



# A STUDY ON THE ANALYSIS OF POST-PURCHASE EXPERIENCE USING POWER BI WITH REFERENCE TO SOLSTROM ENERGY SOLUTION PVT LTD

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**Abstract:** The transition to renewable energy increased the necessity of the organizations to improve customer satisfaction and their service quality, particularly in solar energy industry. This paper provides an analysis of the post-purchase customer experience in Solstrom Energy Solutions based on a mathematical evaluation of customer experience. The 102 customers were the sample population who participated via a structured questionnaire to gather primary data on product performance, quality of installations, transparency in communication and after sales services which are critical drivers of long-term satisfaction to the adoption of sustainable energy. Results have shown that solar system effectiveness and parts dependability were rated highly on their satisfaction ratings, and this validates high technical efficacy. The quality of installation and professionalism of service were rated positively, and this aspect added to the trust. The dashboard helped to process raw feedback to meaningful indicators that allowed making decisions faster, thereby facilitating sustainable service delivery. The paper concludes that by integrating business analytics, the strategies can be made much more customer-centric, more willing to implement renewable energy solutions, and make long-term sustainability objectives.

**Keywords:** Solar Energy Systems, Data-Driven Decision Making, Sustainable Service Practices, Customer Feedback Analysis.

## 1.INTRODUCTION

The entire energy industry in the world is turning towards renewable sources at a rapid rate and solar energy has been noted as a source in which it is reliable, cheap and highly available. The solar sector is developing rapidly in India as a result of the increased environmental awareness and the government stimulus, which makes the competition between companies increase. Here, the customer satisfaction, quality of the services and data-driven decision making are the main points of success in the long-term perspective. Solstrom Energy Solutions is a solar distributor and service giver that emphasizes on providing quality product and good after sales support, maintenance, and customer care. Knowledge about customer needs and after sales experiences is vital as happy clients advertise the brand whereas dissatisfaction may adversely affect the brand image and revenue. This is entitled A Study on Analysis of Post Purchase Experience using Power BI with Reference to Solstrom Energy Solutions, which will focus on customer feedback analysis in order to assess the levels of customer satisfaction and determine the major factors that impact customer experience. The data was collected by way of questionnaires and follow-ups and analyzed using business analytics tools. The paper identifies the potential to use business analytics to better the customer experience, service strategies, and assist in the making of better decisions in the competitive solar energy sector.

### 1.1 OBJECTIVE'S OF THE STUDY

#### Primary objective

- To analyze the level of customer satisfaction regarding post-purchase solar system experience.

#### Secondary objectives

- To determine the perception of the customer on the product performance and the quality of the installation.
- To measure communication and after sales service effectiveness.
- To detect discrepancies in customer expectations and the way they received real service.



- To offer evidence-based recommendations to enhance the overall post purchase experience.

## 1.2 REVIEW OF LITERATURE

Anuj Bhowmick & Seetharaman (2023), presented at the 7th International Conference on Virtual and Augmented Reality Simulations, provided a systematic review showing how product features, service value-chain and consumer behaviour affect customer satisfaction via product quality. Though not solar-specific, the evidence is generalizable and provides theoretical support for your variable “Product Performance”.

Suchánek et al. (2015), Review of Economic Perspectives, explored the influence of product quality on customer satisfaction and company performance finding positive correlation between product quality and satisfaction though results varied. Paradigm This supports the inclusion of product performance in your model, as customers’ perception of how well the product delivers affects their satisfaction.

A 2019 study in IJSART investigated the effects of installation (alongside delivery and warranty) on customer satisfaction and concluded that installation is one of the strong factors influencing satisfaction across industries. Though not solar-specific, the cross-industry result strengthens the justification for your independent variable “Installation Quality”.

A case study article by SolarInsure (2023) on best practices for solar installers stresses that “setting clear expectations about the installation process” and “being upfront about timeline and performance” can avoid customer disappointment and improve satisfaction. This industry specific document emphasizes the link between installation quality (how well the job is done) and post-purchase satisfaction in solar.

According to the 2025 ZipDo Education solar industry statistics report, 78% of solar customers say clear communication influences their satisfaction levels, and 55% feel that transparency during the sales process influences satisfaction. This strongly supports your independent variable “Communication & Transparency” in the solar domain.

According to Marketing Dive (2018), 53 percent of the consumers have higher chances of buying a brand that is transparent on social media, and 86 percent indicate that they would transfer to a competitor in case the brand does not disclose itself. Although outside solar, it illustrates the role of transparency and communication in satisfaction and loyalty a transferable finding to your study setting.

The Journal of Sustainable Development Studies (Choudhary & Akhter) found aftersales service characteristics to have a greater t-value (5.66) compared to installation (5.047) and warranty (4.158) in influencing customer satisfaction for home energy systems. This result highlights after-sales service as a potent variable influencing satisfaction.

An article “Impact of O&M on customer satisfaction: ensuring long-term service quality” (Ezzing Solar, 2024) emphasizes that proactive maintenance, transparency and responsive service contribute heavily to customer satisfaction post-installation in the solar industry. This is directly relevant for your context of solar post-install experience, underlining after-sales service importance.

## 1.3 LIMITATIONS OF THE STUDY

- The sample size was also limited because of the limited time and resources that might not accurately represent all the customers in Solstrom Energy Solutions.
- The research was also limited to customers in a given region or area of operation of the company which might not be representative of customer experiences in other regions.

## 2. RESEARCH METHODOLOGY

The present study uses a quantitative approach to analyze the post-installation experience and customer feedback of Solstrom Energy Solutions. The research revolves around the measurement of satisfaction levels, perception of service quality, and drivers of overall experience resulting from installing solar systems at customers' locations. The primary data was collected from 102 customers were randomly selected out of an estimated population of around 500 customers who availed solar purchase during the first quarter (Jan–Mar) using Google Forms. The questionnaire consisted of close-ended and Likert-scale questions on diverse aspects such as product performance, service responsiveness, installation quality, communication, and after-sales support. Secondary data were obtained from company records about solar energy, customer satisfaction, and service quality. The obtained data were organized and tabulated for statistical analysis.

### 2.1 RESEARCH DESIGN

The research design is descriptive, and it is used to study the post-purchase experience of the clients of Solstrom Energy Solutions. It pays attention to the perception of customer satisfaction and perceptions of services post-installation. The study investigates the effects of the factors like product performance, quality of installation, communication and after sales service on total customer satisfaction. The form of primary data collection was a structured questionnaire that was

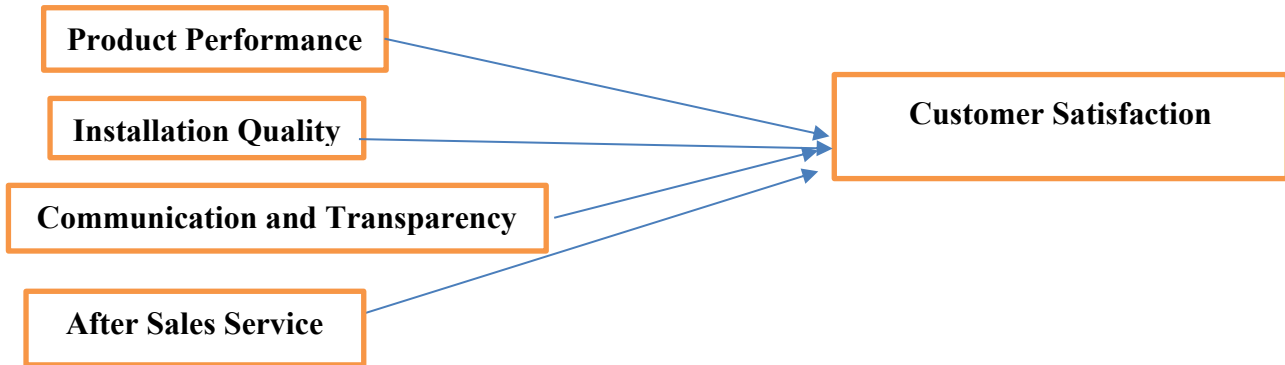


filled out by 102 customers using Google Forms and simple random sampling. The analysis of the data was performed with the help of percentage analysis, and the results were shown in the form of a Power BI dashboard to offer adequate and interactive insights. The method facilitates the use of effective data-driven decision making and assists in determining key areas where the services can be improved.

2.2 RESEARCH MODEL

INDEPENDENT VARIABLE

DEPENDENT VARIABLE



3. SAMPLE SIZE

The total sample of this research is made up of about 500 customers who bought and had put up solar systems of Solstrom Energy Solutions in the first quarter (January- March). Ten two (102) respondents were selected out of this population to be used in the analysis simple random sampling technique. The need, time constraints and feasibility led to the sample size of 102 to have adequate data to make statistical reliability. Under the principle of statistical sampling, A sample size of more than 100 respondents is usually taken as sufficient when it comes to a research on customer satisfaction and perception analysis.

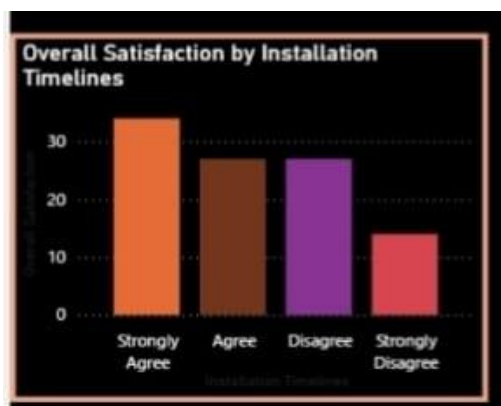
3.1 STATISTICAL TOOLS FOR ANALYSIS

**Frequency Distribution:** This tool showed how frequently each response occurred to selected questions in the questionnaire. It expresses the general trend of responses among customers.

**Percentage analysis:** Percentage analysis was applied in expressing data in terms of proportion and, therefore, one could interpret the extent of satisfaction or perception among customers. Such an analysis helped identify which aspects of post purchase service received the highest or lowest satisfaction.

4. DASHBOARD USING POWER BI

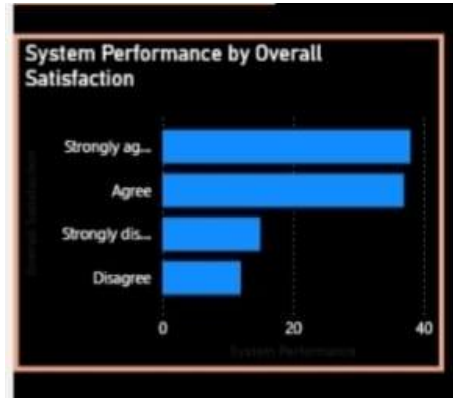
4.1 Figure





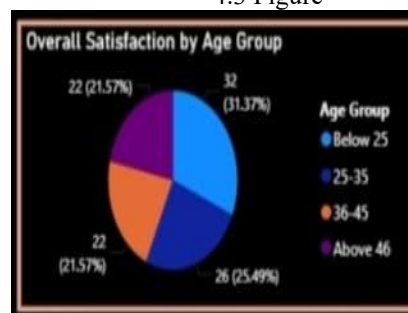
Majority are satisfied with on-time installation. Most of them are contented with timely installation.

4.2 Figure



Most of the customers concur/strongly agree that the system performance is as per expectations. Shows high efficiency and reliability of the product.

4.3 Figure



The highest satisfaction is expressed in 25-35 age group. Recommends improved interaction with online communication and services.

#### 4.1 MAJOR FINDINGS

According to the table of results obtained by 102 customers and examined with the use of Power BI and Excel, the most important findings were as follows:

- Approximately 65% of the respondents said yes and strongly said yes that their solar systems worked effectively and provided the current energy capacity.
- Almost 68% of the respondents stated that inverters and other components were functioning without many failures, demonstrating product reliability and technological power.
- Approximately 60 percent of the customers said that the installation was done within the promised timeline; 30 percent, were dissatisfied more or less, showing that a better schedule should be introduced communication and field coordination.
- 70%, technically competent, which implies that the performance of field staff has a positive impact on customer satisfaction.
- Approximately half the customers believed that the company was responsive to complaints or service requests, which means that customer service is in general good condition but it could be improved response speed should be improved.

#### 4.2 SUGGESTIONS

- Increase the speed of the ticket-resolving system or service-tracking system so that the response time about customer complaints can be lower.



- Enhance transparency and customer confidence through frequent progress round-ups to the customer during the installation and maintenance process via SMS or email.
- Implement a post completion checklist and customer feedback form to ensure quality and end of installation.
- Train installation teams regularly on technical and customer-interaction in order to be professional and enhance service delivery.
- The Power BI dashboard should be used during internal review meetings regularly to monitor the trends in the satisfaction and spot the gaps in the service in real time.

## 5. CONCLUSION

The research paper is concluded by the study that the performance of products, the quality of installations, transparency in communication, and after-sale services have a great influence on the customer satisfaction at Solstrom Energy Solutions. The level of customer satisfaction is high as a way of demonstrating reliability and professionalism of the company. Nevertheless, average satisfaction rates on communication and complaint management indicate the necessity of the constant enhancement of the customer service processes. The Power BI dashboard developed during this work helped to gain an idea about the customer feedback, and it was an efficient analytical tool to make decisions. It showed how data-driven dashboards may be used by the management to help visualize the key performance indicators and get an immediate idea of the improvement. Therefore, the project has managed to integrate both the analytical approaches and customer relationship management which assists Solstrom to enhance its service quality and ensure that it maintains its customers loyal to its services in the saturated solar energy market.

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