ABSTRACT

The lighting technology has shown a massive growth right from its advent in form of incandescent bulbs. The costs incurred in production vary in nature based on various factors. Some costs are fixed while others are variable. Some costs depend on operational factors or volume factors while some depend on both factors. Scaling down on all the costs factors is not possible due to regulatory factors linked to it. Hence, the study aims into developing the variables like price, place, promotion and product for a better marketing mix which can be helpful for the lighting industry and more to the LED lights. It also focuses on providing a marketing model for the LED industry to increase its awareness, demand and indirectly profits. This will automatically help in saving large amounts of energy on the mother earth. Non-Probability Sampling methods like the Chi-Square test. The only problem with LED’s is that cost of LED’s is higher than the conventional bulbs. It is important for marketers to look for ways to reduce the cost of LED so that the demand increases rapidly. This will also save a large amount of energy on the planet. The study focuses on the consumer perception towards these LED lightings.

High brightness led’s and organic LED are two technologies that will grab attention in the next 2 to 5 years since they cause a lot of energy saving. The architects now have also started focusing on designing buildings such that they utilize sunlight to its maximum possible extent. Such efforts help in saving the energy along with protecting the mother earth. Based on the opinions and information collected from the respondents, this paper attempts to identify and evaluate the pros and cons of GREEN LIGHTING.

Keywords: Light Emitting Diode; Green Lighting

INTRODUCTION

The awareness level of the architects and the electrical consultants in terms of LED lightings is measured. It also tries to focus on improvement in manufacturing technology and the processes so that wastage is reduced and price of products can be reduced.

The distribution and supply chain of the lighting industry is studied properly in term of availability, timely delivery, safety and accessibility and the transportation costs.

The study helps in designing some promotional methods that increases the awareness levels about the LED lights amongst the general public. It studies the consumer perception towards purchasing LED bulbs and the factors that influence the purchase of an LED bulb.

OBJECTIVES

1. To understand the factors affecting the purchase of LED lights
2. To understand the dependence of locality on the purchase of LED lights

Available online on www.abhinavjournal.com
HYPOTHESIS

1. There is a correlation between the type of light used and the payback amount offered by the light.
2. There is a correlation between the locality and the type of light used.

LITERATURE REVIEW

A Prakash (2000) believes that it is important to know whether the consumers view the tag ‘green’ as a motivation to buy the product. If this becomes possible, green revolution can receive an automatic boost and lead to great profits. There are a few exceptions even if the public prefer firms like the ISO 14001 certification which approve green revolution. The best example for this is the trade competition between the EU and US where in the Europeans are reluctant to buy low cost products and the products which are the modified and altered food products from the US.

ArteeAggrawal et al (2010) declares that organizations have to face a difficult responsibility managing their product offering mix such that they can ask for competitive prices and also attract a wide range of new customers while retaining the old ones. Such a task can prove to be a square peg in a round hole if not properly followed.

Arbuthnot and Lingg (1995), carried out an in depth study to compare the attitudes of American and the French towards the environment. The results moved out in favor of the Americans. Americans were found to be more environmentally aware and consistent towards environment safety than the French.

According to Arcury (1990), the knowledge about the environment has a positive and a consistent relation with the attitudes of the consumers towards the environment. Though, the author also stated that this relation was not very firm. After studying the association between the two variables, it was observed that if the environmental knowledge is weak, it may have adverse effects on the policies of the governments.

Henry Assael (2006) studied the U.S. market and infers that there are efforts being taken by the companies to promote environmental control and 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.

Hari Shankar Asthana &BrajBhushan (2007): Chi square test forms one of the important and widely used non-parametric tests. It helps to obtain significance of the data which are in percentages or proportions reducible to frequencies. It examines whether or not, the two variables are significantly independent of each other.

Balderjahn (1988) stated that Demographic, socioeconomic, cultural, personality, and attitudinal variables specify five categories of an environmentally aware consumer. He studied the model which specifies such consumers namely the LISREL (linear structural relations, is a statistical software package used in structural equation modeling) model. The analysis predicted that each category possesses its own group of consumers.

Waste reduction, reuse and recycling were the three waste management parameters studied by Barr (2007). He developed a model to study the above three parameters. It was stated that waste management behavior can be properly predicted through environmental values, situational characteristics, and psychological factors. These predictions lie within the framework of the relationship between intention and behavior.
METHODOLOGY OF THE STUDY

Sources of Data

Primary Sources- Primary data are in the form of “DIRECT MEETINGS WITH ARCHITECTS AND ELECTRICAL CONSULTANTS RELATED TO LIGHTING” to which statistical methods are applied for the purpose of analysis and interpretations.

Secondary Sources- The secondary data mainly consists of data and information collected from records, company websites and also discussion with the management of the organization. Secondary data was also collected from journals, magazines and books.

Sampling Method

It refers how sampling units are selected.

Types of sampling – Non Probability Sampling

Method of Non Probability Sampling

Quota Sampling – This method is viewed as a two-stage restricted judgmental sampling and it is as follows:

Firstly, the relevant control characteristics of the sampling elements (architects & B-School professionals) are identified. The architects who possess the right knowledge about the lightings and LED lightings are treated as a control characteristic.

Secondly, based on the convenience and accessibility of the sample elements, the information has been collected to match their control characteristics.

Sample Size

The sample of respondents for this study consists of two groups (25 architects+ 100 B-school professionals)

Research Area

For Architects: In the state of Maharashtra comprising Thane and Mumbai district.

For B-school Professionals: In the state of Maharashtra from South Mumbai

Tests of Hypothesis

The hypothesis has been tested by using the following statistical tools:

Non Parametric tests- Chi – Square test

Analysis and Interpretation

The following Statistical tools have been used by using SPSS for analyzing and interpreting the data:

Univariate Analysis- Chi-Square Test

Hypothesis 1

Null Hypothesis (H0): There is no association between the type of light used and the payback amount offered by the light.

Alternative Hypothesis(H1): There is a strong association between the type of light used and the payback amount offered by the light.
Table 1. Acceptance level

<table>
<thead>
<tr>
<th>Payback offered</th>
<th>Very Low</th>
<th>Low</th>
<th>Neutral</th>
<th>High</th>
<th>Very High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>2</td>
<td>7</td>
<td>3</td>
<td>23</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Medium</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>47</td>
<td>3</td>
<td>61</td>
</tr>
<tr>
<td>Low</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>10</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>13</td>
<td>7</td>
<td>80</td>
<td>10</td>
<td>125</td>
</tr>
</tbody>
</table>

Source: Primary Data

Table 2. Chi- Square analysis

<table>
<thead>
<tr>
<th>Description</th>
<th>Exact Value</th>
<th>df</th>
<th>Asymp. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi- Square</td>
<td>27.853</td>
<td>12</td>
<td>.007</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>29.324</td>
<td>12</td>
<td>.005</td>
</tr>
<tr>
<td>Linear Association</td>
<td>.776</td>
<td>1</td>
<td>.378</td>
</tr>
<tr>
<td>N</td>
<td>300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary Data

Inference: It is clear that the significance value 0.007 is less than assumed value 0.05. So null hypothesis H0 is rejected. It can be concluded that the type of light used depends on the payback amount offered by it. If the payback amount offered by the light is more, the consumers are more inclined towards buying that light.

Hypothesis 2

Null Hypothesis (H0): There is no association between the locality and the type of light used.

Alternative Hypothesis (H1): There is a strong association between the locality and the type of light used.

Table 3.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Observed</th>
<th>Expected</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>6</td>
<td>30</td>
<td>-24</td>
</tr>
<tr>
<td>Disagree</td>
<td>18</td>
<td>30</td>
<td>-12</td>
</tr>
<tr>
<td>Neutral</td>
<td>12</td>
<td>30</td>
<td>-18</td>
</tr>
<tr>
<td>Agree</td>
<td>75</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>14</td>
<td>30</td>
<td>-16</td>
</tr>
</tbody>
</table>

Source: Primary Data

Table 4.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi- square</td>
<td>111.37</td>
</tr>
<tr>
<td>Df</td>
<td>4</td>
</tr>
<tr>
<td>Asymp. fig</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: Primary Data

Inference: It is clear from the table 5.22 a that the assumed value 0.05 is more than the significance value 0.000. Hence, the null hypothesis H0 is rejected.

FINDING(S) FROM THE EMPIRICAL STUDY

1. The hypothetical study indicates that consumers are ready to accept the type of light which offers a high payback amount. This indicates a clear correlation between the payback amount and the type of light used.
2. From the hypothetical study, it is clear that locality also plays an important role in the type of light used. Different areas are differently educated about the newer type of lighting technologies. More the awareness, more is the number of varieties used.

CONCLUSIONS/RECOMMENDATIONS

1. There is a strong correlation between payback amount and type of light used. LED’s which provide a high payback amount over a period have an upper edge over the conventional lights. If the consumers are convinced about this fact, they can also pay an extra amount for LED purchase.

2. Different areas use different types of lightings. Conventional patterns or older technologies exist in some areas while some areas tend towards a more modern and advanced technologies. If the lighting market makes a move, it can attain a newer target audience. It can be most beneficial if the marketing teams are able to convince the stagnant consumers who are resistant towards a change in the technology

REFERENCES