

Consumer Perception towards Electric Vehicles in India

Aditya Kumar

School of Business, Galgotias University

ABSTRACT

Considering the present depletion of fossil resources and price increases, another energy source is required to power the car. The car industry is investigating electric vehicles as a solution to the problem of pollution. India's industry and ecology. EV market penetration is currently relatively low, despite governments establishing EV legislation. The potential scope of electric vehicles in India will be investigated in this research, as will consumer perception.

KEYWORDS: Electric cars, consumer perception, vehicle selection, environment, conventional vehicle, government policies.

INTRODUCTION:

India is home to the world's third-largest road network. Road travel seems to be a favoured mode of transportation in India, with more than 60% of the population using personal or shared automobiles to travel.

Conventional automobiles contribute significantly to global warming and environmental air pollution. Dust is produced by all sorts of cars due to brakes, tyres, and road wear. The typical diesel car pollutes the air more than the average petrol vehicle. Yet, both petrol and diesel vehicles emit more pollution than electric vehicles. Governments began to utilise fiscal measures such as road charge to discourage the purchase and usage of more polluting automobiles.

Green tax is charged when re-registering a car after 15 years of usage to encourage consumers to switch from polluting automobiles to fuel-efficient and less polluting vehicles.

Fuel taxes may operate as an incentive for the development of more efficient, less polluting vehicles and alternative fuels. High gasoline prices or cultural shifts may create a strong incentive for people to choose lighter, smaller, more fuel-efficient automobiles or to avoid driving altogether. (transportpolicy)

The FAME India Plan is an incentive programme designed to promote electric and hybrid automobiles. Its goal is to encourage electric mobility by providing financial incentives for increasing EV manufacturing and developing electric transportation infrastructure. The National Electric Mobility Mission Plan (NEMMP) 2020 is a National

Mission plan that provides the vision and hence the roadmap for EV uptake and manufacture. This strategy is intended to improve national fuel security, provide inexpensive and ecologically friendly transportation, and help the Indian automobile sector achieve global manufacturing leadership.

LITERATURE REVIEW:

Marcello Contestabile, Dr Gregory Offer, Dr Robin North, *Electric Vehicles: A Synthesis of Existing Research with an Emphasis on Economic and Environmental Viability* According to one study, the long-term adoption of EVs will be significantly reliant on advancements in battery technology, which will reduce costs and boost energy density, as well as the supply of a viable charging infrastructure. 2012 (Marcello Contestabile)

Potential Requirement for Electric Cars, Charging Station Infrastructure, and the Indian Market's Challenges: by Praveen Kumar and Kalyan Dash, Rather than making sweeping changes, India should invest in small-scale reinforcements to address load difficulties locally. Charging at home should be promoted. Before adopting the vast scale, proper planning of site, population, traffic density, and safety should be addressed.

Which Technology for an Urban Distribution Center: Conventional, Hybrid, or Electric Vehicles? Philippe Lebeau, Cedric De Cauwer, Joeri Van Mierlo, and Cathy Macharis contributed to this work. Freight transport has a significant influence on urban mobility. The researcher investigated the possibility of integrating electric cars into urban logistical operations. A fleet equipped with various technologies has the potential to reduce last-mile expenses. The researcher proposed a fleet size and mix vehicle routing challenge for EVs with time windows. The authors' key contribution was to take into account the fluctuation of the EV range. EVs are frequently the most competitive technology in the category of small vans. In the area of heavy vans, diesel has seen the most financially appealing answer as electric vehicles.

The widespread use of EVs may help to alleviate issues such as pollution, global warming, and oil reliance. EV penetration is, however, fairly limited, despite governments pursuing aggressive promotion measures. They offered a thorough assessment of studies on consumer preferences for EVs in order to inform policymakers and guide future research.

They contrasted the economic and psychological approaches to electric car buyer choice. The financial and technological aspects of an EV have a substantial influence on its usefulness, including its purchase and running costs, driving range, charging time, vehicle performance, and market brand variety. The density of charging stations has a favourable impact on the utility and promotion of electric vehicles. The influence of tax and incentive programmes. The replacement of ICE with electric engines would significantly cut emissions while also benefiting customers. Numerous countries have adopted and are using this technology. contribute to the betterment of the environment. The researcher observed the potential and problems associated with EV implementation in India. Government initiatives, batteries, industries, and the environment have all been examined. These issues included the cost of EVs, the efficiency of EVs in India, and the demand for EVs. The introduction of EVs in India is largely intended to reduce greenhouse gas emissions and reduce oil costs. The government should make the most of the opportunities offered and identify appropriate solutions to the issues.

OBJECTIVE:

The objective of this paper is to understand consumer perception and the factors important for the purchase of EVs in India.

RESEARCH METHODOLOGY:

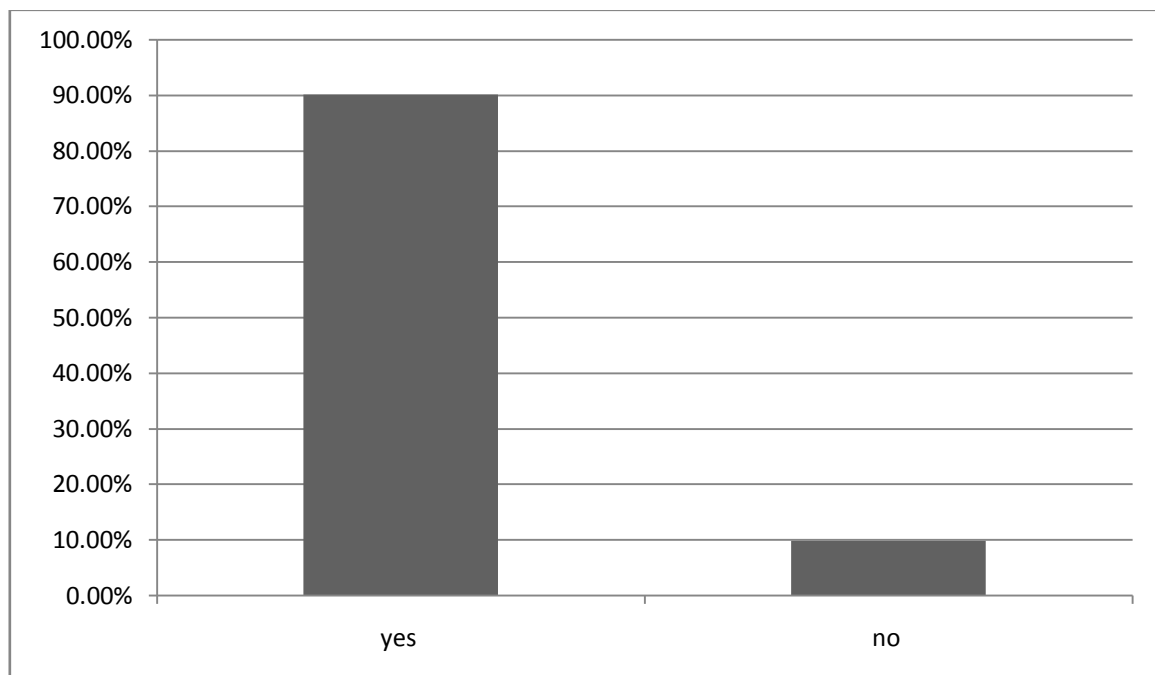
Descriptive research methodology is used. Primary data of a sample population of 100 is collected using online questionnaire through google forms.

DATA ANALYSIS AND INTERPRETATION:

The sample size is 100 people, with 60.4% being men and 39.6% being women. 7.5% of respondents are 18-23 years old, 55.7% are 24-40 years old, 27.8% are 41-55 years old, and 9% are 56 years old or older.

Question 1. If you want to change/ buy, would you prefer electric vehicles?

Statement	No of respondents in percentage
Yes	90.1%
No	9.9%

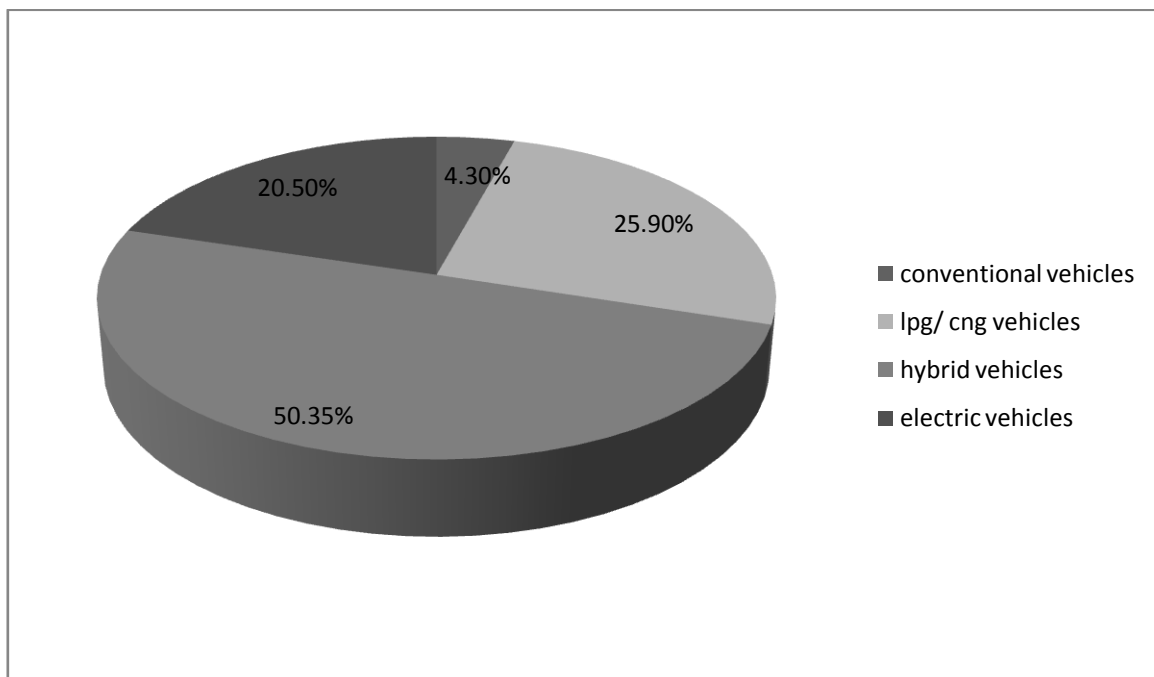


INTERPRETATION:

90.1% preferred environmentally friendly automobiles, whereas 9.9% preferred conventional vehicles. People are aware of climate change and are willing to switch to eco-friendly vehicles.

Question 2. Which of the following would you prefer?

Statement	No of respondents in percentage
Conventional vehicles	4.3%
Lpg / cng vehicle	25.9%
Hybrid vehicle	50.3%
Electric vehicles	20.5%

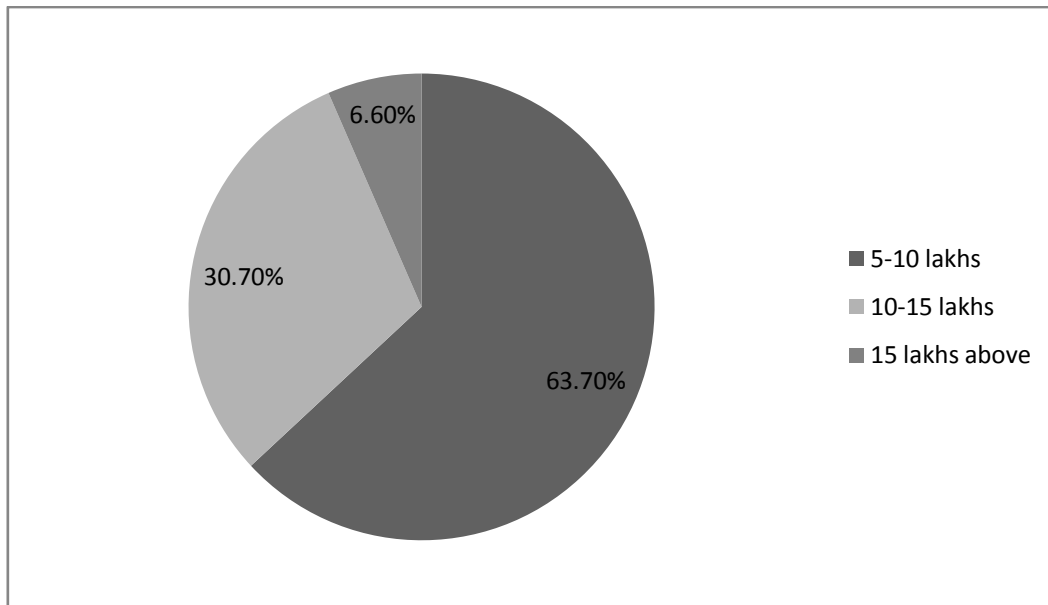


Interpretation:

When asked regarding choice of vehicle, respondents majorly selected hybrid vehicles.

Question 3. How much should be cost of electric vehicles in Indian market?

Statement	No of respondents in percentage
5-10 lakhs	63.7%
10-15 lakhs	30.7%
15 above	6.6%

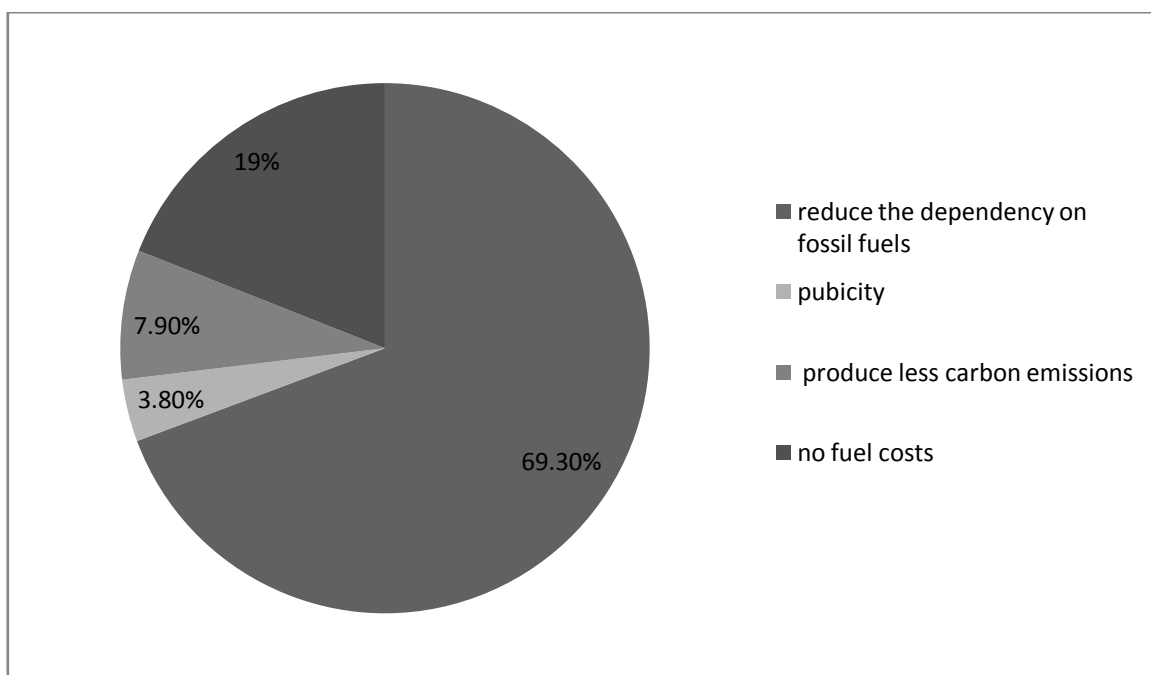


INTERPRETATION:

Cost being an important factor, customer expects EVs in 5-10 lakhs range.

Question 4. Reason for selecting electric vehicles?

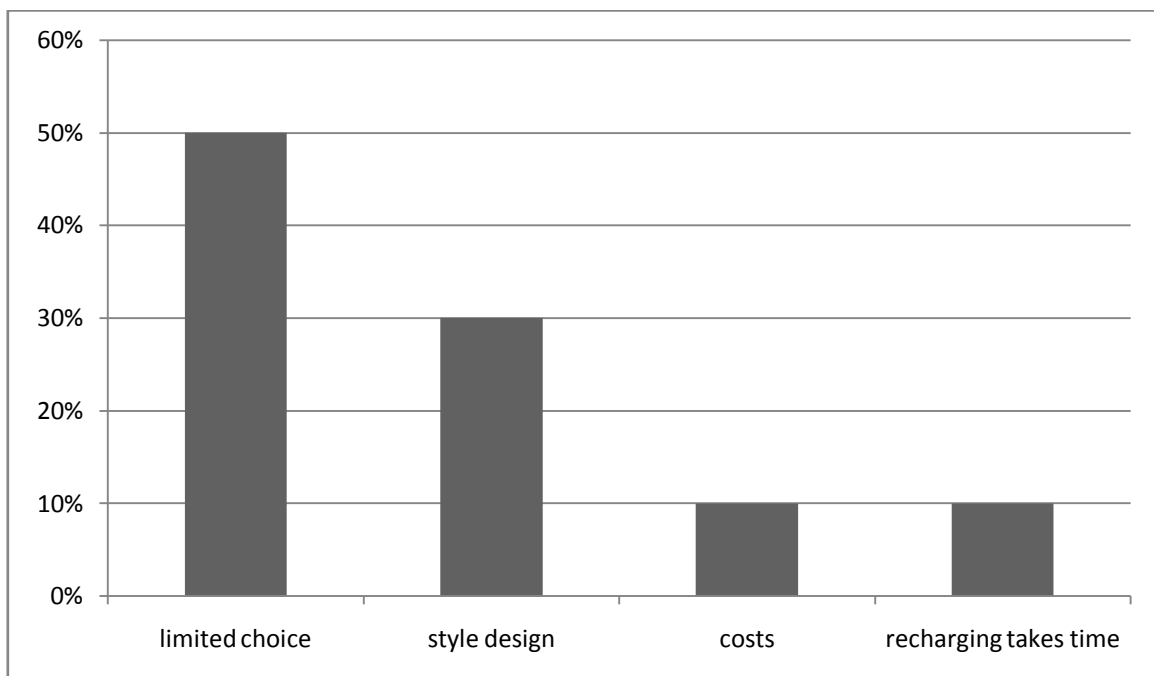
Statement	No of respondents in percentage
Reduce the dependency on fossil fuels	69.3%
Publicity	3.8%
Produce less carbon emissions	7.9%
No fuel costs	19%



INTERPRETATION: To find the consumer perception it’s important to find out the factors for selecting EV. Respondents considers less carbon emissions, less dependency on fossil fuels, inexpensive to run as important factors.

Question 5. Drawbacks of electric vehicles?

Statement	No of respondents in percentage
Limited choice	50%
Style design	30%
Costs	10%
Re charging takes times	10%

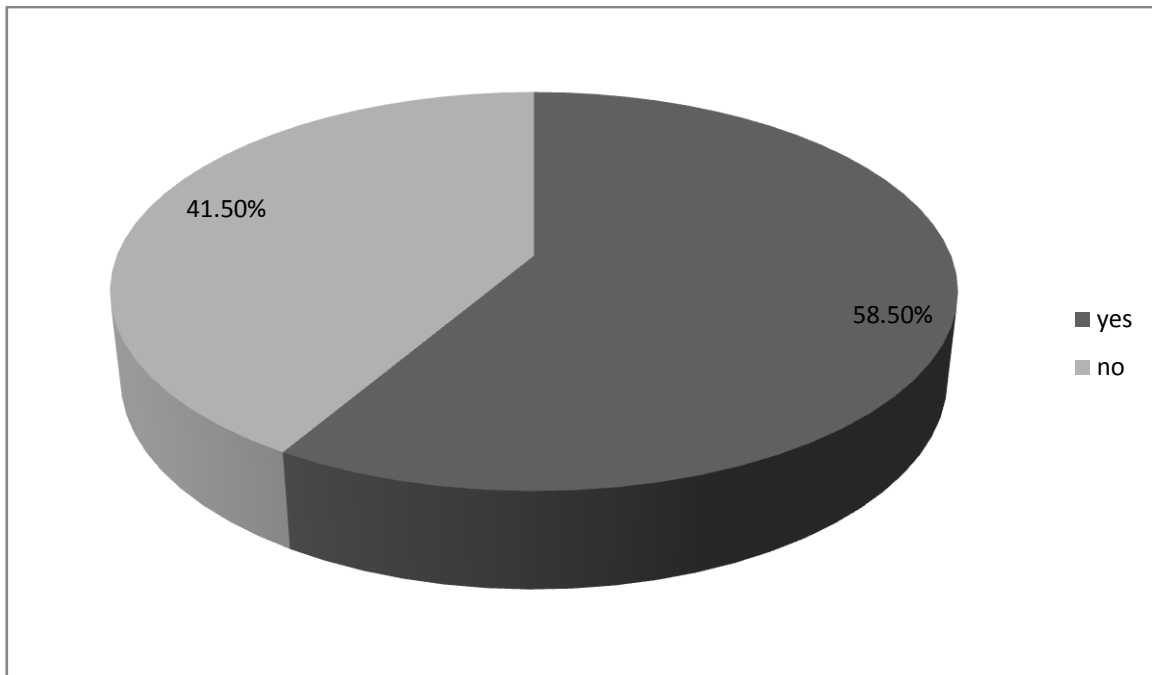


INTERPRETATION:

Respondents considers recharging time, limited charging stations, difficulty in charging as major drawback/limitation to consider EVs in current situation

Question 6. Do you think it is too early for electric vehicle cars , that they are not reliable enough?

Statement	No of respondents in percentage
Yes	58.5%
No	41.5%



INTERPRETATION:

Considering the current infrastructure and development of electric vehicle in india, majority of respondents considers that it is early for EVs to launch. Respondents were being asked about the various factors which influences the purchase decision of a vehicle. Majority of respondents consider performance, fuel efficiency, price, technical features and environment friendly as very influential, whereas they consider style, size and brand as moderately influential factors.

CONCLUSION:

Given the decline of fossil resources and the ongoing rise in fuel prices, India need an energy transition in cars. The government has taken action to reduce pollution levels by encouraging EVs and providing purchasing incentives. The government has relaxed FDI rules in order to promote output. Many new brands are developing. EVs are being introduced in India. The government and manufacturers should work together to establish infrastructure and create a favourable climate for EVs.

Respondents are aware of global climate circumstances and are willing to switch from conventional to eco-friendly automobiles. Cost is an essential consideration when purchasing an EV.

If sufficient infrastructure is provided, respondents are willing to accept EVs as a future buying option. The initial cost of purchase, the limited number of charging stations, and the time necessary to replenish the battery all pose challenges to increasing customer confidence.

REFERENCES:

1. https://ejmcm.com/pdf_7216_a56db3d7f55a5b1ac66729c3a1ce910e.html
2. [https://www.ijisrt.com/assets/upload/files/IJISRT22JUN196_\(1\).pdf](https://www.ijisrt.com/assets/upload/files/IJISRT22JUN196_(1).pdf)

3. Anable, J. and Morton, C., 2016. Exploring consumer preferences towards electric vehicles: The influence of consumer innovativeness. [online] Research Gate. Available at: [Accessed 24 March 2022].
4. Nath, S., 2022. Govt Policies of 2021 For Auto Sector To Help Boost EV Adoption. [online] India.com | Top Latest News from India, USA and Top national Breaking News stories. Available at: [Accessed 24 March 2022].
5. Kalra, R., 2022. The road to the future of electric vehicles in India. [online] Thehindu.com. Available at: [Accessed 24 March 2022].
6. <http://psychologyandeducation.net/pae/index.php/pae/article/view/1623>
7. <https://www.sciencedirect.com/science/article/pii/S0148296322005410>