



## FACTORS INFLUENCING THE CUSTOMERS TO PREFER SOLAR WATER HEATER : A STUDY IN ERODE DISTRICT OF TAMIL NADU

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### ABSTRACT

The existing solar water heating systems are studied with their applications. Now-a-days, plenty of water heater are being used for domestic, commercial and industrial purposes. The Primary Objective of this study is to identify the factors influencing the customers to prefer solar water heater in Erode District. Various resources i.e., coal, diesel, gas, etc. are used to heat water sometimes for steam production. Solar energy is the main alternative to replace the conventional energy sources. The solar thermal water heating system is the technology to harness the plenty amount of free available solar thermal energy. For this paper, have been collected from 120 customers of the solar water heater. Such collected data have been analyzed with the help of MS Excel and SPSS 22.0. Kendall's 'W' Test and Henry Garrett Ranking Technique have been used for this paper. It is found that Conservative energy is the main factors to influence the customers to prefer solar water heater.

**KEYWORDS :** Solar water heater-Factors-conservative energy

### INTRODUCTION

Marketing plays a vital role in the growth and development of a country irrespective of size. Population and concept are so interlinked that, in the absence of one, another virtually cannot survive. Marketing helps to maintain economic stability and provide rapid development in the underdeveloped or developing countries. Solar Energy is the Energy that is produced by the Sun in the form of heat and light.

Solar energy is the most abundantly available renewable source of energy. Solar energy travels at a speed of 1,86,000 miles per second, and the speed light. The Sun is a big ball made up mostly of hydrogen and helium gas. In this rapidly growing world of electronics and technology, the demand of energy and electricity has grown rapidly. However, there are limited sources to produce non-renewable energy and here comes the demand for renewable solar energy. Sun is a part of solar system and it completes its rotation around the earth in 365 days. When the sunrays travel along way from sky to earth they carry with them the heat and light of sun. Our earth is capable of absorbing this heat. 30% of the solar energy is sent back while the remaining 70% is consumed by the oceans, rivers, land and clouds. The Sun has produced energy for billions of years.

Generally, people are giving more importance to the suggestions and opinion of their friends, relatives and brand users. Against this background, this paper is an attempt to identify the factors influencing the customers to prefer the solar water heater.

### Review Of Previous Studies

In any study, the review of previous studies is considered as an important for getting and to identify the unexplored part of the field of study under consideration. In this regard, a review of the studies relating to the present study has been undertaken and presented the following section

Arshiya Fathima M.S (2022), made a study to identify the factors influencing the customers to prefer solar energy products. For which, the required primary data have been collected from 351 sample customers. The required data have been analyzed with structural equation factor analysis see found that Attitude, perceived behavioral control and energy are important factors in selection of solar energy products.

Sunil Atulkar (2022), conducted a study on factors influencing

the customers to buy solar energy products. For which, he collected data from 640 sample customers by using multi-stage random sampling technique. Collected primary data have been analyzed by using statistical tools such as T-test, mode, mean, ratio analysis, percentage and transmuted rank score. He concluded that conservative energy is main factor to influencing the customers to prefer solar water heater product. Amanpreetkaur (2023), conducted a study in Delhi. For which, they have collected data from 1000 sample customers by using summated rating scale technique. Such collected data have been analyzed with various statistical tools like cronbach Alpha and chi-square test. Furthermore, behavioral intentions were significantly impacted by three constructs of TPB, which signifies that environmentally conscious customer have a favorable attitude toward solar NMS adoption. Additionally, the role of government initiatives is essential in prompting solar Nms.

Idrees waris (2023), made a study on factors influencing the customers to prefer solar water heater. For which, they have collected required primary data from 220 sample customers by using Random sampling technique. Such collected data have been analyzed with statistical tools like percentage, mean and standard deviation. However, the positive relationship between green trust and products' functional value was found insignificant.

Ansari Sarwar Alam (2023), examined a study on factors influencing the customers to prefer solar energy products. For which, they have collected required primary data from 500 sample customers by using convenient sampling technique. Such collected data have been analyzed with various statistical tools like mean, median, mode, F-test and chi-square test. The point of view that solar products are important, concerning society, environment and sustainability and thus with a stand point belief that the awareness, as well as the perception of consumers, should be changed. With this understanding, this study aims to access and know the mindset of Indian consumers regarding solar products. Attitude, subjective norm, price and promotion variables impact consumers' purchase intention.

On the basis of above review, it is cleared that the present study is differ from other studies.

### Statement Of The Problem

It is known fact that, solar water heater is being used by various people for various reason. At the same time,

Practically consumers are suffering various problems. Particularly, In the aspect of factors influencing the customers to prefer solar water heater. Hence, this study has been under taken to find out the factors influencing the customers to prefer solar water heater. By keeping all these in mind, this paper is an attempt to find out answer to the following research question.

- What are the factors influencing the customers to prefer solar water heater?

**Objective Of The Study**

To identify the factors influencing the customers to prefer solar water heater product.

**Research Methodology**

The required Primary data have been collected by using convenient sampling method. Further, The Present study has been undertaken in Erode district of Tamil Nadu. It is known fact that, Erode district is the one of the most important district of Tamil nadu. Hence, this District has been selected purposively. In this district there are 10 Taluks. (Erode, Modakkurichi, Kodumudi, Perundurai, Bhavani, Anthiur, Gobichettipalayam, Sathyamangalam, Thalavadi and Nambiur). Of which Gobichettipalayam Taluk has been selected. From this Taluk, 120 sample customers have been approached to collect the Primary data with a well-structured Interview Schedule by using Snowball Technique.

**Analysis And Discussion**

Factors influencing the customers to prefer solar water heater: Kendall's Co-efficient Of Concordance

To identify the determinants to prefer the Solar water heater. Finally, 10 determinants have been examined with the help of Kendall's Co-efficient of Concordance ('w') test. Findings are shown in Table 1.

**Table 1 Factors Influencing The Customers To Prefer Solar Water Heater: Kendall's Co-efficient Of Concordance ('w') Test.**

FACTORS	TOTAL SCORE	MEAN SCORE	RANK	KENDALL'S 'W'
Cheap installation	3678	30.65	6	0.218
Economy	3159	26.32	3	
Low maintenance	4449	37.08	7	
Low carbon footprint	5355	44.63	10	
Conservative Energy	2480	20.67	1	
Better Services	4627	38.56	8	
Government subsidy	3324	27.7	4	
Convenient	2657	22.14	2	
Warranty	5073	42.28	9	
Cost effectiveness	3663	30.53	5	

Table 1 shows that the determinants to prefer the solar water heater. The Kendall's Co-efficient of concordance ('W') test is calculated for the above determinant which is found to be 0.218. It is lesser than 0.5. It shows that there is less similarity among the respondents in assigning the ranks to the determinants to prefer the solar water heater. Looking at the mean ranks, it is understood that the highest preference has been given to Conservative energy (lower the rank and higher the priority) constituting the mean rank 20.67 and the lowest preference is given to Low carbon foot print the mean rank is 44.63.

**Table 2 Factors Influencing The Customers To Prefer Solar Water Heater: Garrett's Ranking Technique**

Factors	TOTAL SCORE	MEAN SCORE	RANK
Cheap installation	3564	29.70	6
Economy	3876	32.30	3

Low maintenance	3099	25.82	7
Low carbon footprint	2431	20.25	10
Conservative Energy	4366	36.38	1
Better Services	3058	25.48	8
Government subsidy	3749	31.24	4
Convenient	4206	35.05	2
Warranty	2710	22.58	9
Cost effectiveness	3586	29.88	5

Garrett's Ranking Technique has been applied to decide the important factors influencing the customers of solar water heater. Accordingly Table 2 has been prepared

It is cleared from Table 2 that the sample customers are giving more importance to the factor " Conservative Energy" (36.38) followed by "Convenient" (35.05) and "Economy" (32.30).

**CONCLUSION AND SUGGESTION**

In this paper, while examine the determinants to identify the factors influencing the customers to prefer solar water heater, it is found that Conservative energy has been ranked as first by the customers of solar water heater products. This has been identify by using Kendall's Coefficient of concordance('W') test and Garret Ranking Technique. Hence, it is suggested that the government and solar product companies has should take all possible efforts to identify the customers to prefer solar water heater product.

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