

A STUDY ON CUSTOMER AWARENESS TOWARDS ELECTRIC VEHICLE WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT:-

This research investigates the current level of awareness and perceptions surrounding electric vehicles (EVs) within the general population. Employing a mixed-methods approach, including surveys and interviews, we aim to identify key factors influencing public knowledge and attitudes towards EVs. The study delves into the impact of socio-demographic variables, environmental concerns, and accessibility to charging infrastructure on individuals' willingness to adopt electric vehicles. Findings from this research contribute valuable insights for policymakers, industry stakeholders, and marketers, facilitating the development of strategies to enhance EV awareness and promote sustainable transportation practices.

Key words: Battery, charging infrastructure, range, electric motor.

INTRODUCTION

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. Electric Vehicles are the replacement for petroleum-based vehicles. They are one of the emerging technologies as well as eco-friendly and viable. The replacement of internal combustion engines with electric engines will reduce pollution to a great extent and be profitable to consumers. Many countries around the globe have implemented this technology and are contributing towards betterment of the environment.

OBJECTIVES:-

- To find the reason of conversion of fuel vehicles' to e- vehicle's.
- To find the awareness of e – vehicles among the publics.
- To find the advantages of owning a e-vehicles over than gasoline vehicles.

LIMITATIONS:-

- Limited Range: Electric vehicles (EVs) have a limited driving range on a single charge compared to traditional gasoline vehicles.
- Charging Infrastructure: The availability of charging stations may be limited, especially in certain regions, making it

challenging for EV users to find convenient charging locations.

- **Charging Time:** Charging an electric vehicle typically takes longer than refueling a traditional car, which can be inconvenient for users with tight schedules.

STATEMENT OF THE PROBLEM

"Despite advancements in automotive technology, there remains a persistent challenge of reducing carbon emissions from vehicles, contributing to environmental pollution and climate change. Current vehicle emissions standards are not stringent enough to curb this problem effectively, leading to negative impacts on air quality and public health. Addressing this issue requires innovative solutions in vehicle design, fuel efficiency, and alternative propulsion systems to achieve significant reductions in emissions while maintaining transportation efficiency and affordability.

REVIEW OF LITERATURE:-

C Simon Washington Nareiaee Haworth (2022) clarified that there are of now in excess of 700.urban communities working bicycle share programs. Indicated advantages of bicycle share incorporate adaptable versatility. Physical movement. Emanations and fuel use. Certain or express in the figuring of program benefits are presumptions with respect the methods movement supplanted by bicycle share.

Dr.Thulasi raval & Ms.Krishna vyas (2022),The government initiatives taken for the promotion of electric vehicles are still in the development stage. Although various agencies have been formed and various plans have been made by them, but their implementation is still not up to the mark. People's perception towards electric vehicles is not satisfactory because a large part of our society is still unaware of the various alternative technologies used in automobiles and

its benefits as well. Consumers will only prefer electric cars if they are comparable to existing vehicles in all the aspects. The replacement of the existing cars with the electric cars is possible only when consumer become increasingly conscious of the use of cleaner technologies.

Dr.Makesh kumar and kiruthika (Dec 2021),The concept of electric vehicle has entered into krishnagiri in the past 3-4years. As an eco-friendly product it is more suitable for city as it can reduce the emission of harmful gases and thereby it can reduce the atmospheric pollution. Due to frequent increase in the fuel prices, the electrically charging vehicles seem to be the cheapest one compared to the traditional vehicle. electric vehicle is more suitable for rural areas where the numbers of petrol bunk are not adequate, so that the rural people can charging the vehicle with the help of electricity.

Abdullah et al. (2019) has confirmed that the customer preference and their order of importance, price,Quality of service, branding are considered to be the important customer dimensions automobile industry. Knowing these dimensions relative influence may result better allocation on resources for effective services in electric vehicle industry

RESEARCH METHODOLOGY:-

Research Methods is defined as “tools or instruments used to accomplish the goals and attributes of study”.

METHOD OF DATA

COLLECTION:-

The data was collected for this study is

- **Primary data:** The primary data are those which are called fresh form Google forms for the primary time.

- **Secondary data:** The Secondary data is collected from journals, magazines and books, newspaper and internet.

AREA OF STUDY: The study was conducted in Coimbatore city.

SAMPLE SIZE: The sample size is 50.

**Analysis and Interpretation
Simple Percentage
Demographic profile of the respondents**

Table 1: Showing the demographic profile

S.N	Demographic		No of respondent	Percentage
1	Gender	Male	41	82%
		Female	9	18%
2	Age	Below 20	9	18%
		20-30	38	76%
		Above 30	3	6%
3	Occupation	Student	24	48%
		Business Person	7	14%
		Salaried	18	36%
		Others	1	2%
4	Yearly income	Less than 1 Lakhs	24	48%
		1 Lakhs to 3 Lakhs	18	36%
		3 Lakhs to 5 Lakhs	5	10%
		Above 5 Lakhs	3	6%
5	Type of vehicle	Gasoline	8	16%
		Electric	35	70%

Tools used for the analysis: Data analysing tools are Simple percentage and Chi-square test.

Simple percentage: Percentage base analysis helps to find which factor is significant among a number of factors.

Chi-square : A Chi-square statistics is used to test the measures of expectations.

	you use	Hybrid	7	14%
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Interpretation: Table 1 clearly states the demographic profile of the sample respondents. Most of them are Male. Majority of them are at the age of 21 to 30. Majority of them are Student. Most of the respondent’s yearly income was less than 1Lakhs. Majority of them are using Electric vehicle.

Chi-square analysis

A chi-square test is a statistical test used to compare observed value with expected value. The purpose of this test is to determine if a difference between observed data and expected data is due to chance, or if it is due to a relationship between the variables are studied.

The two variables are age and the rate of awareness of the respondents.

Table 2

S.N	Factors		No of respondent	Percentage
1	Age	Below 20	9	18%

		20-30	38	76%
		Above 30	3	6%
2	Rate of Awareness	Fully Aware	16	32%
		Partly Aware	30	60%
		Not Aware	4	8%

Interpretation: Table clearly states that the demographic profile of the respondents. Most of the respondents are partly aware on the electronic vehicles.

Particulars	Fully Aware	Partly Aware	Not Aware	Grand Total
Below 20	2	6	1	9
20 to 30	14	21	3	38
Above 30	0	3	0	3
Grand Total	16	30	4	50

Degree of freedom = (r-1) (c-1)

$H_0 = H_0$ is the null hypothesis. There is no relationship between the independent variable and the dependent variable.

$H_1 = H_1$ is the alternative hypothesis. There is relationship between the independent variable and the dependent variable.

Chi square analysis formula:

$$\chi^2 = \sum (O_i - E_i)^2 / E_i$$

O	E	(O-E) ²	(O-E) ² /E
2	2.8	0.64	0.22
6	5.4	0.16	0.02
1	0.72	0.078	0.09
14	12.16	3.38	0.27
21	22.8	3.24	0.14
3	3.04	0.16	0.05
0	0.96	0.92	0.95
3	1.8	1.44	0.8
0	0.24	0.05	0.20
50	50	10.06	2.74

Chi-square Table

Source: Primary source.

Significant Level:

Result

Calculated chi-square value is (2.74) which is less than the table value (7.815). Hence the hypothesis is not accepted.

Findings:

1. Majority 82% of the respondent are male
2. Maximum 48% of the respondent are student
3. Maximum 48% of the respondent’s yearly income is less than I Lakh
4. Maximum 70% of the respondents are using electronic vehicles
5. Majority 60% of the respondents are have aware on electronic Vehicles.
6. Majority of 42.1% of the respondent's reason to use e-vehicle is rise in petroleum
7. Maximum 46% of the respondent's use bike

8. Maximum 96% of the respondent owning a e-vehicle.
9. Maximum 40% of the respondent are purchase according to the TV advertisement.
10. Majority 82% of the respondent's category of using e vehicle people are male
11. Majority 68% of the respondent have access to Charging stations near home or workspace.
12. Majority 54% of the respondent drive less than 40kms in a single charge.
13. Majority 46% of the respondents wants improve the charging capacity.
14. Majority 52% of the respondent are prefer to buy Tesla.

SUGGESTION

Based on the findings, it's evident that there's a substantial level of awareness and interest in electric vehicles among the population surveyed in Coimbatore City. To further promote EV adoption, policymakers and industry stakeholders should focus on enhancing charging infrastructure accessibility, addressing range limitations, and implementing targeted awareness campaigns to address specific concerns raised by potential consumers.

CONCLUSION

The study highlights a significant level of awareness among Coimbatore's population regarding electric vehicles (EVs), particularly among males and students. Despite challenges such as limited charging infrastructure and range anxiety, there is a strong inclination towards EV adoption, suggesting a promising

future for sustainable transportation in the city.

REFERENCE

- Gong, S., Ardeshiri, A., & Rashidi, T. H. (2020). Impact of government incentives on the market penetration of electric vehicles in Australia. *Transportation Research Part D: Transport and Environment*, 83, 102353.
- Lebeau, K., Van Mierlo, J., Lebeau, P., Mairesse, O., & Macharis, C. (2013). Consumer attitudes towards battery electric vehicles: a large-scale survey. *International Journal of Electric and Hybrid Vehicles*, 5(1), 28- 41.