
A STUDY ON COSUMER PERCEPTION AND PREFERENCES TOWARDS ELECTRIC VEHICLES, WITH SPECIAL REFERENCE TO POLLACHI TALUK

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ABSTRACT

The global automotive industry is currently navigating a significant transition toward sustainable mobility, driven by environmental concerns and the rising costs of conventional fuels. This study examines consumer perception and preferences toward electric vehicles (EVs), with a focused analysis on respondents in the Pollachi Taluk region. Utilizing a convenient sampling method, primary data was collected from 150 respondents to evaluate the impact of socio-economic factors on EV adoption. The findings reveal a demographic profile predominantly composed of young, educated females (53.3%) in the 21–30 age group, mostly employed in the private sector with a middle-income background. Statistical analysis through Chi-square testing indicates a significant association between age and perception levels, as well as between monthly income and vehicle preference. While a majority of respondents (54%) express a general openness to adoption, core functional barriers such as charging infrastructure, battery life, and high initial costs remain primary concerns. "Safe to use" emerged as the most critical priority for users, followed by technical reliability. The study highlights that government incentives are the strongest motivator for future purchases. To accelerate large-scale adoption, the research suggests strengthening charging infrastructure, enhancing digital awareness campaigns, and implementing more accessible financing options to convert growing consumer interest into long-term market confidence.

KEYWORDS

Electric Vehicles (EVs), Consumer Perception, Preference Towards EVs, User Satisfaction, Sustainable Transportation, Charging Infrastructure.

1. INTRODUCTION

The global automotive industry is undergoing a significant transformation with the growing adoption of electric vehicles (EVs) as a sustainable alternative to conventional internal combustion engine vehicles. Rising environmental concerns, increasing fuel costs, and supportive government policies have accelerated the shift toward cleaner transportation solutions. In this context, understanding consumer perception and preferences towards electric vehicles has become critically important for manufacturers, policymakers, and marketers. Consumer attitudes are shaped by multiple factors such as environmental awareness, cost considerations, driving range, charging infrastructure, technological reliability, and brand image.

While electric vehicles offer advantages such as reduced emissions and lower operating costs, concerns related to battery life, initial purchase price, and charging convenience continue to influence purchasing decisions. Analysing consumer perception helps identify the key drivers and barriers affecting EV adoption. This study aims to examine consumer awareness, attitudes, and preference patterns towards electric vehicles, providing valuable insights that can support effective marketing strategies and policy formulation to promote the widespread acceptance of electric mobility.

2. STATEMENT OF THE PROBLEM

Despite the growing availability and promotion of electric vehicles, their adoption rate among consumers remains relatively lower compared to conventional fuel-powered vehicles. While electric vehicles are widely recognized for their environmental benefits and long-term cost efficiency, many consumers still hesitate to purchase them due to concerns related to high initial cost, limited driving range, inadequate charging infrastructure, battery lifespan, and lack of awareness about EV

technology. Consumer perception and preferences play a crucial role in influencing purchase decisions, yet these perceptions are often shaped by incomplete information, misconceptions, and varying personal and socio-economic factors. Additionally, differences in consumer expectations regarding performance, convenience, and reliability further affect acceptance of electric vehicles. The absence of a clear understanding of these consumer attitudes creates challenges for manufacturers, marketers, and policymakers in effectively promoting electric vehicles. Therefore, there is a need to systematically study consumer perception and preferences towards electric vehicles to identify key influencing factors, barriers, and opportunities that can support strategies aimed at increasing EV adoption.

3. REVIEW OF LITERATURE

Renu Vashisth (2021) conducted a study on Consumer Perception Towards Electric Vehicle. The main objective of the study was to find out the overall forces and barriers that act as a hurdle in the path of the consumer for adopting the EV. To study the impact of demographic features on consumer perception towards EV. The sample size of 58 Indian respondents has been taken. Considering the case in electric vehicles as the person might lack the knowledge or feel to lack the knowledge required to make an informed decision. From the analysis, it can be concluded that the various factors affect the perception towards the electric vehicle. The impact will be cumulative of all the factors.

Jose (2022) conducted a study on consumer Attitude and Perception towards Electric Vehicles. The main objective of the study was to identify customers' attitude towards electric vehicles. A group of 150 respondents were selected for the study and we got 120 responses. Majority of the respondents have positive attitude towards electric vehicle. Most important attitude among the majority is that electric vehicle are cheaper to run. The main factor that encourages customers to buy an electric vehicle is environmental friendliness. This study brings to light that customers who do not own electric vehicle also are willing to buy electric vehicle in future.

Chandra Shekar (2023) conducted a study on the awareness and perception of customers towards e-vehicles in Mandy district. The main objective of the study was to study awareness of customers about electric vehicles in Mandy District. To study the factors influencing customer purchasing elective vehicles where a sample size of 120 respondents were taken. Electric vehicles (EVs) are being looked at by the automotive industry as a potential booster for India's growing economy and tool for preservation of ecology. The study on customer awareness and perception towards electric vehicles (EVs) in Mandy District highlights a growing recognition of the benefits of EVs, driven by both environmental and economic factors.

Punit Kumar Kanujiya (2024) conducted a study on consumer perception towards electric vehicles. The main objective of the study was to determine whether electric vehicles are effective. As India experiences fast urbanization and population increase, the adoption of electric vehicles (EVS) has become a vital strategy to address energy security and environmental concerns. conclusively, the study's results highlight the increasing cognizance and approval of electric cars (EVS) among participants, indicating a favourable transition towards eco-friendly mobility alternatives.

Noor Ayesha (2025) conducted a study on consumer awareness and perception towards electric bike. The main objective of the study was to assess the level of awareness about electric bikes among consumers. The primary data collected from the 50 respondents of Sira Taluk. The study provides a comprehensive understanding of the perceptions, awareness, and acceptance of electric bikes among respondents from diverse demographic and socio-economic backgrounds. The study reveals that the majority of the respondents are Awareness of electric bikes is reasonably high, but knowledge about government subsidies and other incentives remains limited, indicating a need for better information dissemination.

4. OBJECTIVES OF THE STUDY

The research is based on the objectives. Following are the research objectives framed for the study.

1. To understand the socio-economic profile and educational background of the respondents.
2. To assess the level of consumer awareness and knowledge about electric vehicles.
3. To identify the consumer perceptions towards electric vehicles.
4. To examine consumer preferences towards electric vehicles.

5. RESEARCH METHODOLOGY

5.1 Research Design

This study relies on primary data. It comprises of respondents from Pollachi Taluk. The primary data was collected from 150 respondents through questionnaires. The respondents were taken on convenient sampling method. The area of study was taken with reference to Pollachi Taluk only.

5.2 Sources of Data

The primary data was collected from 150 respondents through structured questionnaires. The secondary data like articles and theories were collected from various sources such as Magazines, Journals and Websites.

5.3 Sampling and Sample Size

A sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design is determined before data are collected. The population of this study is huge, out of which 150 respondents were taken as samples. In this study, the “Convenient sampling” method was opted.

5.4 Hypotheses of the Study

The study is based on the hypothesis that consumer perception has a significant influence on preferences towards electric vehicles. Following are the hypotheses which were tested with the help of Chi-square in this study.

H₀ There is no relationship between age group and perceptions towards e-vehicles.

H₀ There is no relationship between family income and preference towards e-vehicles.

5.5 Statistical Tools

The statistical tools viz. Simple percentage, weighted average ranking and Chi-square test were used to analyze the data in the study.

6. THEORETICAL FRAMEWORK

6.1 Electric Vehicle in India

Electric vehicles (EVs) are emerging as a significant solution to India's growing environmental and energy challenges. With rising air pollution, increasing fuel prices, and heavy dependence on imported fossil fuels, the need for sustainable transportation has become more urgent than ever. In response, the Government of India has introduced initiatives such as the FAME (Faster Adoption and Manufacturing of Electric Vehicles) scheme, tax benefits, and subsidies to promote electric mobility. These efforts aim to reduce carbon emissions and encourage the adoption of cleaner technologies.

Despite these initiatives, the adoption of EVs in India faces challenges such as high initial cost, limited charging infrastructure, range anxiety, and lack of awareness. Consumer perception and preference play a crucial role in determining the success of electric vehicles in the Indian market. Understanding factors such as affordability, environmental awareness, technological acceptance, and infrastructure availability is essential to accelerate EV adoption and support India's transition toward sustainable transportation.

The Indian EV market includes electric two-wheelers, three-wheelers, cars, and buses, with two- and three-wheelers leading the transition due to affordability and practicality. However,

challenges such as high upfront costs, limited charging infrastructure, battery performance concerns, and consumer awareness still affect widespread adoption. Despite these barriers, technological advancements, private investments, and supportive policies are steadily driving India toward a cleaner and more sustainable transportation future.

6.2 Popular Electric Brand in India

Electric Car Brands (Passenger EVs)

- **Tata Motors** – One of the leading EV makers in India with popular models like Nexon EV, Punch EV, and Tiago EV dominating sales. Tata remains the top EV passenger car brand by market share.
- **MG Motor India** – Known for models such as the MG Comet EV and Windsor EV, MG has quickly become a strong competitor in the EV car segment.
- **Mahindra Electric** – Offers electric SUVs and coupe models (like the BE 6), contributing significantly to EV adoption.
- **VinFast** – A newer entrant in India’s EV market, gaining traction with models like VF 6 and VF 7 and establishing local manufacturing facilities.
- **Hyundai & Kia** – These global brands are entering the Indian EV space with locally produced models planned for the near future.

Electric Two-Wheeler Brands

- **TVS Motor Company** – Strong performer with its iQube series, often topping EV scooter sales charts.
- **Bajaj Auto** – Especially known for the Chetak electric scooter, a popular choice among buyers.
- **Ola Electric** – Gained visibility with its S1 and S1 Pro scooters, though facing competition.
- **Ather Energy** – Premium electric scooter brand with technologically advanced models like the Ather 450 series.
- **Hero Vida** – Part of Hero MotoCorp’s EV push, growing rapidly in the two-wheeler segment.
- **Greaves Electric, BGauss, Ampere** – Other notable EV scooter brands catering to various price segments.

7. DATA ANALYSIS AND INTERPRETATION

Table 7.1 Socio-economic profile of the respondents

Category	Particulars	No. of Respondents	Percentage (%)
Gender	Male	70	46.7
	Female	80	53.3
Age Group	Below 20	31	20.8
	21–30	65	43.3
	31–40	17	11.3
	41–50	23	15.3
	Above 50	14	9.3
Education Level	Up to School Level	36	24
	Diploma	11	7.3
	Undergraduate	47	31.3
	Postgraduate	56	37.4
Occupation	Student	44	29.3
	Private Employee	58	38.7
	Government Employee	33	22
	Business	15	10
Monthly Income	Below Rs. 15,000	35	23.3
	Rs. 15,001–Rs. 30,000	75	50
	Rs. 30,001–Rs. 45,000	29	19.4
	Above Rs. 50,000	11	7.3
Total		150	100

Source: Primary data

The socio-economic profile of the 150 respondents reveals a predominantly young, female, and academically qualified sample. Specifically, 53.3% of the participants are female, and a significant 43.3% fall within the age group of 21–30 years, indicating a tech-savvy and active demographic. The educational background is notably high, with 37.4% being postgraduates and 31.3% being undergraduates, which aligns with the finding that the majority (38.7%) are employed in the private sector. Professionally, the group is diverse, including students (29.3%) and government employees (22.0%). Economically, exactly 50.0% of the respondents fall into the monthly income bracket of Rs. 15,001 to Rs. 30,000, suggesting a middle-income baseline for the majority of the study's participants

Table 7.2 Perception towards EV

Particulars	Weight Average	Ranking
Environmentally friendly	3.51	X
Reducing air pollution	2.69	IV
Cost-effective	3.21	V
Good performance and speed	3.27	VII
Reliable for daily use	3.41	IX
Charging infrastructure	2.62	III
Maintenance cost of EV	3.27	VIII
Battery life	2.61	II
Safe to use	1.96	I
Suitable for long-distance travel	3.23	VI

Source: Primary Data

The analysis of factors influencing user perception reveals that safety and core functional components are the primary concerns for respondents. "Safe to use" emerged as the top-ranked factor with the lowest weighted average of 1.96, indicating it is the most critical priority for users. This is closely followed by technical necessities such as "Battery life" (2.61) and "Charging infrastructure" (2.62), which are ranked II and III respectively. Interestingly, while users prioritize safety and infrastructure, broader conceptual benefits like being "Environmentally friendly" received the highest weighted average of 3.51, placing it at the final rank (X). This suggests a "pragmatic" user base that values immediate personal security and operational viability over general environmental impact when evaluating Electric Vehicle (EV) utility.

CHI-SQUARE ANALYSIS

(i) Age and level of perception

Age and level of perception towards EVs were compared. The calculated Chi-square value (29.161) is greater than the table value (15.507) at the 5% level of significance with 8 degrees of freedom, there exists a significant association between age and level of perception towards electric vehicles. Therefore, the null hypothesis is rejected.

(ii) Monthly income and level of preference

Monthly income and level of preference towards were compared. The calculated Chi-square value (22.415) is greater than the table value (12.592) at the 5% level of significance with 6 degrees of freedom, there exists a significant association between monthly income and level of preference towards electric vehicles. Therefore, the null hypothesis is rejected.

8. MAJOR FINDINGS

The study reveals a demographic and functional profile of respondents characterized by a female majority (53.3%) predominantly in the 21–30 age group (43.3%), with a strong academic background of post-graduation (37.4%). Professionally, the largest segment is employed in the private sector (38.7%) with a monthly income level between Rs. 15,001 and Rs. 30,000 (50%). Social

media serves as the primary source of awareness (24.6%) for their moderate knowledge level of Electric Vehicles (EVs) (30%). While there is a clear preference for two-wheelers (34%) and a general openness toward adoption (54%), users remain neutral regarding current EV performance (36%) and cite charging time (44%) as the most critical decision factor. Preference is lean toward a range below 100 km (38%) and a charging duration of 30–60 minutes (40%), with Tata being the favored brand (28.7%). Despite limited range being the main reported challenge (22.7%), government incentives remain the strongest motivator for future purchase (38.7%), leading to an overall positive outlook on EV transition (40.7%).

9. SUGGESTIONS

To improve consumer preference towards electric vehicles, awareness campaigns should be strengthened to educate people about environmental benefits, long-term cost savings and government incentives. Expanding charging infrastructure in urban and rural areas will reduce range anxiety and increase confidence among potential buyers. Government policies such as subsidies, tax benefits and reduced registration fees should be continued and promoted effectively. Automobile companies should focus on reducing vehicle prices through technological innovation and mass production to make electric vehicles affordable for middle-income consumers. Improving battery life, charging speed and after-sales service will enhance customer satisfaction. Test-drive events and promotional campaigns can help consumers experience the benefits directly. Financial institutions can offer easy loan schemes and low-interest financing options to encourage adoption. Finally, collaboration between government, manufacturers and energy providers is essential to create a supportive ecosystem that accelerates the adoption of electric vehicles.

10. CONCLUSION

The study on consumer perception and preferences towards electric vehicles reveals that most respondents are young, educated, and belong to the middle-income group, indicating strong potential for EV adoption among emerging urban consumers. Social media plays a key role in spreading awareness, and many respondents show a positive attitude toward electric vehicles, especially two-wheelers. However, concerns such as charging time, limited driving range, and affordability continue to influence purchasing decisions. Government incentives are identified as a major motivating factor, highlighting the importance of policy support. Overall, while consumer interest and acceptance of electric vehicles are growing, improvements in charging infrastructure, battery performance, pricing, and awareness are essential to accelerate large-scale adoption and build long-term consumer confidence in the EV market.

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