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Reason for choosing E-vehicle in Pollachi area

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Abstract
The increasing awareness of environmental issues and rising fuel costs has significantly influenced the adoption of electric vehicles (EVs) in semi-urban regions. This study investigates the reasons for choosing electric vehicles in the Pollachi area based on a sample of 120 respondents. Primary data were collected through a structured questionnaire, and analytical tools such as simple percentage analysis and the weighted mean score ranking method were applied to interpret the data. The results from percentage analysis indicate that low running cost is the most important factor influencing consumer preference, followed by environmental benefits and government incentives. The weighted mean score ranking further confirms that low running cost ranks first, while environmental friendliness and subsidies occupy the second and third positions respectively, and social status ranks last. The findings highlight that economic savings and environmental consciousness are the key drivers of EV adoption in the Pollachi region, providing valuable insights for policymakers and automobile manufacturers to promote sustainable transportation.

Keywords: Electric vehicles (EVs), consumer preference, Pollachi, simple percentage analysis, weighted mean score, sustainable transportation, environmental awareness, cost efficiency

Introduction

The global automobile industry is undergoing a profound shift towards sustainable and eco- friendly technologies, with Electric Vehicles (EVs) emerging as a viable alternative to conventional fuel-based transportation. This transition is driven by increasing environmental awareness, the need to reduce carbon emissions, and the rising costs of fossil fuels. Governments and industries worldwide are now focusing on electric mobility as a key step towards achieving long-term sustainability and energy independence. In India, the push toward electric mobility has gained considerable momentum in recent years. Supported by national initiatives such as the FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) scheme and various state-level policies, the EV sector is witnessing rapid growth. Among Indian states, Tamil Nadu has positioned itself as a leading hub for the electric vehicle industry, attracting major automobile manufacturers and investors through favorable policies, infrastructure development, and skilled manpower. However, the widespread adoption of electric vehicles depends not only on technological advancements and government initiatives but also on how consumers perceive this transformation. Consumer perception encompasses attitudes, beliefs, and awareness regarding EV performance, cost, charging infrastructure, environmental impact, and long- term benefits. Similarly, purchase intent reflects a consumer's readiness and willingness to shift from traditional vehicles to electric ones based on these perceptions. This project aims to explore and analyze consumer perception and purchase intent towards Electric Vehicles (EVs) in Tamil Nadu. It seeks to identify the key factors influencing consumer attitudes, assess the challenges that hinder EV adoption, and understand the opportunities for expanding the EV market in the state. The findings of this study will provide valuable insights for policymakers, manufacturers, and marketers to develop effective strategies that promote electric mobility and contribute to a greener, more sustainable future

Statement of the Problem

Electric Vehicles (EVs) are gaining global attention as a sustainable alternative to conventional fuel-based vehicles. However, in Tamil Nadu, the adoption of EVs remains relatively slow compared to traditional vehicles. Despite government initiatives, incentives, and growing environmental awareness, many consumers are still uncertain about switching to electric vehicles. This hesitation often arises due to concerns such as high purchase cost, limited charging infrastructure, doubts about battery life and performance, and a lack of proper information or awareness. These factors strongly influence how consumers perceive EVs and whether they intend to purchase them. Therefore, it is important to understand the consumer perception and purchase intent towards Electric Vehicles in Tamil Nadu. By studying these aspects, this project aims to identify the main barriers that prevent people from adopting EVs and the key factors that could encourage greater acceptance and use of electric vehicles in the state

Objectives of the Study

1. To analyze consumer perception towards Electric Vehicles (EVs) in Tamil Nadu based on factors such as cost, performance, design, and environmental impact.
2. To identify the key factors influencing consumer purchase intent, including Awareness, affordability, charging infrastructure, and brand trust.

Methodology

This study follows a descriptive research design using both primary and secondary data. Primary data was collected through a structured questionnaire from consumers in Tamil Nadu, while secondary data was gathered from journals, reports, and websites. A Convenience sampling method was used, and the data was analyzed using percentage and Graphical analysis to understand consumer perception and purchase intent towards EVs.

Sampling

The study used a convenience sampling method to collect data from consumers in various parts of Tamil Nadu. A total of 120 respondents participated in the survey through a structured questionnaire. The sample included individuals from different age groups, occupations, and income levels to get a broad understanding of consumer perception and purchase intent towards Electric Vehicles (EVs).

Framework of Analysis

The collected data from 103 respondents was analyzed using percentage analysis and presented through tables and charts for better understanding. The analysis focused on key factors such as consumer awareness, perception, satisfaction, and purchase intent towards Electric Vehicles (EVs). This framework helped identify the major influences and challenges affecting consumer decisions in Tamil Nadu.

Statistical Tools Used

The following statistical tools were employed for the analysis and interpretation of the collected data. Firstly, the Simple Percentage Method was used to summarize and present the Data in a clear and understandable manner by calculating the proportion of responses in percentage terms. And weighted average ranking was used. These tools collectively helped in deriving meaningful insights and supporting the study's objectives.

Review of Literature

Souvik Adhikary, Naman Jalan and Nilesh Anute (2022), opines that the consumer perception of electric vehicles in India has been observed since 2015 that EV companies have taken a major step toward economic and environmental factors while producing their vehicles. In the current dynamic scenario, consumers are constantly looking for better eco- friendly products along with cost-efficiency to it. This study takes a quantitative approach (survey) to know the perception of the consumers to accept electric vehicles as a legitimate substitute for petrol/diesel vehicles. This research throws light on the positive and negative factors which affect the consumer's perception when approaching electric vehicles in India.

Rongting Zhou (2023), found that the consumer's intentions to purchase electric vehicles (EVs) is significant to promote EVs. From the value perception perspective, this study aims to explore the relationships between consumers risk and benefit perceptions and value perceptions of EVs and their effects on consumers intentions to purchase EVs. On the basis of 367 valid questionnaires collected in EV pilot cities, this study found that benefit perceptions, namely financial benefit, environmental benefit and psychological benefit were positively correlated with perceived value. However, the effects of risk perceptions on perceived value were diverse. Specifically, physical safety risk and performance risk negatively affected perceived value, while financial risk had no significant effect on perceived value. Additionally, perceived value had a positive impact on consumer's intentions to purchase EVs. Meanwhile, this positive impact could be weakened by information overload. On the basis of research findings, implications and suggestions for promoting EVs are further discussed.

Shino P. Jose (2022), found that this work is to discover that to what extent some issues are key to explain consumer willingness to buy an electric vehicle. While examining this research, the researcher finds the customer's approaches towards modern technologies. The researcher could also find that whether the changes that took place in the world, are adaptable to the customers in their lifestyle. The research can open a new insight to the electric vehicle manufactures or dealers, so that they can segment their market more effectively based on consumer attitude and perception. The study also implies the factors that discourage customers from buying an electric vehicle and by effectively using proper techniques electric vehicle manufactures can overcome this problem. This study focuses on the fact that there may be a chance of more persons shifting to electric vehicles in future and by increasing social awareness the electric vehicle manufactures can make huge profits.

Findings

The findings of the study are divided into three sections, namely: The socio-economic profile of the respondents, consumer perception towards Electric Vehicles (EVs), and their purchase intention towards Electric Vehicles in Tamil Nadu

Socio-Economic Profile

1. Majority 43 (41.75%) of the respondents are residing in Pollachi.
2. Majority 68 (66.02%) of the respondents are male.
3. Majority 89 (86.41%) of the respondents belong to the age group of 18 to 25 years.
4. Majority 82 (79.61%) of the respondents are students.
5. Majority 75 (72.82%) of the respondents are earning below ₹5 lakhs per year.
6. Regarding vehicle ownership, 38 (36.89%) of the respondents own an Electric Vehicle (two-wheeler or four-wheeler).
7. Majority 28 (27.18%) of the respondents own only petrol or diesel vehicles.
8. Majority 37 (35.92%) of the respondents do not own any personal vehicle.
9. Majority 39 (37.86%) of the respondents travel less than 10 km per day.
10. Majority 84 (81.55%) of the respondents are aware of government subsidies for EVs.
11. Majority 42 (40.78%) of the respondents came to know about EVs through the Internet.
12. Majority 27 (26.21%) of the respondents came to know through television.
13. Majority 31 (30.10%) of the respondents are influenced by friends to buy an EV.
14. Majority 28 (27.18%) of the respondents are influenced by advertisements.
15. Majority 69 (66.99%) of the respondents said yes to suggesting others to buy an Electric Vehicle.

Reasons for Choosing Electric Vehicles (EVs)

S.no	Reasons	Total	Rank
1	Rising fuel prices	460	VI
2	Environment friendly (low pollution)	700	II
3	Social status / trend	400	VII
4	Low running cost (fuel savings)	760	I
5	Low maintenance cost	560	IV
6	Government incentives/subsidies	610	III
7	Technological advancement	510	V

The weighted ranking analysis indicates that low running cost (Mean Score = 6.33) is the most important factor influencing the choice of electric vehicles, followed by environmental benefits (5.83) and government incentives (5.08). Moderate importance is given to maintenance cost and technological advancement, while social status ranks last. This shows that economic savings and environmental concerns are the dominant factors driving EV adoption among respondents.

Refernces

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