A Study on Customer’s Attitude towards Solar Energy Devices

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Abstract

In India, Solar energy devices are launched mainly with the objective to create environmental awareness of mass power consumption and the need to conserve power using Solar energy devices. The major drawback of Solar energy devices is the high cost and high space requirement to setup a device. Apart from these drawbacks, the customers must consider the fact that Solar energy devices are highly beneficial not only for the environment but also for human beings for its unique feature of infinite abundant energy. Though most people still prefer the usage of electrical devices, the attitude of the customers is steadily changing owing to the current environmental hazards caused by the former. Hence, the study examines about the customers attitude, preferences and their views and criticisms about the features and usage of Solar energy devices and their evolution in the market trend.

Key Words: Solar, Solar energy, Solar products and Energy conservation.

Introduction

Solar energy, radiant light and heat from the sun, is harnessed using a range of ever-evolving technologies such as solar heating, solar photovoltaic’s, solar thermal electricity, solar architecture and artificial photosynthesis. A great amount of energy can be harnessed from the sun. The amount of energy reaching the Earth Surface every day from the Sun is far greater than the energy that of man needs for the foreseeable future. The key to using this vast source of energy is developing effective methods for collecting and storing this energy. Once this is done solar energy can contribute significantly to satisfying man’s every growing energy requirements. The solar energy received has a range of frequencies and wavelengths from lower frequency (long wavelength) of infrared to the higher frequency radiation of ultraviolet. It is this higher frequency radiation, visible light and ultraviolet light which can be harnessed to produced an electrical current and can be used for different gadgets for industry and domestic usage.

With the increase of Literacy and Social Responsibility in people, the Solar Energy Devices has increasing attention in the recent scenario. There has been many researches being conducted with the help of Government funds and many industries have started manufacturing different Solar energy devices with the view of Electricity conservation and Eco-Friendly environment. Manufacturers such as Tata, Luminus, Goodsun and many other popular companies have come forward as the market pioneers in making of best quality Solar energy devices for both residential and industrial purposes there by taking the infinite Solar energy into Commercial terms too.

Review of literature

Kevin Bullis (2013) in his study “Why solar companies should fail” focuses on the solar panel industry and the need for a number of solar manufacturers to go into bankruptcy. It states that the glut of solar panels is due partly to significant government-backed investments in solar panel factories in China, which has resulted in a 60 percent drop in the price of solar panels from 2011 to 2013. It comments that solar manufacturers have been unable to make profits or invest in new equipment to reduce costs and improve product performance.”
Ramesh Khanna (2010) made his study on “Solar panel powers two-stage lead acid battery charger” revealed that, the working of a solar panel powering two-stage lead-acid battery charger. A solar-powered lead-acid battery charger can ensure that the battery remains fully charged over a wide temperature range. Solar or photovoltaic panels comprise multiple solar cells that connect in series. A solar cell has limited current generating and-carrying capability, which results in limited current-carrying ability for the entire solar panel.”

Gene R. Heinze and Fry (1986) in their study “The economics of home solar water heating and the role of solar tax credits” states that, the finances of home solar water heating, using flat plate collectors and a conventional water heater for backup, for 69 cities in 46 states. Natural gas is much cheaper than electric resistance heating in most areas, yet half the homes built in 1978-83 have electric heat, while only 40% use gas. Gas may be unavailable for new homes in many areas. So in this study solar/electric water heaters are compared to electric ones and solar/gas water heaters are compared to gas ones, using the cost difference between a solar/backup system and a conventional water heater.”

Statement of Problem
Throughout history, humans have discovered ways to take various energy sources and use them to their advantage. From the simple task of burning wood for heat, to the monstrous amount of power created from nuclear energy, we have been determined to find the most efficient and economical ways to make our lives easier. In the present scenario, the world is dominated by the Electrical energy and the electronic devices. The technological improvement in this field is vast and it plays a vital role in day to day lives of people.

Solar energy being a renewable energy available in abundance as the natural source sun emits photovoltaic energy in the sun rays. With the invention of solar cells/solar panels used to grasp solar energy and converts into electrical energy for usage. Many companies have come into the markets which are now fast growing in the commercial sales of solar energy based devices. In this aspect, it becomes necessary to find what impact this Solar Energy Devices has made the consumer and the study on customer’s attitude towards solar energy devices is identified as the problem of the study.

Research Objectives
• To study the awareness of the Customers towards Solar Energy Devices available in the Market.
• To Study about the Customers Ideas, Preferences and Attitude towards Solar Energy Devices.
• To Study about the Customer’s Satisfaction towards Solar Energy Devices.
• To know the reasons for choosing Solar Energy Devices over Electrical Devices, even though Electrical Devices are comparatively cheaper.
• To Study the Customer opinion regarding CRM (Customer Relationship Management) Practices of Manufacturer’s of Solar Energy Devices.

Methodology

Collection of Data
The research is based on the primary data collected from the respondents through the form of questionnaire and secondary data taken from magazines, journals, books and various websites.
Tools Used for Analysis

- Percentage Analysis
- Graphical Representation
- Chi-square test
- Rank Analysis
- Weighted Average Analysis

Limitations

1. The universe being large, the study was restricted to residents living in Coimbatore city alone.
2. The result may not be very accurate as its respondents are restricted to only 100 customers.

Findings and Suggestions

Findings

The following are general findings from the study

- Majority of the respondents are Females, Married and Live in Nuclear Families.
- Most of the respondents are Employed/
- Most of the respondents have their Monthly income between Rs.10000 – 25000.
- Most of the respondents have More than Three members in their family.
- Most of the respondents have their Monthly Electricity bill between Rs.1000 – 2000.

The following findings are about the awareness of the respondents and sources of Solar energy devices

- Majority (100%) of the respondents are Aware about the Solar Energy Devices.
- Majority (54.68%) of the respondents are aware about the Solar Energy Devices through Advertisements.
- Most (30.16%) of the respondents prefer Television, Radio, Internet, Hoardings and Newspapers as the Media of advertisement.
- Majority (54%) of the respondents think the Advertisements of the Solar Energy Devices are Informative.
- Most (21.97%) of the respondents are aware about the Solar Water Heaters.
- Most (36%) of the respondents think the Cost incurred on buying a Solar Energy Device is between Rs.50000 – Rs.100000.
- Most (29.18%) of the respondents are Aware about the Brand V-Guard.

The following are findings of the Rank analysis

- Respondents buy Solar Energy Devices first due to its Durability and they prefer After sales service as the least reason for buying the Solar Energy Devices.
- Respondents reason for Switching over from Electrical devices to Solar energy devices Firstly due to its Good Quality and they prefer Status symbol as the Least of the reason for switching over from Electrical devices to Solar energy devices.

The following are the findings about Satisfaction level of respondents towards Solar energy devices

- Most of the respondents are Satisfied with Solar Water Heaters, Solar Batteries (Chargers), Solar Inverters.
- Most of the respondents are Dis-Satisfied with Solar Air Conditioners.
- Majority of the respondents are Highly Satisfied with Solar LED/CFL Lights, Solar Panels.

The following are the other characteristic findings of the study

- Most (38%) of the respondents think the Best Feature of the Solar Energy Devices as Power Consumption.
- Most (24.3%) of the respondents Mostly Prefer to buy Solar Water Heaters.
- Most (43%) of the respondents think the Installation charges of Solar Energy Devices are Very High.
• Majority (69%) of the respondents think Solar Energy Devices are better than Electrical Devices.

• Most (42%) of the respondents think the Distinguishing Factor of Solar Energy Devices over Electrical devices is Infinite Solar Energy.

• Most (37%) of the respondents think the Problem of Solar Energy Devices is Climatic Variation Troubles.

The following are the findings about Weighted average method analysis

• Majority of the respondents are Highly Satisfied with Solar Water Heaters.

The following are the findings of the Chi-square tests

• There is a Significant relationship between the Installation charges of the Solar energy devices and Occupational status of the respondents.

• There is No Significant relationship between Installation charges of the Solar energy devices and Other Personal factors of the respondents.

• There is a Significant relationship between Consumer’s opinion on whether Solar energy devices are better than electrical devices and Gender and Monthly Income of the respondents.

• There is No Significant relationship between Consumer’s opinion on whether Solar energy devices are better than electrical devices and Other Personal Factors.

• There is a Significant relationship between the Cost incurred on buying the Solar energy devices and Gender and Electricity bill of the respondents.

• There is No Significant relationship between Costs incurred on buying the Solar energy devices and Other Personal factors of the respondents.

Suggestions

Price:
The price of the Solar Energy Devices may be considerably reduced, so that the people from low income groups can also afford to buy the Solar Energy Devices.

Size:
The Solar Energy Devices can also be made available in small size, as they consume a large space for setup.

Awareness:
There should be awareness about the availability of the Solar Energy Devices among the people hailing from different localities, especially Rural areas and people not with proper education who doesn’t have proper awareness about use of solar energy.

Installation charges:
The Installation charges of the Solar Energy Devices must be made lesser so that the customers need not worry about high Installation charges adding onto the original price of the devices.

Demonstration and exhibits:
Free demonstrations and Exhibit stalls can be given for the introduction of the Solar Energy Devices, so that it increases the popularity of the products in the market easily.

Varieties in products:
Many companies producing Solar Energy Devices for commonly used devices like Water heaters, Chargers, invertors etc., can also make a step in producing Solar energized devices of Televisions,
Mobiles, Computers etc., which are also commonly used by people in their day to day lives, so that they can widen their place in the retail market of Solar Energy Devices.

**Suitability:**

The Solar Energy Devices should be made suitable for all climates and the power storage of the solar cells needs to be increased more so they last longer.

**Government subsidies:**

People must be made aware of the subsidies provided by the government on buying a Solar Energy Device and also the Government should take more steps in promoting Solar Energy Devices in other ways such as reducing tax etc.,

**Independent existence:**

The Solar Energy Devices should exist fully independent without having an alternate power of electricity and technology must be improved so that Solar Energy Devices do not depend upon Electricity anymore.

**Conclusion:**

In all the business activities, it is the consumer who decides its existence in the market. Therefore, consumer is the “King of the Market”. This statement did not go different for Solar energy devices also. From this study, it can be concluded that Customer’s attitude towards Solar energy devices is definitely changing due to many valid reasons and also there has been a significant increase in the awareness and benefits of using Solar energized devices over electrical devices. In this fast moving world, the consumption of energy has been increasing in abundant amount and the customers have become more conscious about saving power and switching on to other sources of power like solar energy for their consumption.

Therefore, in order to meet the customers need the business sectors should come with innovative yet cost-benefit and new techniques in the solar market as it not only attracts more number of customers and keeps the business intact, but also increases the consumers responsibility towards the environment and eco-friendliness for securing mother earth. Thus, it can be concluded that the Customer’s attitude towards solar energy devices are influenced by many factors but the major factors are Changing of the Trends, Educational qualification of the customers and Standard of living of the people and this change in the attitude of the customers looks appreciative.

**References**

4. Energy Future – Magazine
5. Indian Journal of Marketing – Magazine
6. www.solarenergy.com
7. www.powersourcesolar.com