A STUDY ON CUSTOMER AWARENESS TOWARDS AN ALTERNATIVE SOURCE OF ENERGY – THE SOLAR PRODUCTS

Abstract: The demand of electricity has reached unprecedented height. But it is very difficult to meet the demand. Shortage of power is one of the most common and painstaking problems that everyone in this country confronts frequently. The major drawback of solar energy products is its high cost and space requirement to setup a device. Apart from these drawbacks, the customers must consider the fact that solar energy products are highly beneficial not only for the environment but also for human beings for its unique feature of infinite abundant energy. This rapid evolution in technology and its effect on the growth of the complexity of solar energy are giving rise to both opportunities and challenges from a marketing perspective, deserving research attention. Hence, the researcher makes an effort to study on customer awareness on solar energy.

INTRODUCTION

The Indian economy is growing at a rapid rate and energy shortage is bound to grow into a big hurdle in the upcoming years. Solar power is energy from the sun that is converted into thermal or electrical energy. Solar energy is the cleanest and most abundant renewable energy source available and the United States has some of the richest solar resources in the world. India is endowed with vast solar energy potential. About 5,000 trillion kWh per year energy is incident over India's land area with most parts receiving 4-7 kWh per sq. m per day. ... Solar also provides the ability to generate power on a distributed basis and enables rapid capacity addition with short lead times.

Awareness plays a key role in customer decision making by increasing a potential or current customer’s knowledge about a product, service or business, a healthy economic environment is established in which customers are informed and protected and business are accountable. Increasing awareness, living standards and urbanization has led to increase in the changing of preference. There is a fundamental shift in the usage behaviour of customer from traditional ways to modern ways with respond to the services rendered.

STATEMENT OF THE PROBLEM

Solar power is one of the most promising renewable energy technologies, allowing the generation of electricity from free, inexhaustible sunlight. Many homeowners have already begun adopting solar electricity, and a large-scale power generation facility in the southwest offer solar’s advantages to thousands of customers. But solar still faces a number of hurdles before it can truly replace fossil fuels for power generation for most customers. Cost is the biggest downside most people are going to encounter when considering replacing some or all of their electricity consumption with a solar energy system. The initial cost of purchasing a solar system is fairly high. In many areas of Tamilnadu state, technology was identified as one of the main barriers to the willingness to invest in wind-generated electricity.

METHODOLOGY

The study is analytical in nature. Primary has been collected from the users of solar energy in Erode district. Erode district is famous for Turmeric cultivation and Textile manufacturing. Convenient sampling method was used to collect the data from the 450 customers of Erode district in Tamilnadu. For this purpose, field survey method was employed and questionnaire technique was used by the researcher to collect the pertinent data with the help of well structured questionnaire.

OBJECTIVES OF THE STUDY

i. To find out the awareness level of customers towards solar energy products.

ii. To know the satisfaction level of solar energy product users.

DATA ANALYSIS AND INTERPRETATION

The Chi-Square Test has been applied to find an inter-relationship between Age and awareness of customers on solar energy. Chi-Square as a test of independence enables a researcher to explain whether or not two attributes are associated.
X² as calculated as follows

\[
\text{Chi} – \text{Square} = \frac{\sum (O-E)^2}{E}
\]

With degree of freedom (D.F) = (c-1) (r -1)
Where, O = Observed Frequency
E = Expected Frequency
C = Number of Columns
R = Number of Rows

Table - 1
AGE AND AWARENESS OF CUSTOMERS ON SOLAR ENERGY PRODUCTS

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Age</th>
<th>No. of Respondents</th>
<th>%</th>
<th>Ave rage</th>
<th>Range</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>1</td>
<td>Below 25 years</td>
<td>40</td>
<td>8.9%</td>
<td>70.80</td>
<td>36</td>
<td>104</td>
</tr>
<tr>
<td>2</td>
<td>25-35 years</td>
<td>148</td>
<td>32.9%</td>
<td>76.82</td>
<td>32</td>
<td>110</td>
</tr>
<tr>
<td>3</td>
<td>36-45 years</td>
<td>143</td>
<td>31.8%</td>
<td>69.90</td>
<td>38</td>
<td>104</td>
</tr>
<tr>
<td>4</td>
<td>Above 45 years</td>
<td>119</td>
<td>26.4%</td>
<td>71.29</td>
<td>35</td>
<td>103</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>450</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The sample consist 40 (8.9%) customers belonged to below 25 years age group, 148 (32.9%) customers belonged to 25-35 years age group, 143 (31.8%) customers belonged to 35-45 years age group and 119 (26.4%) customers belonged to above 45 years age group. It is also divulged from the above table that the awareness in utilizing the solar energy products among the customers of below 25 years age group ranged between 36 and 104 with an average of 70.80. The level of awareness possessed by utilizing the solar energy products among the customers of 25 – 35 years age group ranged between 32 and 110 with an average of 76.82. The customers belonging 36 – 45 age category have expressed their awareness on utilizing the solar energy products ranged between 38 and 104 with an average of 69.90. At the outset, the awareness possessed in utilizing the solar energy products among the customers of above 45 years age group ranged between 35 and 103 with an average of 71.23. From the analysis, it is inferred that the customers of 25 – 35 years age group have possessed maximum awareness towards utilizing solar energy products.

Solar power provides cleaner, more sustainable electricity. But few people can afford to mount solar panels on their houses, and few power providers have invested significantly in solar power generation. Solar-powered devices are also great to use during power disruptions. So, to find the degree of association between age of the sample customers and their awareness level possessed in utilizing the solar energy products, a two-way table was prepared and is shown in the following table.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Age</th>
<th>Awareness of Customers on Solar Energy Products</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low (9.6%)</td>
<td>Medium (10.1%)</td>
</tr>
<tr>
<td>1</td>
<td>Below 25 years</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>25-35 years</td>
<td>38 (27.9%)</td>
<td>43 (24.0%)</td>
</tr>
<tr>
<td>3</td>
<td>36-45 years</td>
<td>52 (38.2%)</td>
<td>57 (31.8%)</td>
</tr>
<tr>
<td>4</td>
<td>Above 45 years</td>
<td>33 (24.3%)</td>
<td>61 (34.1%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>136 (100.0%)</td>
<td>179 (100.0%)</td>
</tr>
</tbody>
</table>
It is highlighted from the above table that the percentage of high awareness possessed in utilizing solar energy products was the highest (49.6%) among the customers of 25-35 years age group and the similar was the lowest (6.7%) among the customers of below 25 years age group. The percentage of medium awareness level having in solar energy products was the highest (34.1%) among the customers of above 45 years age group and the same was the lowest (10.1%) among the customers of below 25 years age group. At the outset, the percentage of low level of awareness possessed in utilizing the solar energy products was the highest (38.2%) among the customers of 36-45 years age group and the similar was the lowest (9.6%) among the customers of below 25 years age group.

The relationship between the age of the sample customers and their awareness level possessed in utilizing the solar energy products with the help of framing following hypothesis and tested with the help of chi-square test. The detailed results of the test are shown in the following table.

**HYPOTHESIS**

Null Hypothesis (H$_0$) : No significant relationship between age of the customers and their awareness possessed in utilizing the solar energy products.

Alternative Hypothesis (H$_1$) : A significant relationship between age of the customers and their awareness possessed in utilizing the solar energy products.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Calculated $\chi^2$ Value</th>
<th>Table value</th>
<th>D.F</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>16.812</td>
<td>13.277</td>
<td>6</td>
<td>Significant at 1% level</td>
</tr>
</tbody>
</table>

It is understood from the above table that the null hypothesis (H$_0$) is rejected and the alternative hypothesis (H$_1$) is accepted. Because the calculated chi-square value is greater than the table value and the result is significant at 1% level. Hence, the hypothesis, “age of the sample customers and their awareness level possessed in utilizing the solar energy products” are associated, holds good. Finally, it is concluded that there is a close relationship between age of the customers and their awareness level possessed in utilizing the solar energy products.

**FINDINGS**

Renewable energy sources (RES) have potentials to address goals of climate change mitigation at the global level. Generally, young people like to adopt solar energy products. Hence, age-wise analysis inferred that the customers of 25 – 35 years age group have possessed maximum awareness towards utilizing solar energy products. Chi-square test also proved that there is a significant relationship between age of the customers and their awareness possessed in utilizing the solar energy products.

**SUGGESTIONS**

Based on the above findings the researcher suggested that inviting these influencers into niche is a great way to increase products awareness and hopefully drive sales. When influencers have an established audience that knows and trusts them, once they mention solar energy products and discuss about the benefits in their content, those mentions will expand the reach and increase people’s awareness of solar energy products.

**CONCLUSION**

The solar energy sector is growing, big time. More and more consumers are switching to solar. At the same time, The solar industry will need stronger support from consumers to pressure policy makers on subsidies, supporting policies, land use and others because solar is still a nascent industry in India. Much effort has been showered by government departments and other agencies over the past decade in the form of launching various schemes at school, city, and village block levels, but most these have come at abstract timings. Also, the advertising campaigns have been too heavy upon the target audiences leaving them half-baked.

**REFERENCES**

**BOOKS**
JOURNALS