

A Study on Consumer Perception Towards Electric Vehicles

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Abstract:

Electric vehicles reduce pollution and support eco-friendly transport. This study checks people's opinions and knowledge about EVs, including their awareness, expectations, and interest in buying. It looks at factors such as price, easy maintenance, performance, environmental benefits, and government support. The findings show that people see the advantages of EVs, but high cost and few charging stations cause hesitation. The study also gives ideas to build trust in EVs and encourage more people to use them.

In the quick rise of (EVs) they are changing the way people will think about green transportation. This study examines the feelings of people Towards electric vehicles. Data were collected from 100 respondents including current electric vehicle owners and potential buyers. The study examined factors such as environmental concern, perceived cost of EVs, and expectations regarding electric vehicle performance. The study also considers the level of awareness regarding charging stations and the influence of friends and family on purchase decisions. Although many people show interest in switching to electric vehicles, several challenges still remain. Limited availability of charging stations and the high initial cost of purchasing an EV make the transition difficult for some consumers. The study further offers suggestions for vehicle manufacturers and government authorities to encourage greater confidence and adoption of electric vehicles.

Keywords: Electric vehicles, consumer perception, Buying behaviour, Environmental awareness, Adoption Intention

1. Introduction

Electric vehicles are growing quickly around the world, with a compounded annual growth rate (CAGR) of 21.7 percent. By 2030, the number of electric vehicles is expected to increase from 8.1 million to 39.21 million. This big growth is because of factors like better efficiency, less pollution, and concern for the environment. Governments all over the world are supporting the electric vehicle industry by giving subsidies, as more and more people want eco-friendly cars instead of those that use petroleum or diesel. In India, the future of electric vehicles is still at a crucial stage. Whenever there is an increase in oil prices or changes in weather, electric vehicles are often the first option that comes up. Indian companies entering the EV market are taking a lot of risks and working hard to make the EV segment common, but it hasn't happened yet. More than 15 years have passed, but the EV industry hasn't reached the level that was expected. Right now, when you look at the roads, you don't see

many electric vehicles compared to traditional ones. In 2022, companies are trying to improve their products in order to change how people view electric vehicles.

2. Statement of the problem

Customer preference refers to the study of physical, social, and mental behaviour shown by individuals during the process of thinking about, purchasing, using, and discussing products and services. This study examines the perceptions and attitudes of existing customers as well as potential customers toward purchasing goods. Future-oriented vehicles are given special attention due to the increasing shift toward electric vehicles. This growing transition has encouraged the researcher to develop an interest in understanding customer perceptions related to the purchase of electric vehicles. The study emphasizes customer opinions and expectations regarding the adoption and usage of electric vehicles. In India, people are paying a lot of attention to environmental issues,

and many are doing their part to protect the environment. It is well known that cars that run on petrol and diesel are harmful to the environment, that's where more people are thinking about switching to electric vehicles. Although electric cars are a good choice today, many people still don't know much about them or feel unsure. They are not sure if electric vehicles are safe and dependable. Because of this, this study was done to learn about people's view on electric vehicles.

Objectives

- To analyse the level of awareness among consumers regarding electric vehicles.
- To identify the factors influencing consumers' decision to purchase electric vehicles.
- To examine consumers' perception about the cost, performance, and environmental benefits of electric vehicles.
- To study the impact of government incentives and subsidies on consumers' perception.

3. Review of the literature

Raghuvanshi and Gurtoo (2025)¹ expanded the Theory of Planned Behaviour to examine why people choose to adopt electric vehicles. Their study looked at psychological factors like optimism and being innovative. The findings revealed that people who are more innovative are more likely to switch to electric vehicles. They also found that worry about the vehicle's range, known as range anxiety, negatively affects the decision to adopt EVs. On the other hand, a positive attitude towards the environment had a good effect on how people see electric vehicles. The research showed that personal beliefs and attitudes play an important role in deciding to adopt electric vehicles. The authors also suggested that government policies could help to reduce the worries of people who have about the electric vehicles. This study helps in understanding the behaviour behind electric vehicle adoption better.

Narayani and Hariprakash (2024)² they found that people's expectations about how well an EV will perform are a big factor in whether they are willing to switch to one. Also, the opinions of family and friends had a strong effect on how people view EVs. The study

said that government support, like incentives, is important for getting more people to adopt electric vehicles. Many consumers worried about how long the batteries last and how often they can charge their vehicles. The research also showed that how much people know about EVs directly affects their interest in buying them. The authors suggested that careful and focused policies could help increase the number of people using electric vehicles. This study helps us better understand how Indian consumers make decisions about buying cars.

Singh and Verma (2023)³ said that when people become more aware of environmental issues, it makes them view electric vehicles more positively. Their research showed that many people think electric cars help cut down air pollution, reduce greenhouse gas emissions, and lessen the need for fossil fuels. They found that younger and more educated people are more likely to want to use electric vehicles than older people. But the study also noted that some people are unsure about electric vehicles because they don't know enough about the technology. Many have concerns about how well the batteries work, how long it takes to charge, and whether the vehicles will last a long time. The researchers said that it's important to run awareness campaigns and educational programs to help people understand and trust electric vehicles. They concluded that caring about the environment is not enough on its own. People also need good information and better infrastructure to change their views about electric vehicles.

Scope of the study

This study examines consumer perceptions toward electric vehicles (EVs) by assessing their level of awareness, attitudes, and preferences. It focuses on key factors influencing the intention to purchase EVs, including purchase cost, availability and convenience of charging infrastructure, environmental concern, government incentives, vehicle performance, and maintenance cost. The study is limited to respondents from a specific geographical area, and data were collected through a structured questionnaire using Google Forms. Demographic variables such as age,

gender, income level, educational qualification, and occupation were considered for analysis. The findings are based solely on the responses obtained during the survey period and may vary with changes in market conditions, technological advancements, or government policies. The outcomes of this study provide useful insights for automobile manufacturers, policymakers, and marketers in understanding consumer expectations and barriers, thereby supporting the development of effective strategies to promote the adoption of electric vehicles.

4. Research methodology

Research Design

The study uses a descriptive research design because it is meant to understand and explain what consumers think, know, feel, and prefer about electric vehicles.

Area of the Study

The study is carried out with consumers in Coimbatore city to look into their views on electric vehicles.

Sources of data

The study uses both primary and secondary

For primary data Collected a data from peoples through a structured form made on google forms. The form included questions about their background and their knowledge, likes and views on electric vehicles.

5. Data analysis and Interpretation

For secondary data Collected from books, research papers, websites, and other published materials about electric vehicles.

Sampling Technique and sample size

Sample size

The sample size for the study consists of 100 respondents.

Sampling Technique

The study uses a convenience sampling method, where respondents are selected based on ease of access and availability.

Period of the Study

November 2025 to January 2026

Statistical tools of the study

- Percentage Analysis
- Friedman Ranking Analysis

Limitations of the Study

- The study is limited to a specific geographical area.
- The results are based on respondents' opinions, which may change over time.
- Time constraints and limited sample size may affect generalization of results.

TABLE 1
Personal profile of the Respondents

Personal profile	Category	No of Respondents	Percentage (%)
Gender	Male	45	45%
	Female	55	55%
Age Group	Below 25 years	40	40%
	25 - 40 years	45	45%
	Above 40 years	15	15%
Educational qualification	School level	20	20%
	Undergraduate	45	45%
	Postgraduate & Above	35	35%
Occupation	Student	30	30%

	Private Employee	35	35%
	Government employee	20	20%
	Self-employed	15	15%
Total		100	100%

Source: primary data

Interpretation

The table indicates a higher percentage of female participants in the study, with 55% of respondents being female and 45% being male. The sample is dominated by young and middle aged respondents, as evidenced by the fact that 45% of respondents are between the ages of 25 and 40 and 40% are under 25. A well-educated respondent group is indicated by the

fact that 45% of respondents are undergraduates and 35% have postgraduate degrees. The majority of respondents appear to be working professionals and students, as evidenced by the fact that 35% of respondents are private employees and 30% are students. Overall, the data shows that young, educated, and employed people have the greatest influence on consumers' perceptions of electric vehicles.

TABLE 2
Frequency of using / Considering Electric vehicles

Frequency	No of Respondents	Percentage
Daily	10	10%
Weekly	22	22%
Monthly	30	30%
Occasionally	38	38%
Total	100	100%

Source: primary data

Interpretation

EV adoption is still in its early stages, as the table shows that 38% of respondents use or consider electric vehicles on occasion. Approximately 30% of consumers use or think about electric vehicles on a monthly basis, indicating a moderate level of interest.

While only 10% use electric vehicles every day, indicating limited regular usage, nearly 22% interact with them on a weekly basis, indicating growing acceptance. Overall, the findings show that interest in and awareness of electric vehicles are growing, but frequent use is still relatively low.

TABLE 3
Source of awareness about electric vehicles

Source of awareness	No of Respondents	Percentage (%)
Social media advertisements	42	42%
Influencers / YouTube	28	28%
Television & newspaper	15	15%
Company website / EV brand apps	10	10%
Friends & Family	5	5%
Total	100	100%

Source: primary data

Interpretation

Social media ads were the main source of awareness for 42% of the respondents, according to the table. Online reviews and influencers make up 28%, demonstrating the expanding power of digital opinion

leaders. 15% of awareness comes from traditional media like television and newspapers. 10% came from company websites and brand apps, and 5% came from friends and family. All things considered, the results show that digital platforms are the best ways to raise awareness of electric vehicles.

TABLE 4
Friedman Ranking Analysis
Factors influencing purchase decision of Electric vehicles

Factors	Mean Rank	Rank
Environmental friendliness	4.65	2
Fuel / running cost savings	4.34	4
Government subsidies & Incentives	4.10	6
Availability of charging stations	4.78	1
Vehicle performance & comfort	4.21	5
Purchase price affordability	4.52	3

Source: primary data

Interpretation

In terms of mean ranking, the availability of charging stations has the highest mean rank (4.78), indicating it is the most influential factor in the purchase decision of electric vehicles. This is followed by environmental friendliness with a mean rank of 4.65, showing strong concern for eco-friendly benefits. Purchase price affordability ranks third with a mean rank of 4.52, highlighting the importance of cost. Fuel or running cost savings has a mean rank of 4.34, reflecting moderate influence. Vehicle performance and comfort records a mean rank of 4.21, suggesting relatively lower importance. Government subsidies and incentives have the lowest mean rank (4.10), indicating they are the least influential factor in consumers' electric vehicle purchase decisions.

6.Suggestions

The study says that making it easier to charge electric vehicles is key to making people feel more confident about buying them. Both the government and private companies need to work together to set up more public

charging points in cities and even in countryside areas. This will help people worry less about running out of power while driving. To make electric cars more affordable, the government can offer money-back deals, tax breaks, and better loan options. These steps can help more people decide to go for electric vehicles. Running ads, holding classes, and using social media can help people learn about the good things about electric cars, like how they are better for the planet, save money over time, and need less repair. Car makers should also focus on making better batteries so that vehicles can go further on a single charge and charge faster. Having good support after buying a car, like trained workers and easy access to parts, will make customers happier. In the end, everyone involved—those who make the rules, the car makers, and the service people needs to work together to help more people switch to electric vehicles.

7.Conclusion

This study concludes that consumer perception towards electric vehicles is generally positive and continues to

improve due to increasing environmental awareness and rising fuel costs. Many consumers recognize electric vehicles as an eco-friendly and cost-effective alternative to conventional vehicles. Factors such as concern for the environment, government incentives, and technological advancements play a significant role in influencing purchase intentions. The EVs industry is in a strong position right now, a bright future and a large share of the market. The quality of electric vehicles has improved a lot since the start of the EV movement in India. Indian consumers are becoming more open to new technologies, and electric vehicles are now seen as better than traditional cars. People are more informed about EV brands and what they can offer. When we look at the overall research, it's clear that consumers are looking for eco-friendly and sustainable products. The government is also taking steps to build the right infrastructure and facilities, which will help make electric vehicles a common choice in the Indian market.

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