrogen oxides, and 34% of the hydrocarbon pollution in the world can be traced directly to automobile exhausts. In addition, rubber (which wears away from tires), motor oil, brake fluid, and other substances accumulate on roadways and are washed into streams, with effects nearly as serious.
as those of untreated sewage. A problem also exists in disposing of the automobiles themselves when they are no longer operable. These are the major corporate social responsibility problems in the industry.

**Importance of Green Marketing within Automobile Sector**

Green Marketing can help reduce all above mentioned problems. If the consumers start adding the environment ingredient in their purchasing decision the companies will have no other option rather than serving green products which would ultimately result in more savings for consumers. Extensive research & development, option of alternate fuels, clean technologies and quality control to oversee adherence to product conformance will shape the future of automobile sector in India.

Various green initiatives have been taken in the automobile sector as follows:

- India may opt for Euro VI emission levels in 2017, skipping Euro V. As of now, Euro IV emission levels are applicable in 13 major cities of India and rest of the country has Euro III norms. By 2012, entire country is supposed to have uniform Emission levels of Euro IV for vehicles. Introduction of new norms depends on improvement in vehicle engine technology and availability of cleaner fuel by petroleum companies. It is estimated that similar amount will be required to meet Euro VI norms.

- The phasing out of 2 stroke engine for two wheelers, the stoppage of production of Maruti 800 & introduction of electronic controls have been due to the regulations related to vehicular emissions.

- The Toyota Prius is the world’s top selling hybrid car, with cumulative global sales of over 3 million units by June 2013.

Many cars have entered in the market based on the concept of green marketing and include hybrid electric vehicles, plug- in hybrid electric vehicles, battery electric vehicles, compressed- air vehicles, hydrogen and fuel- cell vehicles, neat ethanol vehicles, flexible- fuel vehicles, natural gas vehicles, clean diesel vehicles, and some sources also include vehicles using blends of bio diesel and ethanol fuel or gasohol.

**Table 1.** Comparison of several types of Green car basic characteristics

<table>
<thead>
<tr>
<th>Type of vehicle</th>
<th>Fuel Economy</th>
<th>Range</th>
<th>Production Cost for given range</th>
<th>Reduction in CO2 compared to conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional ICE</td>
<td>10-78</td>
<td>LONG (400-600mi)</td>
<td>Low</td>
<td>0%</td>
</tr>
<tr>
<td>Bio Diesel</td>
<td>18-71</td>
<td>LONG (360-540mi)</td>
<td>Low</td>
<td>100%</td>
</tr>
<tr>
<td>All Electric</td>
<td>54-118</td>
<td>SHORTER (73-150 mi)</td>
<td>High</td>
<td>Varies Depending On Energy Source</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Luxury models Medium (160-300 mi)</td>
<td>Very High</td>
<td></td>
</tr>
<tr>
<td>Hydrogen Fuel Cell</td>
<td>80</td>
<td></td>
<td>Astronomical</td>
<td></td>
</tr>
<tr>
<td>Hybrid Electric</td>
<td>30-60</td>
<td>(380 mi)</td>
<td>Medium</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2.** Kelly’s Blue Book Top 05 Green Cars of 2014

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>CAR model</th>
<th>YEAR</th>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BMW i3</td>
<td>2014</td>
<td>Electric</td>
</tr>
<tr>
<td>2</td>
<td>Nissan Leaf</td>
<td>2014</td>
<td>Electric</td>
</tr>
<tr>
<td>3</td>
<td>Toyota Prius</td>
<td>2014</td>
<td>Hybrid Electric</td>
</tr>
</tbody>
</table>
Table 2. Kelly’s Blue Book Top 05 Green Cars of 2014 (Contd….)

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>CAR model</th>
<th>YEAR</th>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Tesla Model S</td>
<td>2014</td>
<td>Electric</td>
</tr>
<tr>
<td>5</td>
<td>Honda Accord Hybrid</td>
<td>2014</td>
<td>Hybrid Electric</td>
</tr>
</tbody>
</table>

Ways to Become Green

Ottoman (2008) published the 5 simple rules of green marketing: 1) get the right message and to know what is important to customers; 2) empower them to feel they make a difference; 3) be transparent; 4) maintain quality; and finally 5) carefully evaluate price concerns. Unsuccessful companies are due to a lack of planning and crafted marketing message. If respecting the five rules a company must succeed. Cars with similar production energy costs can obtain, during the life of the car (operational phase), large reductions in energy costs through several measures:

- The most significant is by using alternative propulsion: An efficient engine that reduces the vehicle's consumption of petroleum (i.e. petroleum electric hybrid vehicle), or that uses renewable energy sources throughout its working life.
- Using bio fuels instead of petroleum fuels.
- Proper maintenance of a vehicle such as engine tune-ups, oil changes, and maintaining proper tire pressure can also help.
- Removing unnecessary items from a vehicle reduces weight and improves fuel economy as well.

Some initiatives have also been taken by government to turn green. ISO 14001 and Bharat Stage Emission Standards are such few examples.

1. International Organization for Standardization (ISO), the world's largest developer and publisher of international industrial and commercial standards, is committed to developing standards that is aimed at increasing the attention of the automobile manufacturers. ISO 14001 has become the market-oriented instrument to direct consumers’ purchasing behavior and its application to the automobile industry is growing rapidly. ISO 14001 aims to educate consumers about the environmental and social effects of automobile production and consumption in order to advocate changes in purchasing behavior and reduce negative environmental impacts. Companies are induced to use environmentally and socially preferred production with the expectations of gaining a greater market share and higher profits.

2. Bharat stage emission standards are emission standards instituted by the Government of India to regulate the output of air pollutants from internal combustion engine equipment, including motor vehicles.

Table 3.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>REFERENCE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BHARAT STAGE II</td>
<td>EURO 2</td>
<td>1 APRIL 2005</td>
</tr>
<tr>
<td>BHARAT STAGE III</td>
<td>EURO 3</td>
<td>1 APRIL 2010</td>
</tr>
<tr>
<td>BHARAT STAGE IV</td>
<td>EURO 4</td>
<td>1 APRIL 2016(PROPOSED)</td>
</tr>
<tr>
<td>BHARAT STAGE V</td>
<td>EURO 5</td>
<td>1 APRIL 2020(PROPOSED)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>REFERENCE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDIA 2000</td>
<td>EURO1</td>
<td>2000</td>
</tr>
<tr>
<td>BHARAT STAGE II</td>
<td>EURO 2</td>
<td>2001; 2005 Nationwide</td>
</tr>
<tr>
<td>BHARAT STAGE III</td>
<td>EURO 3</td>
<td>2005; 2010 Nationwide</td>
</tr>
<tr>
<td>BHARAT STAGE IV</td>
<td>EURO 4</td>
<td>1 APRIL 2010</td>
</tr>
<tr>
<td>BHARAT STAGE V</td>
<td>EURO 5</td>
<td>1 APRIL 2020(PROPOSED)</td>
</tr>
</tbody>
</table>
LITERATURE REVIEW

The literature has been reviewed from the reputed journals of both National and International Journals pertaining to Green Marketing and its related issues. The literature has also been reviewed from Text Books, Magazines, & Websites.

Mintu and Lozada (1993) have defined green marketing as “the application of marketing tools to facilitate exchanges that satisfy organizational and individual goals in such a way that the preservation, protection, and conservation of the physical environment are upheld”.

The ecological marketing was first defined by Henion and Kinnear in 1976 as “The study of the positive and negative aspects of marketing activities on pollution, energy depletion and non energy resource depletion”.

Polanski (1994) for instance notices that unfortunately a majority of people believes that green marketing refers solely to the promotion or advertising of products with environmental characteristics. This also explains why the concept is often linked with terms like phosphate free, recyclable, refillable, ozone friendly. He also claims that the green marketing incorporates a broad range of activities, including product modification, changes to the production, packaging changes, as well as advertising.

According to Ottman (2006) a strong commitment to environmental sustainability in product design and manufacturing can offer to companies’ opportunities to grow their businesses, to innovate or to build brand equity. She also notices that the green marketing can lead to product improvements that can enhance marketability, improve overall performance and become a potential new source of innovation.

According to the Queensland Government (2006) the green marketing is: “To develop and promote products and services that satisfy your customers wants and needs for quality, performance, affordable pricing and convenience without having a detrimental impact on the environment” (Polanski 1994). De Paco&Raposo (2009) segment the green market into three main categories: (1) “the uncommitted” (36%), younger, more educated with “negative positions in relation to some environmental aspects,” (2) “the green activists,” (35%) gen X’ers and Baby Boomers who enjoy more income and favorable positions towards all environmental aspects, and (3) “the undefined,” (29%) who are either older or less educated than the other segments and consider their actions as unrelated to the greater environment.

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 & increased desertification, increased air and water pollution.

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

According to Joseph & Rupali korlekar(2012), there is a scope for in-depth studies on green marketing to be conducted in developing countries like India, not only on understanding consumers’ perception but to study the detailed profile of such consumers who have a more positive attitude towards green marketing and green products.

Charles W Lamb et al (2004) explained that —Green Marketing|| has also become an important way for companies to build awareness and loyalty by promoting a popular issue. By positioning their brands as ecologically sound, marketers can convey concern for the environment and society as a whole.
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.

Amyx et al. (1994) define perceived importance, with respect to the environment, as the degree to which one expresses concern about ecological issues.

Laroche et al. (1996) reveals that the strength of the relationships between attitudes and consumers willingness to spend more for green products. The attitude that showed the most discriminating power between the two segments of customers is the perceived inconvenience of being environmentally friendly.

**RESEARCH OBJECTIVES**

The objective of the research study is as under:

1. To analyze customer buying behavior and factors which influence the purchase decision process for automobile sector.
2. To analyze what impact does green marketing creates in the minds of customers.
3. To ascertain the attitudes of customers towards alternatively fueled vehicles.

**RESEARCH METHODOLOGY**

The main objective of the study is to analyze the impact of green marketing on consumer’s buying behavior within the automobile sector. The research methodology adopted is based on primary data and secondary data analysis.

**Type of Method**

Qualitative study and quantitative study are the two options to choose from but the former was chosen for multiple reasons. Qualitative study is characterized by flexibility, in opposition to the rigorousness structure of a quantitative study. This type of analysis is based on the views of respondents. This kind of study was chosen in order to get a deeper understanding of the subject. This type of research is based on few steps as follows:-

a) General research questions
b) Selection of subjects
c) Collection and interpretation of data
d) Analysis of findings
e) Conclusion

**Type of Research**

Exploratory research was carried out for insights about a specific problem. This kind of research is particularly efficient when there is little preceding knowledge. In this case, since there was little prior information about consumer preferences, this type of research was considered as more suitable solution.

**Types of Data**

There are two types of data:

- Primary data- According to Secrist, “Primary data means those data which are original that is those in which little or no grouping has been made, the instance being recorded as
encountered. They are essentially raw material. "For this purpose a questionnaire was prepared and questions were asked from the respondents.

- Secondary data- Secondary data refers to that data which have been retrieved from already published sources.

**Collection Of Data**

Primary data was collected by the following methods:

- Direct Personal Investigation
- Questionnaire method
- Indirect Oral Investigation

For collection of primary data, a sample survey was collected on over 52 respondents with the help of questionnaire. Universe of this research is automobile customers of Delhi and the sampling technique used is simple random sampling.

Secondary data was procured from the following sources:

- Books, Magazines and Journals
- Newspapers, International Publications
- Government Publications, Annual reports
- Internet
- Library database

**ANALYSIS AND INTERPRETATION OF DATA**

![Pie Chart]

**Education Level of the Respondents**

A total of 52 respondents were surveyed for analyzing the impact of green marketing on consumer’s buying behavior with respect to Automobile sector. Out of the respondents surveyed 17 were Graduates, 25 respondents were Post Graduates and 3 respondents were Doctorates. Thus it can be inferred that out of the respondents surveyed there is a larger section of Graduates and Post Graduates.
A total of 52 respondents were surveyed for analyzing the impact of green marketing on consumer’s buying behavior with respect to Automobile sector. Out of which 24 falls under the category of 18-24, 12 falls under the category of 25-34, 9 falls under the category of 35-44, 6 falls under the category of 45-54 and 1 falls in the category of >54, which indicates that most respondents were young.

Out of the respondents surveyed 30 were Males and 22 were Females which indicates that data was not biased to male sector.

Out of the Respondents surveyed, 7 were having monthly income <20,000; 28 were having between 20,000-40,000 per month; 15 were having income between 40,000-60,000 per month and 2 were having income more than >60,000 per month indicating most of the respondents surveyed were having income in the range of 20,000 – 60,000 per month.
Customers Likely to go for Green Vehicle

Out of the total respondents surveyed 36 would like to go for a green vehicle as purchasing green vehicle indicates greater concern for society.

No. of Respondents ready to pay for a premium price (+10%)

Out of the respondents surveyed 33% were ready to pay a premium price for a Green Vehicle but about 67% respondents were not ready to pay extra money for a green vehicle which indicates a larger section of the society is ready to go for a green Vehicle but provided they are not required to pay an extra premium on the same categories of the car.

Motivators to purchase a Green Car

Out of the 52 respondents surveyed 24 feel like government subsidies could be a good motivator for opting for a Green Vehicle as compared to various conventional cars, 34 preferred priority lanes for
Green Vehicle as getting parking space in Delhi area is a serious issue, 31 preferred the lower maintenance charge on the Green Cars; Around 86% respondents feels lower prices as a better motivator to switch on from conventional cars to green cars and 17 - 34 respondents finds better information on the products and greater durability as next best motivators to opt for a Green Vehicle.

RECOMMENDATIONS

Based on the analysis, the following recommendations can be implemented:

1. Better communication regarding green vehicles should be given to the customers.
2. As far as possible, government should offer subsidies on green vehicles so that the sale of such products can be boosted.
3. Test Drives should be provided as to increase awareness about the product.
4. The firms should focus on better interiors and features.
5. Lesser price as compared to conventional fuels should be implemented.
6. More privileges should be given to green vehicles such as access to free parking, lower maintenance expenses, more miles per gallons (MPG)

CONCLUSION

Today India is the second most populated country in the world and one of the emerging markets for worldwide auto giants. Automobile industry is the most lucrative industry; due to increase in the disposable income in both rural and urban areas and easy availability of finance there is a rise in the volume of two and four wheelers. Further competition is heating up with host of new players coming in and global brands like Porsche, Bentley, Audi and Ferrari all set to venture in Indian market. So in expectation of gaining a greater market share and higher profits, companies are induced to use environmentally and socially preferred production. Green marketing by automakers effectively drives customers to the showroom and people prefer purchasing a vehicle which has high fuel efficiency and MPG. This research is an attempt to figure out how deeply the green marketing strategy is used in the automobile sector and how consumer decision is altered by such green marketing strategies. A Survey was conducted on 52 respondents in Delhi with the help of e-questionnaire, which states that information was collected by adopting greener techniques. On the basis of analysis it can be concluded that if proper drivers are used then the customer’s interest can be channelized towards the products which are presumed to be environmentally safe.

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