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A STUDY ON AWARENESS AND ADOPTION OF SOLAR HOME SYSTEM IN URAN AREA

Mansi Mahesh Mhatre[1], Divya Mahadule[2]
[1]*Student, Rajeev Gandhi College of Management Studies, Navi Mumbai*
[2]*Assistant Professor, Rajeev Gandhi College of Management Studies, Navi Mumbai*

ABSTRACT
This study explores the awareness and adoption of solar home systems (SHS) in Uran, focusing on consumer decisions, perceived benefits, and barriers like cost, technical knowledge, and accessibility. Using surveys and interviews with residents, vendors, and policymakers, it highlights the role of government policies and financial incentives. Findings aim to boost renewable energy adoption through better outreach, subsidies, and solutions to technical issues, supporting sustainable living in residential areas.

KEYWORDS: *Solar Home Systems, Renewable Energy, Awareness, Adoption, Sustainable Living.*

INTRODUCTION

The increasing global demand for **sustainable** and **renewable energy** solutions has boosted the adoption of **Solar Home Systems (SHS)**, offering an eco-friendly alternative to traditional electricity sources. SHS, composed of **photovoltaic (PV) panels**, **batteries**, **inverters**, and **controllers**, provide reliable, independent power, especially in areas with unstable grid connections. Governments and organizations have promoted solar energy through **subsidies** and **awareness campaigns**, yet adoption remains inconsistent due to challenges like **high costs**, **lack of technical knowledge**, and **limited financing**.

This study focuses on the **Uran** region, where rapid urbanization has led to rising **energy demands** and **environmental concerns**. It aims to assess the **awareness**, **willingness to invest**, and **factors influencing** the adoption of SHS, including financial considerations and the impact of **policy interventions**. Additionally, the study seeks to identify **barriers** and propose strategies to enhance **accessibility**, **affordability**, and **public engagement**. The findings will help **policymakers**, **energy providers**, and **communities** promote renewable energy solutions, contributing to **sustainable development**, **energy efficiency**, and **environmental conservation**.

LITERATURE REVIEW

Rebane & Barham (2011) identified limited public awareness as a major barrier to SHS adoption in rural Nicaragua, stressing the importance of educational and promotional efforts.

Urpelainen & Yoon (2015) found that higher income, education, and younger age correlate with greater SHS awareness in rural Uttar Pradesh, India, suggesting the need for awareness campaigns and financial support.

Fauzi & Ismail (2024) reported that while awareness in Malaysia was high, financial and regulatory challenges limited adoption, recommending enhanced public awareness and financial accessibility.

Parsad, Mittal, & Krishnankutty (2020) examined rooftop PV adoption in Kerala, India, identifying economic, policy, and environmental factors as crucial drivers, with targeted incentives recommended.

Maqsoom et al. (2024) emphasized the socio-psychological and economic factors affecting SHS adoption in Pakistan, highlighting the role of awareness campaigns and financial incentives in promoting solar energy.

OBJECTIVES OF THE STUDY

- To study the awareness and factors influencing the adoption of solar home system in Uran
- To study the role of government policies and subsidiaries in promoting solar home systems
- To study the effectiveness of awareness campaign and programs in increasing adoption rates

RESEARCH METHODOLOGY

This research adopts a **descriptive design** to study the **awareness and adoption of Solar Home Systems (SHS)** in the Uran region. **Primary data** was gathered through structured **Google Forms surveys**, while **secondary data** was sourced from journals, government reports, and industry publications. A **convenience sampling method** was used to collect responses from 80 households, representing various income groups and energy usage patterns.
Data was analyzed using basic statistical tools and visualized through **graphs** to highlight key trends. To ensure academic integrity, the research document was verified using **Plagiarism Checker X** and **Grammarly** for plagiarism and language accuracy. Ethical practices were maintained by securing informed consent and ensuring participant confidentiality.

However, the study faces limitations such as a **restricted sample size**, **geographical focus on Uran**, **respondent bias**, and reliance on **self-reported data**. Additionally, changing government policies and limited financial analysis could influence the generalizability of findings.

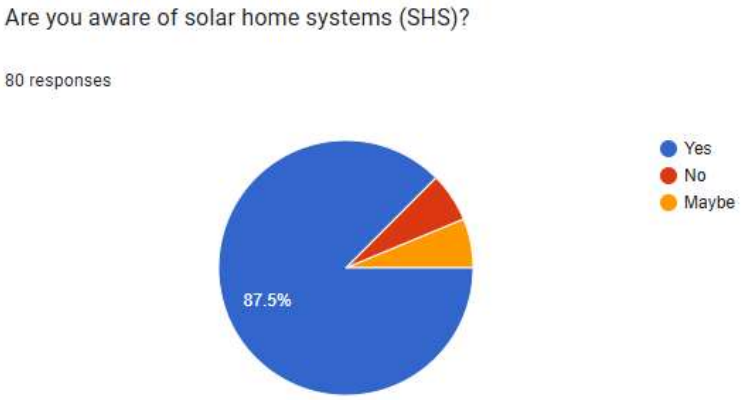
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DATA ANALYSIS & INTERPRETATION

Question 1

Are you aware of solar home systems (SHS)?

Data Analysis



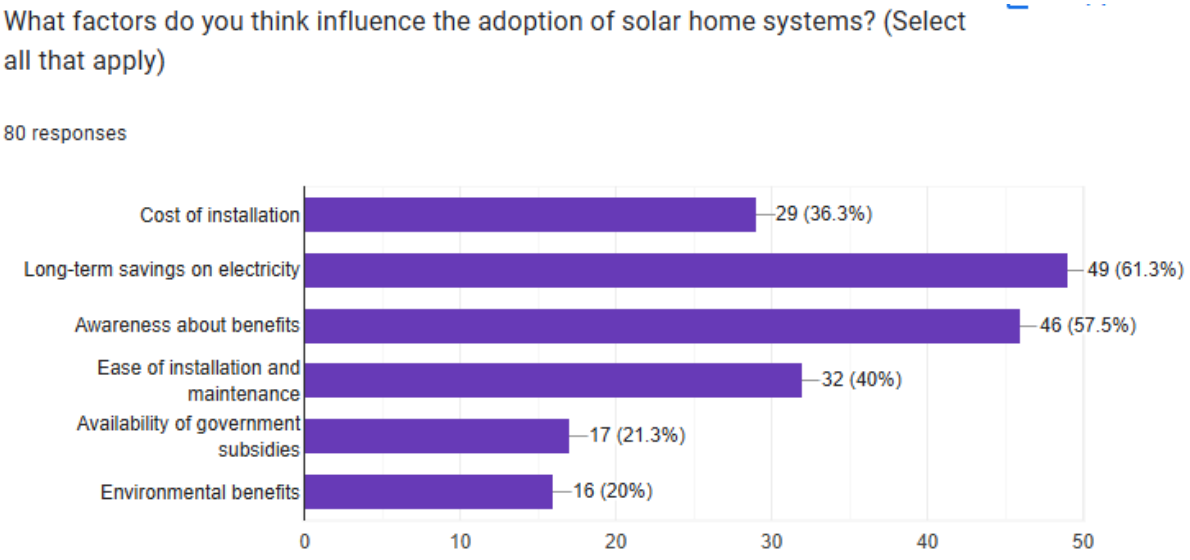
Out of 80 survey responses, **87.5%** of participants were aware of **Solar Home Systems (SHS)**. About **6%** were unaware, and **6.5%** were uncertain ("Maybe") regarding SHS awareness.

Data Interpretation

The high awareness (87.5%) shows effective outreach in Uran, possibly due to government programs and local campaigns. However, the small percentage of unaware and uncertain respondents indicates a need for further awareness initiatives to promote informed SHS adoption.

Question 2

What factors do you think influence the adoption of solar home systems? Data Analysis



From 80 responses, **long-term electricity savings (61.3%)** and **awareness of benefits (57.5%)** were the top factors influencing SHS adoption. **Ease of installation (40%)** and **installation cost (36.3%)** were also significant, while **government subsidies (21.3%)** and **environmental benefits (20%)** were less influential.

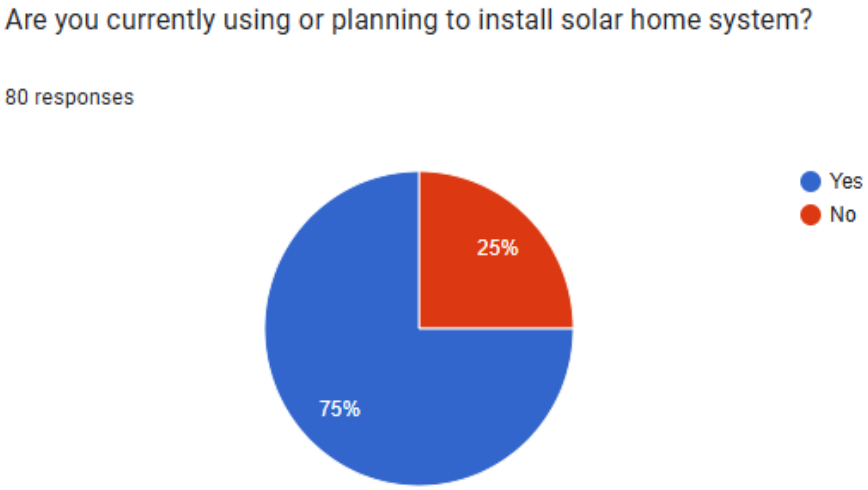
Data Interpretation

Financial savings and awareness are the primary drivers for SHS adoption. High concern over installation cost shows affordability challenges, while ease of use matters to many. Lower emphasis on subsidies and environmental benefits indicates that economic factors dominate consumer decisions.

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Question 3

Are you currently using or planning to install solar home system?



Data Analysis

Among 80 respondents, **75%** are currently using or planning to install a Solar Home System (SHS), while **25%** do not intend to adopt one, showing strong interest in solar energy.

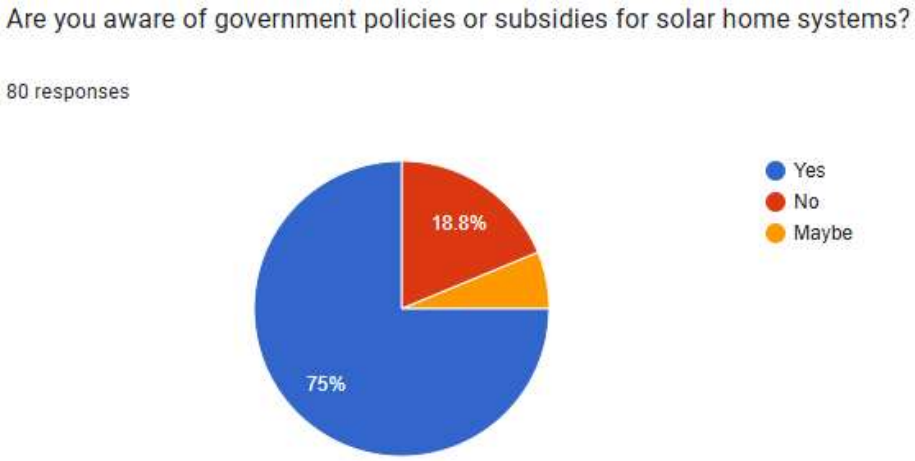
Data Interpretation

The high adoption intent reflects rising awareness and interest in SHS, likely driven by cost concerns and incentives. The 25% reluctance points to barriers like cost, trust, or lack of information, highlighting the need for better outreach and financial support strategies.

Question 4

Are you aware of government policies or subsidies for solar home systems?

Data Analysis



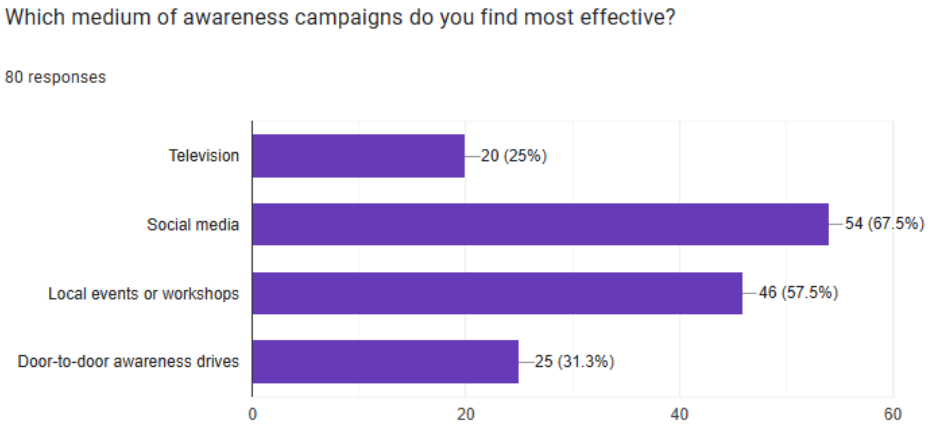
Out of 80 respondents, **75%** are aware of government policies or subsidies for Solar Home Systems, **18.8%** are unaware, and **6.2%** are uncertain.

Data Interpretation

The high awareness (75%) shows that government initiatives are reaching many, likely through campaigns and social media. However, the **18.8%** unaware group points to an information gap, suggesting the need for more targeted outreach to ensure broader access to subsidies and incentives

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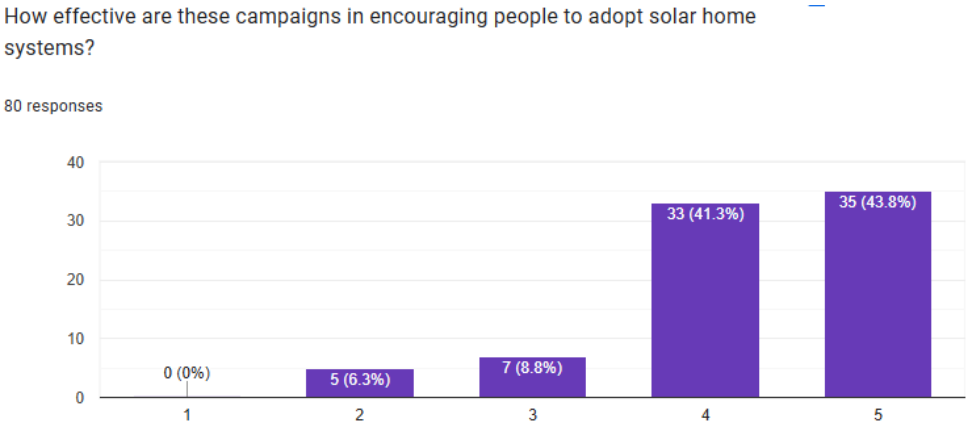
Question 5
Which medium of awareness campaigns do you find most effective?



Data Analysis
From the survey, **67.5%** (54 respondents) prefer social media for awareness, followed by **57.5%** (46 respondents) choosing local events/workshops. **31.3%** (25 respondents) favor door-to-door drives, while **25%** (20 respondents) select television.

Data Interpretation
Social media is the most effective tool for awareness due to its wide reach and interactive nature. Local events/workshops are also valuable for direct engagement. The low preference for television reflects a shift toward digital platforms, while door-to-door drives are less favored due to scalability issues.

Question 6
How effective are these campaigns in encouraging people to adopt solar home systems?



Data Analysis
The survey shows that **85.1%** of respondents rated solar awareness campaigns as highly effective, with **43.8%** rating them as 5 (most effective) and **41.3%** rating them as 4. **8.8%** rated them as 3, and **6.3%** as 2, with no one rating them as 1.

Data Interpretation
The high ratings (4 and 5) indicate that awareness campaigns are effective in influencing adoption decisions. However, the minority rating them lower (2 or 3) suggests room for improvement, possibly through more personalized or clearer messaging to address remaining doubts

FINDINGS

1. **High Interest in Solar**: 75% of respondents are using or planning to install solar home systems.
2. **Awareness of Government Policies**: 75% are aware of solar-related subsidies and policies.
3. **Primary Benefits**: Reduced electricity bills (68.8%) and improved lighting (51.2%) were the top benefits.
4. **Effective Awareness Channels**: Social media (67.5%) and local events/workshops (57.5%) were most effective.
5. **Campaign Effectiveness**: 85.1% rated awareness campaigns as highly effective.

CONCLUSION

The study on solar home systems (SHS) in Uran reveals strong interest in solar energy, with 75% of respondents either using or planning to adopt SHS. Awareness of government subsidies is also high at 75%, though only 35% have used them, suggesting barriers in accessing support.

The main motivations for adopting SHS are reduced electricity bills (68.8%), improved lighting (51.2%), and increased energy availability (37.5%). Social media (67.5%) and local events (57.5%) are the most effective awareness channels, while traditional methods like television and door-to-door drives are less impactful.

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The study shows that awareness campaigns are effective, with 85.1% of respondents rating them highly. However, there is a call for increased government support and simpler subsidy processes to further boost adoption. Overall, SHS have strong potential to improve energy security, but financial accessibility and streamlined policies are key to increasing adoption.

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