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SUSTAINABLE MOBILITY CHOICES: ELECTRIC CAR USERS' PURCHASING PATTERNS AND SATISFACTION LEVELS

By

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Abstract

The study highlights strong consumer satisfaction and clear motivators driving electric vehicle (EV) adoption. TATA emerges as the most popular brand, favoured by over half of respondents, while MG Motors and Mahindra trail behind. Digital platforms, especially social media, dominate in shaping consumer awareness, surpassing traditional media. Cost efficiency and sustainability are identified as the most influential factors, with lower operating costs and environmental impact leading the rankings, followed by practical considerations such as maintenance and charging infrastructure. However, infrastructural limitations, particularly insufficient charging stations, remain a significant barrier to wider adoption. Despite these challenges, overall sentiment is highly positive, with a Likert scale value of 4 indicating strong satisfaction among users. The findings suggest that affordability, sustainability, and infrastructure development are critical to accelerating EV adoption, while performance-related aspects play a secondary role.

Keywords: *electric vehicle, affordability, influencing factors, problems of EVs, level of satisfaction, charging infrastructure, maintenance cost, environmental impact.*

Introduction

The global transition toward sustainable mobility has accelerated the adoption of electric vehicles (EVs), reshaping consumer preferences and market dynamics. In India, government initiatives, rising environmental awareness, and technological advancements have created fertile ground for EV penetration. However, adoption patterns vary significantly across regions, influenced by socio-economic conditions, infrastructure availability, and consumer perceptions. This research paper explores consumer insights into EV adoption in Kottayam District, focusing on two critical dimensions: purchasing behaviour and post-purchase

satisfaction. Purchasing behaviour encompasses factors such as affordability, brand preference, charging infrastructure, and environmental consciousness. Satisfaction, on the other hand, reflects consumer experiences with performance, maintenance, convenience, and long-term value. Together, these dimensions provide a holistic view of how consumers in Kottayam perceive and engage with electric mobility.

Significance of the study

This study examines the purchasing behaviour and satisfaction levels of electric vehicle users in Kottayam District, offering insights into consumer adoption patterns. It identifies key factors influencing EV adoption, such as cost, performance, environmental awareness, and government support initiatives. The findings can help policymakers, manufacturers, and other stakeholders develop effective strategies to enhance EV adoption and improve user satisfaction. Furthermore, the study contributes to the broader goal of promoting sustainable transportation and eco-friendly mobility solutions in the region.

Review of literature

Chawla et al. (2023) examined the impact of ecological awareness and green perceived usefulness on the acceptance and usage of electric vehicles (EVs). The study identified factors such as charging time, innovation, perceived quality, affordability, awareness, and comfort as important influences on consumer behaviour and EV adoption.

Abhishek Raj et al. (2023) examined the factors influencing the adoption of electric vehicles and the satisfaction levels of EV users. The study adopted a descriptive research design and collected data from 100 respondents using a structured questionnaire. The findings revealed that environmental concerns, social influence, performance, after-sales service, economic benefits, and the physical appearance of electric vehicles significantly influenced EV adoption.

Palaniswami et al. (2022) provided an overview of the social, economic, and environmental impacts of electric

vehicles in India, highlighting their importance in reducing greenhouse gas emissions and promoting sustainable transportation. The study emphasized the need for improved charging infrastructure, better battery technology, and supportive government policies to accelerate EV adoption. It also noted India's goal of increasing EV usage to reduce carbon emissions and air pollution in the future.

Statement of the problem

Increasing environmental concerns and rising fuel costs have encouraged the adoption of electric vehicles (EVs) as a sustainable mode of transportation. However, despite government initiatives promoting EV usage in Kerala, the adoption of electric cars in Kottayam District is still developing and is influenced by factors such as cost, charging infrastructure, vehicle performance, environmental awareness, and after-sales services. Therefore, this study aims to examine the purchasing behaviour and satisfaction levels of electric car users in Kottayam District to identify the factors and challenges affecting EV adoption.

Objectives of the study

1. To identify the electric car company preferred by the respondents.
2. To explore the factors influencing the purchase of electric car
3. To examine the problems faced by consumers in using electric cars.
4. To assess the level of satisfaction on the usage of electric cars.

Methodology of the Study

Sample area and Size of the sample

The area of the study is Kottayam District. Kottayam District in Kerala presents a unique context for studying EV adoption. Known for its literacy rate, cultural diversity, and semi-urban economic profile, the district provides a microcosm of evolving consumer behaviour in India's mobility sector. Understanding purchasing behaviour and satisfaction levels among EV consumers in this region is crucial for identifying both opportunities and challenges in the diffusion of clean transportation technologies. 200 electric car owners are randomly selected for the study

Sources of data

The primary data have been collected with the help of a structured interview schedule and direct discussion with the sample respondents. The secondary data have been collected from different sources such as published research papers, internet, journal, Government reports and journals.

Statistical tools used

Percentage, Likert scale and Rank order scale are used to analyse the collected data.

Rank order scale

To analyze the factors influencing the purchase of electric cars, a rank order scale was used. Respondents were asked to rank each factor in order of preference. Each rank was assigned a score, with the highest score corresponding to the highest rank and the lowest score to the lowest rank. The total score for each factor was then calculated by multiplying the rank score by the number of respondents assigning that rank. The factor with the highest total score was identified as the most influential in the purchase decision for electric cars.

Likert scale

A 5-point Likert scale was used to analyze the level of satisfaction of respondents regarding the usage of electric cars. Respondents were asked to choose from five response options: highly satisfied, satisfied, partially satisfied, neutral, and dissatisfied. Numerical values were assigned to these responses, ranging from 5 to 1 respectively.

$$\Sigma (fx / \text{total no.of. respondents}).$$

Table 1. Agewise classification of the respondents

Age (in years)	Number of respondents	Percentage(%)
Below 20	6	3
20-30	44	22
30-40	66	33
40-50	54	27
Above 50	30	15
Total	200	100

Source: Primary data

The majority of respondents are concentrated in the middle age groups, with 30–40 years accounting for the largest share at 33% and 40–50 years following closely at 27%. Together, these two categories make up 60% of the total sample, indicating that the survey is heavily represented by working-age adults. The 20–30 years group contributes 22%, suggesting a fair presence of younger adults, while the Above 50 group forms 15%, showing moderate representation of older individuals. The Below 20 category is the least represented at only 3%, highlighting that very few respondents are teenagers. Overall, the age distribution reflects a sample dominated by middle-aged participants, with limited input from the youngest and oldest age groups.

Table 2. Distribution of respondents by company preference

Company	Number of respondents	Percentage (%)
TATA	116	58
MG MOTORS	46	23
MAHINDRA	38	19
Total	200	100

Source: Primary data

A majority of respondents, 116 out of 200 (58%), expressed a preference for Tata, making it the most favoured company. MG Motors was chosen by 46 respondents (23%), while Mahindra was preferred by 38 respondents (19%). The data highlights Tata's strong brand appeal compared to its competitors in this sample.

Table 3. Price range of electric cars preferred by respondents

Price (in lakhs of Rs.)	Number of respondents	percentage (%)
5-10	46	23
10-20	96	48
20-30	36	18
30-40	22	11
Total	200	100

Source: Primary data

Nearly half of the participants (96 out of 200, or 48%) favoured cars priced between Rs.10–20 lakhs, making this the most popular segment. A significant portion (23%) preferred more affordable options in the Rs.5–10 lakh range, while 18% leaned toward mid-range vehicles priced between Rs.20–30 lakhs. Only 11% of respondents showed interest in higher-end models costing Rs.30–40 lakhs. Overall, the data suggests that the majority of consumers are inclined toward moderately priced electric cars, with affordability and value for money being key factors influencing their preferences.

Table 4. Source of awareness regarding electric vehicles

Source	Number of respondents	Percentage (%)
Newspaper	36	18
Magazines	14	7
Advertisement	50	25
Social media	74	37
Personal communication	26	13
Total	200	100

Source: Primary data

The largest share, 74 out of 200 respondents (37%), cited social media as their primary source, highlighting its strong influence in shaping consumer awareness. Advertisements followed with 50 respondents (25%), showing the continued importance of traditional promotional methods. Newspapers accounted for 18% (36 respondents), while personal communication contributed 13% (26 respondents). Magazines had the smallest impact, with only 7% (14 respondents). Overall, the data suggests that digital platforms, particularly social media, play a dominant role in informing consumers about electric cars, surpassing conventional print media and word-of-mouth communication.

Table 5. Availability of nearby charging stations

Response	Number of respondents	Percentage (%)
Yes	66	33
No	134	67
Total	200	100

Source: Primary data

The data regarding the availability of Nearby Charging Stations shows that out of 200 respondents, only 66 (33%) reported having access to nearby charging stations, while a much larger group of 134 (67%) indicated that such facilities are not available. This clearly highlights a significant gap in charging infrastructure, with two-thirds of the surveyed population lacking convenient access. The imbalance suggests that the current network of charging stations is insufficient to meet demand, which could hinder the wider adoption of electric vehicles. Expanding and improving charging infrastructure is therefore crucial to support sustainable mobility and encourage more people to transition to cleaner transportation options.

Table 6. Factors Influencing Electric Car Purchase Decisions

Factors	Total score	Rank
Lower operating cost	935	1
Environmental impact	911	2
Tax and financial benefit	740	6
Availability of charging Infrastructure	776	4
Better performance and acceleration	714	7
Lower maintenance	814	3
Driving experience	756	5

Source: Primary data

The most influential factor is lower operating cost, with a score of 935, followed closely by environmental impact at 911. Lower maintenance ranks third (814), showing that cost efficiency and sustainability are the strongest motivators. The availability of charging infrastructure (776) and driving experience (756) occupy mid-level importance, while tax and financial benefits (740) and better performance and acceleration (714) are ranked lower. Overall, the data suggests that practical and economic considerations outweigh performance-related aspects, with consumers prioritizing affordability, sustainability, and ease of maintenance over speed or acceleration.

Table 7. Common problems faced by respondents in using electric cars

Problems	Number of respondents	Percentage (%)
Range anxiety	46	23
High purchase price	72	36
Limited charging infrastructure	40	20
Battery degradation	14	7
Technical problems	28	14
Total	60	100

Source: Primary data

The table outlines the common problems faced by respondents when using electric cars. The most significant issue reported is the high purchase price, with 72 respondents (36%) identifying it as a barrier. Range anxiety, or the fear of running out of charge before reaching a destination, was noted by 46 respondents (23%). Limited charging infrastructure also emerged as a concern, affecting 40 respondents (20%). Technical problems were mentioned by 28 respondents (14%), while battery degradation was the least reported issue, with 14 respondents (7%).

Table 8. Level of satisfaction on the usage of electric car

Attributes	Number of Respondents	Likert scale	Total score
Highly satisfied	126	5	630
Partially satisfied	34	4	136
Neutral	16	3	48
Satisfied	14	2	28
Dissatisfied	10	1	10
Total	200		852

Source: Primary data

Respondents' satisfaction levels regarding electric cars using a Likert scale shows that, clear majority, 126 out of 200 respondents, reported being highly satisfied, contributing the largest total score of 630. Another 34 respondents (partially satisfied) added 136 points, while 16 respondents remained neutral with a score of 48. Smaller groups expressed lower satisfaction: 14 respondents were "satisfied" (score 28), and 10 respondents were dissatisfied (score 10). Altogether, the total score reached 852, reflecting a strong overall positive sentiment toward electric cars. This distribution suggests that most users are content with their experience, though a minority still face issues that prevent full satisfaction.

Likert scale

= Σ(fx/total no.of. respondents)

=852/200 =4

Likert scale value is greater than the middle value 3. The survey reveals that respondents are highly satisfied on the usage of Electric car.

Findings

TATA holds a dominant position in terms of popularity among the surveyed group, with more than half of the respondents favouring it, whereas MG Motors and Mahindra together account for less than half of the total preferences.

The data underscores the dominance of digital platforms, particularly social media, in shaping consumer awareness, surpassing conventional print media and word-of-mouth communication.

There is an insufficient availability of nearby charging stations. This imbalance highlights a clear gap in the existing infrastructure, suggesting that the current network is insufficient to meet demand. Consequently, the lack of accessibility could hinder the wider adoption of electric vehicles.

Cost efficiency and sustainability are the strongest motivators, with lower operating costs (935) and environmental impact (911) leading the rankings. Practical considerations like lower maintenance (814), charging infrastructure (776), and driving experience (756) outweigh performance-related aspects such as tax benefits (740) and acceleration (714), highlighting that consumers prioritize affordability, sustainability, and ease of maintenance over speed or performance.

Economic factors and infrastructural limitations are the primary challenges hindering wider adoption of electric cars, while technical and battery-related issues, though present, are comparatively less significant.

The survey shows that a clear majority of respondents (126 out of 200) reported being highly satisfied, contributing the largest share of the overall score. With a total Likert scale value of 4 (852/200), satisfaction levels are significantly above the midpoint of 3, indicating strong positive sentiment. Overall, the findings confirm that most users are highly satisfied with their electric car experience, though a small minority still face issues limiting full satisfaction.

Conclusion

The research confirms that electric vehicles are gaining strong consumer acceptance, with satisfaction levels significantly above average and a clear preference for TATA as the leading brand. Cost efficiency and sustainability emerge as the most influential motivators, supported by practical considerations such as maintenance and charging infrastructure, while performance-related aspects remain secondary. However, infrastructural gaps—

particularly the limited availability of charging stations—pose a critical challenge to broader adoption. Overall, the findings emphasize that affordability, sustainability, and improved infrastructure are essential to accelerating EV adoption, while digital platforms continue to play a pivotal role in shaping consumer awareness and driving market growth.

References

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Abhishek, M. B., & Johny, L. (2024). A study on consumer preferences towards electric vehicles over fuelled vehicles: A comparative analysis among urban and rural areas in Ernakulam. *Journal of Consumer Research and Market Trends*, *12*(2), 45–56.

Bansal, P., Kumar, R. R., Raj, A., Dubey, S., & Graham, D. J. (2021). Willingness to pay and attitudinal preferences of Indian consumers for electric vehicles. *Energy Economics, 100,* 105340.

Chawla, U., Mohnot, R., Mishra, V., Singh, H. V., & Singh, A. K. (2023). Factors influencing customer preference and adoption of electric vehicles in India: A journey towards more sustainable transportation. *Sustainability, 15*(8), 7020; 1-15. https://doi.org/10.3390/su15087020

Gujarathi, P. K., Shah, V. A., & Lokhande, M. M. (2018). Electric vehicles in India: Market analysis with consumer perspective, policies and issues. *Journal of Green Engineering*, *8*(1), 17–36.

Palaniswamy, S., Subburaj, S. D. R., Saravanan, M., & Anand, M. (2022). Social, economic and environmental impact of electric vehicles in India. *Journal of Environmental Science and Management*, *25*(1), 64–68.

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