

EVALUATING CONSUMER PREFERENCES AND KEY FACTORS INFLUENCING THE ADOPTION OF ELECTRIC VEHICLES AT VEPPALODAI OF THOOTHUKUDI DISTRICT

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ABSTRACT

The demand for electric vehicles (EVs) is growing rapidly due to environmental concerns, rising fuel prices, and advancements in technology. This study aims to understand the key factors influencing consumer preferences when purchasing electric vehicles. The research focuses on factors such as environmental benefits, cost-effectiveness, battery performance, charging infrastructure, government incentives, advanced technology, and design features. Through surveys and data analysis, the study highlights how consumers prioritize these factors when making decisions. The findings of this research will help automobile manufacturers and policymakers develop strategies to meet consumer expectations and promote the adoption of electric vehicles.

Key words:

Electric Vehicle, Environmental awareness, Market trends, Vehicle affordability, Innovation in Transport, Fuel cost saving.

INTRODUCTION

Electric vehicles (EVs) are becoming more popular around the world. These vehicles run on electricity instead of gasoline or diesel, which makes them eco-friendly and cost-effective. People are choosing EVs for various reasons, such as saving money, protecting the environment, and enjoying advanced technology. Electric vehicles, or EVs, are becoming popular around the world. These vehicles run on electricity instead of gasoline or diesel. Many people prefer electric cars because they help protect the environment by reducing air pollution. EVs also save money on fuel and require less maintenance.

Consumer Preferences for Electric Vehicles (EVs)

Electric vehicles (EVs) are transforming the automobile industry by providing an eco-friendly and energy-efficient alternative to traditional gasoline-powered cars. As concerns

about climate change, fuel prices, and sustainability grow, more consumers are considering EVs for their next vehicle purchase.

Increasing Awareness:

Consumers are increasingly aware of the environmental impact of traditional vehicles and the benefits of EVs in reducing emissions and promoting sustainability. Increasing awareness of electric vehicles (EVs) is crucial for promoting sustainable transportation and reducing environmental impact

EV Sales and Industry Developments

India has been actively building out its network of charging infrastructure. The Ministry of Heavy Industries has approved the building of 2,877 electric car charging stations throughout several states, along with 1,576 stations spread across 16 highways and 9 expressways, as part of the FAME India plan. With the help of this expanding network of public and private charging stations positioned thoughtfully throughout towns, business districts, and roads, electric vehicle owners will find it simpler to conveniently charge their vehicles.

Cost and Affordability:

The cost and affordability of electric vehicles (EVs) play a crucial role in their adoption. While EV prices have been historically higher than traditional gasoline cars, advancements in battery technology, increased production, and government incentives are making them more accessible to a broader range of consumers.

Maintenance and Operating Costs:

EVs typically have lower running costs due to the lower cost of electricity compared to gasoline and reduced maintenance needs.

Performance and Features:

EVs offer unique features like instant torque, quiet operation, and advanced technology, which can appeal to certain consumers.

Subsidies and Tax Credits:

Government incentives, such as subsidies and tax credits, can make EVs more affordable and attractive to consumers.

Government Policies and Incentive

Many governments worldwide offer financial incentives to encourage EV adoption. These incentives include tax credits, rebates, a reduced registration fees. In some regions, EV owners also benefit from perks such as free parking, toll exemptions, and access to carpool lanes. Consumers often consider these incentives when deciding whether to purchase an EV. A strong policy framework can significantly boost consumer interest in electric vehicles.

Objectives of the Study:

- ❖ To analyze the consumer awareness of EVs bike of the respondents.
- ❖ To understand what factors influencing consumer preferences towards EVs.
- ❖ To analyze the level of satisfaction of consumers towards EVs.

REVIEW OF LITREATURE

Singh & Verma (2020) – Leasing options make EVs more attractive to budget-conscious buyers. Lower monthly payments encourage first-time EV users. Flexibility in ownership reduces long-term uncertainty.

Smith et al. (2021) – Environmental awareness drives interest, but cost and charging infrastructure limit adoption. Younger consumers show more interest. Brand trust affects decisions.

Brown & Green (2022) – Social influence and peer recommendations impact EV choices. Urban consumers show more interest. Government policies on emissions shape demand.

METHODOLOGY

The study follows a descriptive research design, aimed at understanding the preferences, attitudes and behaviour of consumer towards electric bikes.

Limitations of the Study

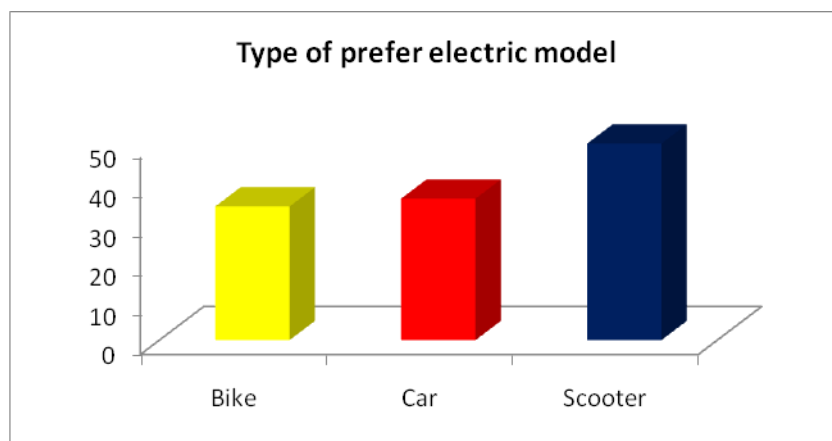
- Limited geographical coverage.
- Possible response bias in self - reported data.

Table 5.1
Types of Prefer Electric Model

S.NO	Types of prefer Electric model	No of the respondents	Percentage
1	Bike	34	28%
2	Car	36	30%
3	Scooter	50	42%
	Total	120	100

Source: Primary data

The survey data on the type of preferred electric vehicles among the 120 respondents. 28% of the respondents prefer an electric bike, 30% of the respondents prefer an electric car and 42% of the respondents prefer an electric scooter respectively.

Figure: 5.1.1
Type of Prefer Electric Model

Table 5.2
Current Trends for buying Electric vehicle

S.No	Trends	No of the respondents	Percentage
1	Price	12	10%
2	Charging possibilities	10	8%
3	Design	12	10%
4	Safety	46	38%
5	Being Environmental friendly	26	22%
6	Cheaper road tax	-	-
7	Resale value	-	-
8	No Noise pollution	14	12%
	Total	120	100

Source: Primary data

The table presents data on the current trends for buying electric vehicles. 10% of the respondents believe that the price is very affordable for buying EVs, 8% of the respondents said charging possibilities is available at every home so they choosing Evs, 10% of the respondents like that design of EVs, 38% of the respondents believe the safety is on the EVs, 22% of the respondents accept the EVs an being environment friendly, zero respondents from two category its cheaper road ta x and resale value, 12% of the respondents believe no noise pollution on EVs respectively.

Figure: 5.1.2

Trends in Electric vehicle

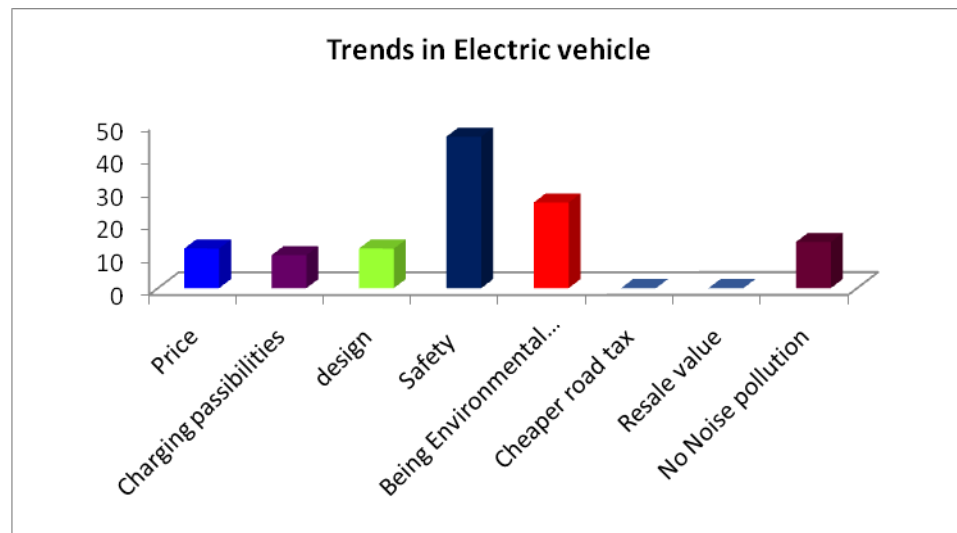


Table 5.3

Factor influencing buyers of E-Vehicle

S.no	Buyers of E-Vehicle	No of the respondents	Percentage
1	Re-sale value	22	18
2	Environmental impact	27	22
3	Prices	30	25
4	Charging stations	32	27
5	Others	10	8
	Total	120	100

Source: Primary data

The table explain the factors influencing buyers of electric vehicles..18% of the respondents is a moderate concern about re-sale, its indicating that some buyers consider long time investment returns, Environmental impact (22%) is also a strong motivator, suggesting that many buyers are eco-conscious, the second most important factor is price 25% of the respondents affordability is a major concern for potential buyers, Charging station availability 27% is the most significant factor, indicating that consumers prioritize ease of access to charging infrastructure, finally 8% of other factor play a smaller role in influencing decisions respectively.

Figure: 5.1.3 Factor influencing buyers of E-Vehicle

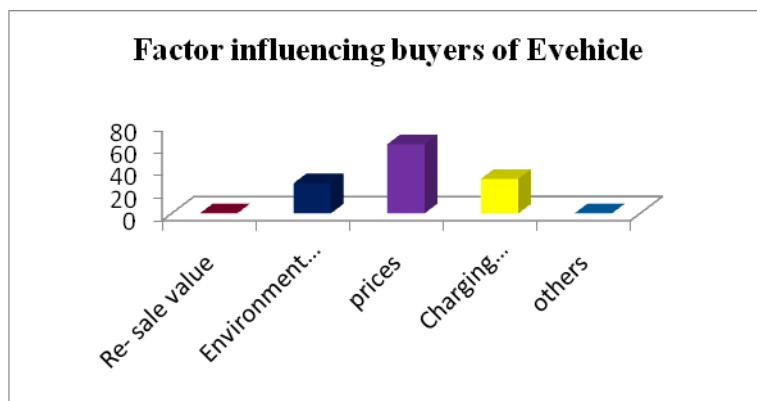


Table 5.4

Reasons for choosing electric vehicle over a fuel vehicle

S.no	Reasons for choosing electric vehicle over a fuel vehicle	No of the respondents	percentage
1	Yes	54	45%
2	No	66	55%
	Total	120	100

Source: Primary data

The table shows that reason for choosing E- vehicle among 120 respondents.45% of the respondents to choosing of e-vehicle55% of the respondents not choosing on e- vehicle respectively.

Figure 5.1.4

Reasons for choosing electric vehicle over a fuel vehicle

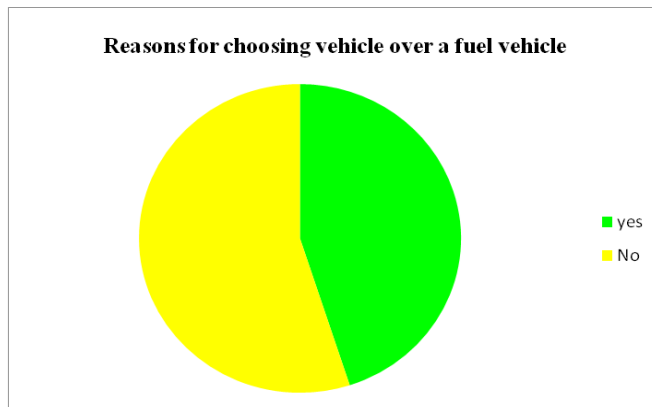


Table 5.5

Awareness of Government policies for purchasing an E- vehicle

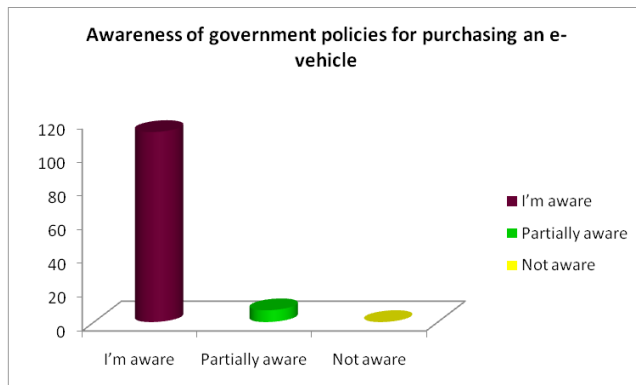
S.NO	Awareness of Government policies for purchasing an e- vehicle	No of the respondents	Percentage
1	I'm aware	113	94
2	Partially aware	7	6
3	Not aware	-	-
	Total	120	100

Source: Primary data

This table shows that how aware of the respondents about governments policies for buying Electric vehicle ,Maximum 94% of the respondents are fully aware of government policies.6% of the respondents are partially aware of these policies. Zero respondents reported being completely unaware of the government policies respectively.

Figure: 5.5

Awareness of Government policies for purchasing an E- vehicle



FINDINGS

- Mostly 42% of the respondents are preferred electric model Scooters.
- 38% of the respondents are safety based buying electric vehicle.
- 27% of the respondents most significant factors in charging station.
- Mostly 80% of the respondents awareness of tax discount.
- 55% of the respondents not choosing on e- vehicle.

SUGGESTIONS

- Lower Costs offer government subsidies, tax benefits, or installment plans to make EVs more affordable.
- Better Charging Infrastructure increase the number of fast-charging stations, especially in rural and suburban areas.
- Longer Battery Life invests in research to improve battery efficiency and reduce charging time.
- Increase Public Awareness educates consumers about EV benefits, such as lower fuel costs and environmental impact.

CONCLUSION

Consumer preference for electric vehicles (EVs) is driven by a combination of environmental concerns, cost savings, technological advancements, and government incentives. While challenges such as high initial costs, limited charging infrastructure, and range anxiety remain, improvements in battery technology and expanding charging networks are helping to increase adoption. As consumers become more environmentally conscious and automakers

continue to innovate, the demand for EVs is expected to grow, shaping the future of sustainable transportation.

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