



Impact of Consumer Awareness and Product Knowledge on Customer Satisfaction of Electric Two-Wheeler Users

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Received: 11 April 2026 | Accepted: 28 April 2026 | Published: 15 May 2026

Abstract

The rapid growth of electric vehicles (EVs) has transformed the transportation sector, particularly in developing countries such as India. Among different EV segments, electric two-wheelers are gaining popularity due to their affordability, environmental benefits, and government incentives. However, the adoption and satisfaction level of consumers largely depend on their awareness and knowledge about electric vehicles. This study examines the impact of consumer awareness and product knowledge on customer satisfaction among electric two-wheeler users. The research adopts a mixed-method approach including primary quantitative data collected through survey questionnaires and secondary data obtained from academic journals and reports. The findings reveal that higher levels of consumer awareness regarding EV technology, battery performance, charging infrastructure, and government incentives significantly influence customer satisfaction. The study highlights the importance of consumer education programs and marketing communication strategies to improve awareness and enhance the satisfaction level of electric two-wheeler users.

Keywords: Electric Vehicles, Consumer Awareness, Product Knowledge, Customer Satisfaction, Electric Two-Wheelers, Sustainable Transportation

1. Introduction

The global transportation industry is undergoing a major transformation due to environmental concerns, technological advancements, and supportive government policies promoting sustainable mobility. Electric vehicles (EVs) are increasingly viewed as a viable solution to reduce greenhouse gas emissions and dependence on fossil fuels.

In India, electric two-wheelers have emerged as one of the fastest growing segments in the EV market. Their relatively lower cost, government incentives, and suitability for urban mobility make them attractive to consumers. However, despite increasing demand, many potential users still face uncertainties regarding battery life, charging infrastructure, maintenance costs, and vehicle performance.

Consumer awareness plays a crucial role in shaping customer perception and satisfaction. When consumers possess adequate knowledge about product features, benefits, and limitations, they are more likely to develop realistic expectations and experience higher satisfaction after purchase. Product knowledge related to battery capacity, charging time, operating cost, and environmental benefits helps consumers make informed decisions.

Previous studies indicate that lack of awareness about electric vehicles is one of the major barriers to EV adoption in developing economies (Rezvani et al., 2015; Kumar & Alok, 2020). Therefore, understanding the relationship between consumer awareness and customer satisfaction among electric two-wheeler users is essential.

This study focuses on analyzing how consumer awareness and product knowledge influence the satisfaction levels of electric two-wheeler users.

2. Objectives of the Study

1. To assess the effect of consumer awareness on customer satisfaction.
2. To evaluate the role of product knowledge in customer satisfaction.

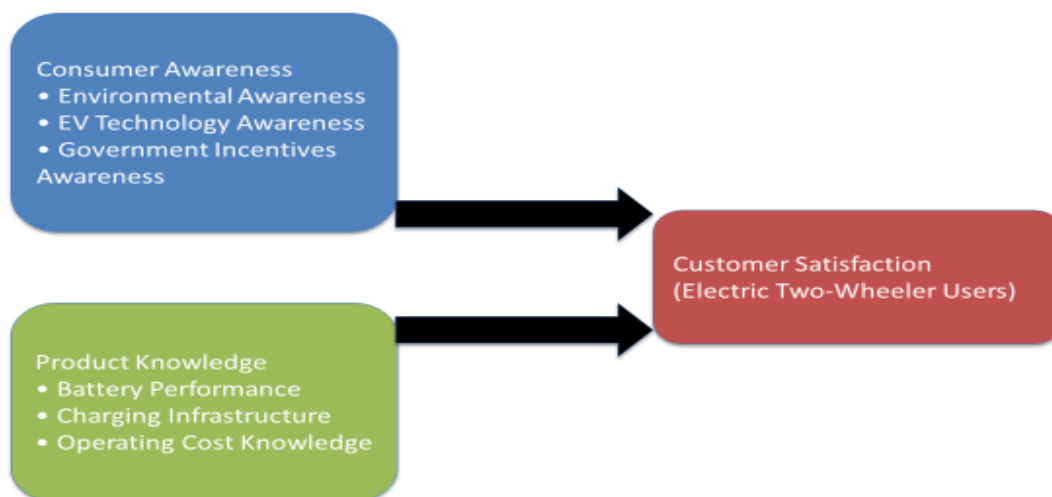
Hypotheses of the Study

H01: Consumer awareness has no significant effect on customer satisfaction among electric two-wheeler users.

H11: Consumer awareness has a significant effect on customer satisfaction among electric two-wheeler users.

H02: Product knowledge has no significant effect on customer satisfaction among electric two-wheeler users.

H12: Product knowledge has a significant effect on customer satisfaction among electric two-wheeler users.



CONCEPTUAL FRAMEWORK

3. Literature Review

Consumer awareness refers to the extent to which consumers possess information about a product's features, benefits, usage, and environmental impact. Higher levels of awareness allow consumers to make informed purchasing decisions and influence their post-purchase satisfaction.

According to Rezvani, Jansson, and Bodin (2015), consumer knowledge and awareness significantly affect the adoption of electric vehicles, especially in emerging markets where new technologies are still developing. Consumers who understand EV technology are more likely to accept and appreciate its advantages.

Kumar and Alok (2020) examined factors influencing electric vehicle adoption in India and found that awareness regarding government incentives and environmental benefits positively influences consumer attitudes toward EVs.

Product knowledge also plays a crucial role in shaping customer satisfaction. According to Kotler and Keller (2016), consumers with better product knowledge tend to experience higher satisfaction because their expectations align more closely with actual product performance.

Another study by Li et al. (2017) highlighted that consumers who understand charging infrastructure and battery performance show greater confidence in using electric vehicles.

Similarly, Wang et al. (2018) observed that environmental awareness significantly influences consumer perception and satisfaction regarding green products, including electric vehicles.

Despite the growing interest in electric mobility, several studies indicate that many consumers still lack adequate knowledge regarding EV technology, charging infrastructure, and government policies. Therefore, improving consumer awareness is essential for increasing both adoption and satisfaction levels among EV users.

4. Research Methodology

This research adopts a **mixed research approach** consisting of both primary and secondary data collection methods.

Primary data was collected through a structured questionnaire distributed among electric two-wheeler users. The questionnaire included closed-ended questions designed to measure consumer awareness, product knowledge, and satisfaction levels.

For the purpose of the study, **150 electric two-wheeler users** were randomly selected from urban areas. Out of these, **102 valid responses** were obtained and used for data analysis.

Secondary data was collected from academic journals, research articles, government reports, and EV industry publications to support theoretical understanding and literature analysis.

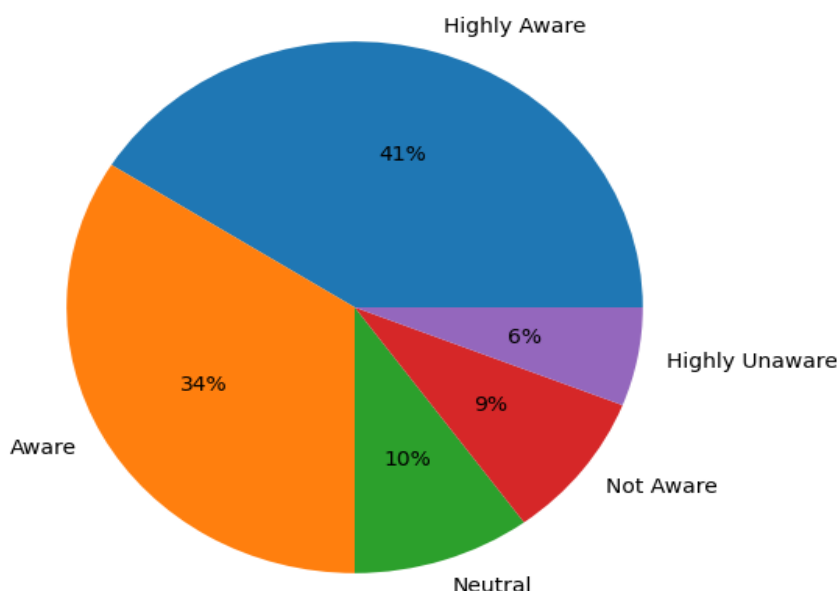
The collected data was analyzed using percentage analysis and graphical representation through Excel.

Analysis and Interpretation

Q1. Are you aware of the environmental benefits of electric two-wheelers?

Options	Total Respondents	Responses	Percentage
Highly Aware	102	42	41%
Aware	102	35	34%
Neutral	102	10	10%
Not Aware	102	9	9%
Highly Unaware	102	6	6%

Figure 1: Awareness of Environmental Benefits



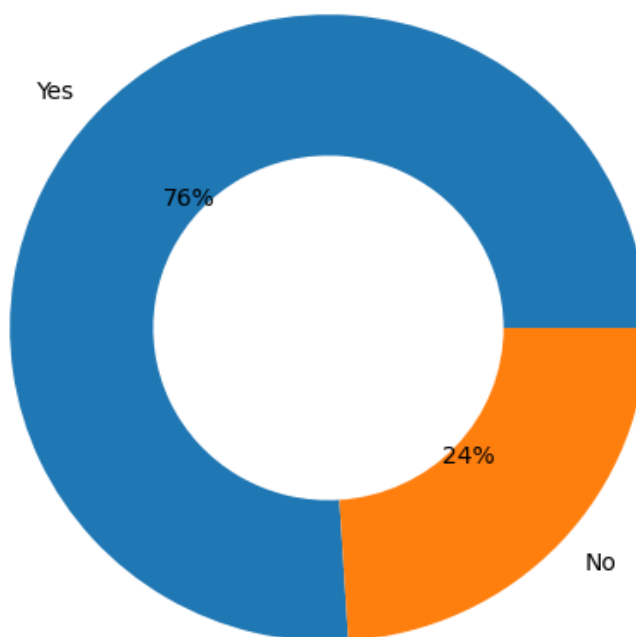
Interpretation

The results indicate that a majority of respondents are aware of the environmental benefits of electric two-wheelers. Approximately 75% of respondents either strongly agreed or agreed that they are aware of the environmental advantages of EVs, which suggests increasing public awareness regarding sustainable mobility.

Q2. Do you have adequate knowledge about battery performance and charging of electric two-wheelers?

Options	Total Respondents	Responses	Percentage
Yes	102	78	76%
No	102	24	24%

Figure 2: Battery & Charging Knowledge



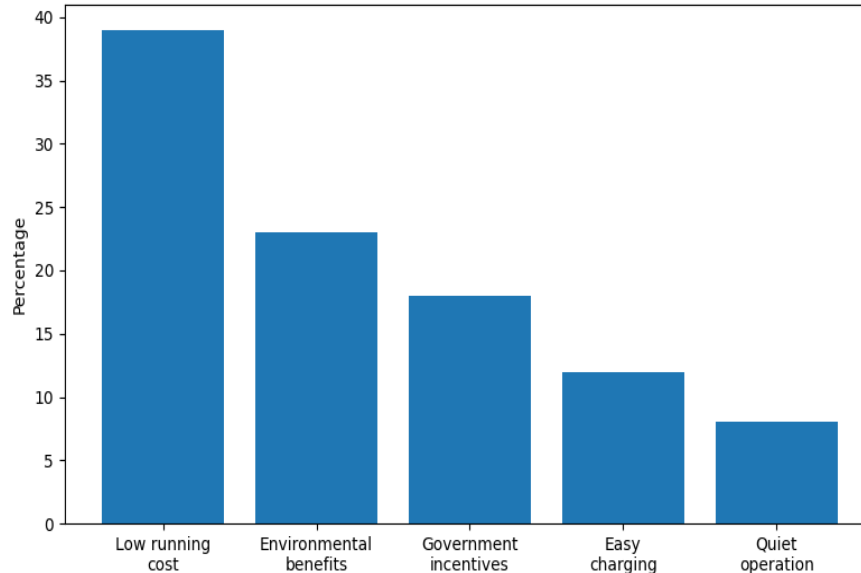
Interpretation

The majority of respondents possess knowledge about battery performance and charging processes. However, a significant portion still lacks complete understanding, indicating the need for better consumer education regarding EV technology.

Q3. Which factor contributes most to your satisfaction with electric two-wheelers?

Options	Total Respondents	Responses	Percentage
Low running cost	102	40	39%
Environmental benefits	102	24	23%
Government incentives	102	18	18%
Easy charging	102	12	12%
Quiet operation	102	8	8%

Figure 3: Key Factors Influencing Satisfaction



Interpretation

The findings show that **low running cost** is the most significant factor influencing customer satisfaction among electric two-wheeler users, followed by environmental benefits and government incentives.

5. Discussion and Findings

The findings of this study indicate that consumer awareness plays a crucial role in determining customer satisfaction among electric two-wheeler users.

Consumers who possess higher levels of awareness regarding environmental benefits, charging infrastructure, and government incentives tend to report higher satisfaction levels. Awareness reduces uncertainty and improves consumer confidence in using new technologies such as electric vehicles.

Product knowledge also contributes significantly to satisfaction because it allows consumers to understand vehicle performance, battery capacity, and operating costs. When consumers have realistic expectations about EV performance, they are more likely to be satisfied with their purchase.

However, the study also reveals that a considerable number of consumers still lack complete knowledge about charging infrastructure and battery technology. This knowledge gap can negatively affect consumer perception and slow down the adoption of electric vehicles.

Therefore, manufacturers, government agencies, and policymakers should focus on increasing public awareness through marketing campaigns, educational programs, and digital information platforms.

6. Conclusion

The study concludes that consumer awareness and product knowledge significantly influence customer satisfaction among electric two-wheeler users. Higher awareness levels lead to better understanding of EV technology, which helps consumers make informed purchasing decisions and experience greater satisfaction.

The findings support the alternative hypotheses (H11 and H12), indicating that both consumer awareness and product knowledge have a significant positive influence on customer satisfaction among electric two-wheeler users. Therefore, the null hypotheses (H01 and H02) are rejected.

The findings emphasize the importance of awareness campaigns and information dissemination in promoting electric mobility. Government initiatives, marketing communication strategies, and educational programs can play a vital role in improving consumer knowledge about electric vehicles.

Enhancing consumer awareness will not only increase customer satisfaction but also accelerate the adoption of electric two-wheelers, contributing to sustainable transportation and environmental protection.

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Cite this Article:

Saini, V., & Malviya, B. (2026). *Impact of consumer awareness and product knowledge on customer satisfaction of electric two-wheeler users. International Journal of Humanities, Commerce and Education, 2(5), 256–261.*

Journal URL: <https://ijhce.com/> **DOI:** <https://doi.org/10.59828/ijhce.v2i5.92>