

SYNOPSIS

Title: A STUDY ON THE PERCEPTION OF POTENTIAL CUSTOMERS TOWARDS ELECTRIC CARS

ABSTRACT - With the current depletion of fossil fuels and its price hike, there is a need for another energy resource to run the vehicle. The automobile sector is considering Electric Vehicle as a solution to the industry and environment in India. However, the current market penetration of EV is relatively low in spite of governments implementing EV policies. Through this paper potential scope of Electric vehicle in India will be studied and Consumer perception for same will be analysed.

The Topic of study was “A STUDY ON THE PERCEPTION OF POTENTIAL CUSTOMERS TOWARDS ELECTRIC CARS”

INTRODUCTION

India is a country with the third-largest road network in the world. Road travel seemed to be a preferred choice in India with over 60 % of the population used personal or shared vehicles to commute. (Statista , 2020)

Conventional vehicles are a major cause of global warming and environmental air pollution. All types of vehicles produce dust from brakes, tires, and road wear. The average diesel vehicle has worse effect on airquality than the average gasoline vehicle. But both gasoline and diesel vehicle pollutes more than the electric vehicle. (EEA , 2018)

Governments started using fiscal policies, such as road tax, to discourage the purchase and use of more polluting cars. Green tax is imposed while re-registering the vehicle after 15 years of use to make people discontinue the use of polluting vehicles and encourage them for fuel-efficient and less polluting vehicles. Fuel taxes may act as an incentive for the production of more efficient, less polluting, vehicle and the development of alternative fuels. High fuel taxes or cultural change may provide a powerful incentive for consumers to buy lighter, smaller, fuel-efficient cars, or to not drive. (transportpolicy)

The FAME India Scheme is an incentive scheme for promotion of electric and hybrid vehicles. It aims to promote electric mobility and gives financial incentives for enhancing EV production and the creation of electric transportation infrastructure. In 2015 the Ministry of Heavy Industries and Public Enterprises launched FAME to incentivize the production and promotion of eco-friendly vehicles including EV and hybrid vehicles. The scheme is proposed for establishing charging infrastructure (Jose, 2018)

The National Electric Mobility Mission Plan (NEMMP) 2020, a National Mission document providing the vision and therefore the roadmap for the faster adoption of EVs and its manufacturing. This plan has been designed to boost national fuel security, to supply affordable and environmentally friendly transportation, and to enable the Indian automotive industry to attain global manufacturing leadership. (Gulati, 2013)

STATEMENT OF THE PROBLEM:

With increasing in air pollution in urban areas and scarcity of fuels Electric Cars is in great demand but it is not used by most of the people because of lack of awareness. Thus the purpose of the study is to study the awareness level of consumers towards Electric Cars and also the perception of the users. Thus by creating awareness we can enhance the sales of Electric Cars

The objectives of the study are;

- To find out the awareness of consumer about the Electric Cars.
- To find out the reason why consumer perception to Electric Cars.
- To find out the factor influencing the sales of Electric Cars.
- To know the users perception about Electric Cars.

To suggest measures to increase sales of Electric Cars.

SAMPLING DESIGN:

Sampling unit : Users of two wheelers in hyderabad

Sampling size : 100

Sampling method : Non probability

Sampling technique : Convenience sampling

RESEARCH METHODOLOGY

STATEMENT OF THE PROBLEM:

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OBJECTIVES

- To find out the awareness of consumer about the Electric Cars.
- To find out the reason why consumer prefers to Electric Cars.
- To find out the factor influencing the sales of Electric Cars.
- To know the users perception about Electric Cars.
- To suggest measures to increase sales of Electric Cars.

DATA COLLECTION: The data collected for this study was collected from various sources. The main data collection instruments are of two types.

- a) Primary data collection
- b) Secondary data collection.

Primary data collection: Primary data are those, which are originated currently with exploration, carried out within the stipulated period of time. These are fresh data's collected in tune with the objective of the study.

Method of study: Structured questionnaire comprising of multiple choice questions are used as tool.

- Multiple choice questions makes easier for both field interviewer and respondents and it saves time. By this tabulations and analysis becomes much easier and simpler.

Secondary data collection:

These are the data that have already been collected by some other agency or researcher with the intension of using it for their own use. The source of secondary data being company' records, distributors, dealers, university research bureaus, company's data bases intended to discern the customer's response pertaining to the various topics and public research studies.

STATISTICAL TOOLS USEED FOR RESEARCH:

- Percentage analysis
- Bar graphs & pie charts
- Weighted average

Method of collection

1. Personal interview method.
2. Questionnaire method.

1. Personal Interview Method:

Here face to face interaction takes place and are orally interviewed. Here this method plays a very important role, because the respondents are very much involved with their busy schedules, thus this is the very easiest and earliest way to get the questionnaire completed.

Questionnaire method:

A questionnaire is used for the collection of data. And it consists of both close and open ended & multiple choice questions.

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Sampling unit : Users of two wheelers in Hyderabad

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DATA ANALYSIS: The data collected was edited, coded and tabulated and the results were subjected to further statistical interventions.

LIMITATIONS OF THE STUDY:

Some of the limitations of the study may be summarised as follows

- An underlying assumption for entire project is that the details and feedback received from population are true.
- It was difficult to find respondents as they were busy in their schedules and collection of data was very difficult. Therefore study had to be carried out based on availability of respondents.
- Some of the respondents were not ready to fill the questionnaire and some of them not ready to come out openly.
- Due to confidentiality of certain information not all details could be obtained from the company.
- Also the sample size of 100 may not truly represent whole population.

LIMITATIONS TO THE STUDY:

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LITERATURE REVIEW

Electric Vehicles: A Synthesis of the Current Literature with a Focus on Economic and Environmental Viability: Marcello Contestabile, Dr Gregory Offer, Dr Robin North, Aresearch concludes that the longer term uptake of EVs will depend heavily on progress in battery technology, to bring down costs and increase energy density, and on the provision of a suitable recharging infrastructure. (Marcello Contestabile, 2012)

Potential Need for Electric Vehicles, Charging Station Infrastructure and its Challenges for the Indian Market: by Praveen Kumar and Kalyan Dash, India should invest in small scale reinforcements to manage the load issues locally rather than going for an enormous change. Homecharging should be encouraged. Proper planning of place, population, traffic density and safety should be considered before implementing the massive scale charging infrastructure. The integration of activities within the energy and transport fields is important. Development goals through different innovative policies and programs, for instance, drivers of electrical cars are offered a financial consumer incentive, like tax credits, purchase subsidies, discounted tolls, free parking, and access to restricted highway lanes will help the market to grow. (Dash P. K., 2013)

Conventional, Hybrid, or Electric Vehicles: Which Technology for an Urban Distribution Centre?: by Philippe Lebeau, Cedric De Cauwer, Joeri Van Mierlo, Cathy Macharis, Freight transport has a major impact on urban movement. Researcher explored the possible integration of electric vehicles in urban logistics operations. A fleet with different technologies has the opportunity of reducing the costs of the last mile. Researcher presented a fleet size and mix vehicle routing problem with time windows for EVs. The main contribution of the authors was considering the variability of the range of EVs. In the segments of small vans, EVs are often the most competitive technology. In the segment of large vans, diesel has seen the most interesting solution from a financial point of view as electric vehicles would need to cover a longer distance to be cost-competitive. Hybrid vehicles are chosen in the segment of trucks as its running costs and fixed costs are lower than the diesel truck. (Philippe Lebeau, 2015)

Consumer preferences for electric vehicles: by Fanchao Liao, Eric Molin & Bert van

Wee, Widespread adoption of EVs may contribute to lessening of problems like environmental pollution, global warming and oil dependency. However, this penetration of EV is comparatively low in spite of governments implementing strong promotion policies. They presented a comprehensive review of studies on consumer preferences for EV aiming to convey policy-makers and give direction to further research. They compared the economic and psychological approach towards consumer preference for Electric vehicle. The impact of financial and technical attributes of EV on its utility is generally found to be significant, including its purchase and operating cost, driving range, charging duration, vehicle performance and brand diversity on the market. The density of charging stations also positively affects the utility and promotion of EV. The impact of incentive policies, tax reduction is quite effective. (Fanchao Liao, 2017)

International Council on Clean Transportation: Lingzhi Jin, Peter Slowik, The early market growth for electric vehicles continues, but a number of barriers prevent their widespread uptake. These barriers include the additional cost of the new technology, relative inconvenience of technology considering range and charge times, and consumer understanding about the availability and viability of the technology. This last point, typically referred to as “consumer awareness,” is crucial. (Lingzhi Jin, 2017)

Study on Electric Vehicles in India Opportunities and Challenges: by Mohamed M, G Tamil Arasan, and G Sivakumar, The replacement of ICE with electric engines will reduce pollution to a great extent and be profitable to consumers. Many countries have implemented this technology and are contributing to the improvement of the environment. The researcher saw the opportunities and challenges faced in India over implementing EVs. Opportunities like Government Initiatives, Batteries, Industries, and Environment have been considered. With these challenges like cost of EVs, efficiency of EVs in India and demand for EVs were taken into consideration. The implementation of EVs in India aims primarily to scale back greenhouse emissions and cut oil expenses. The govt. should make the foremost out of the opportunities available and find suitable ways to tackle the challenges. (Mohamed M, 2018)

Electric Vehicles in India: Market Analysis with Consumer Perspective, Policies and Issues: **Pritam**

K. Gujarathi, Varsha A. Shah, Makarand M. Lokhande, Indian Scenario is different because the current market share of EV/PHEV is around 0.1%. Presently almost all vehicles consider fossil fuel-based transportation. These pollute the atmosphere by the emission of greenhouse gases & causes global warming. The gap between domestic petroleum production and consumption is widening. India imports around 70% of oil required per annum. Hence there's an urgent need to investigate factors and challenges for sustainable and cleaner alternatives. (Pritam K. Gujarathi, 2018)

Perception and Awareness Level of Potential Customers towards Electric Cars: Masurali.A, Surya P, India contributes around 18% in transport sector alone in terms of carbon emission. The Electric Vehicle (EV) is one of the foremost feasible alternative solutions to beat the crises. Several automotive companies are introducing EVs and are expanding their portfolio. Promoting EVs can help reduce fuel dependence and pollution and beneficial for both consumers and the nation. The education of people has significantly higher influence over their awareness level on EVs. Apart from manufacturers, Government should strive hard to spread awareness and influence positive perception among potential customers. (Masurali.A, 2018)

A Study of Consumer Perception and Purchase Intention of Electric Vehicles: Pretty Bhalla, Inass Salamah Ali, Afroze Nazneen, Choice of cars depends upon environmental concern, cost, comfort, trust, technology, social acceptance, infrastructure availability. These arguments have been tested for both conventional cars and EVs. They assume that these factors have direct influence on individual choice of vehicle. They found that EV manufacturers and Government have to invest more in social acceptance of the vehicle by creating more infrastructural facilities, putting more thrust on technology to create trust. The analysis depicts that the population is well aware of the environmental benefits. The responsibility lies on the shoulders of the Government and manufacturers to investing in the manufacturing of vehicles. (Pretty Bhalla, 2018)

Electric Vehicles for India: Overview and Challenges: by Mr. A. Rakesh Kumar, Dr. Sanjeevikumar Padmanaban, Global pollution is on the rise and each effort made, is

to cut back the CO₂ emissions and save the earth. One such effort is the introduction of EVs. The transport sector is one in all the largest emitter of CO₂ and hence it's important to reduce it. The government has come up with ambitious plans of introducing EVs to the Indian market and confine pace with the event of EVs globally. The National Electric Mobility Mission Plan 2020 has included an in-depth report on the EVs. India encompasses a huge challenge in shifting the transportation sector from ICE engines to EVs. This needs lots of planning along with R&D. Charging infrastructure must be adequately build to deal with range anxiety. It's vital to form demand generation by making all government buses electric and offering tax exemptions for personal EV owners. (Mr. A. Rakesh Kumar, 2019)

Opportunities and Scope for Electric Vehicles in India: by Janardan Prasad Kesari, Yash Sharma, Chahat Goel, Developing an aggressive strategy for the adoption of EVs in India and ensuring a well- executed implementation is a challenge but vital for government. The geography and diversity of India will present problems that require thoughtful solutions. Public procurement is expected to be an important driver of growth of EVs, with the purchase of four-wheeled vehicles for government offices, three- wheeled vehicles and buses for public transport. Investments by fleet operators such as Ola and Uber, and operators of food distribution services, are also expected to boost the initial growth of two- and four- wheeled electric vehicles. However, the private EVs may take 5-6 years to gain popularity and acceptance. (Janardan Prasad Kesari, 2019)

Indian Electric Vehicles Storm in a teacup: Yogesh Aggarwal, Vivek Gedda and Kushan Parikh, Users of scooters, who need only to travel short distances, may consider an EV, but those, who need to travel longer distances and already own bikes like a Hero Splendor, may find it difficult to move to an e- 2W. For cars, it is relatively simple to improve the range with increased battery size. For electric 2Ws though, every increase in kWh may provide an extra 30km in range, but the increase in weight is around 10kg, approximately a 10% increase in the total weight of the bike. This weight issue is even more pronounced in smaller bikes (less than 150cc). (Yogesh Aggarwal, 2019)

CHAPTERISATION

Detailed/final Project Report will include the following chapters

CHAPTER –I

- Introduction
- Significance of the study
- Need of the study
- Objective and scope of study
- Methodology
- Limitations
- Scope

(Details of methodology used in studying and collecting the data and issue will be described)

CHAPTER –II

- Literature review
- Theoretical study

CHAPTER –III

- Industry & company profile

CHAPTER –IV

Analysis of the topic & Interpretation

(Descriptive work on the topic, this chapter will include analysis and interpretation of data tabulation and categorization)

CHAPTER –V

- Recommendation
- Bibliography
- Appendix

BIBLIOGRAPHY

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Marketing Management: Philip Kotler, Millenium edition

Consumer Behaviour: Leon Schiffman, Leslie Lazar Kanuk, 8th edition

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www.electriccars.com

www.mahashodamarketing.com

OTHERS:

Company manuals

Company Reports