



A Study On Perception And Awareness Among Consumers Concerning E-Vehicles

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ABSTRACT

The increase on global emphasis sustainability and the changeover towards fresh Department of Energy solutions have propelled electric vehicles (EVs) into the spotlight. This survey aims to explore consumer perception and awareness regard electron volt, analyze factors such as environmental consciousness, cost-effectiveness, performance outlook, and technical advance. By surveying a diverse demographic, the research identifies primal drivers influencing consumer attitudes, alongside barriers such as range anxiety, infrastructure challenge, and affordability concerns. The survey also evaluate the role of governmental insurance, incentives, and marketing strategies in shaping consumer awareness and adoption. The finding provide actionable insights for policymakers, producer, and stakeholders to direct consumer concerns and enhance the appeal of EVs, fostering their integration into mainstream transportation.

KEYWORDS: Electric Vehicles, consumers, satisfaction, awareness and preferences.

INTRODUCTION

With the demand to tackle climate change gaining momentum all over the world, electric vehicles (EVs) have emerged as a great substitute for internal combustion engine fueled vehicles. Even though there are obvious ecological and economic advantages of EVs, the knowledge and acceptance of these vehicles among the consumers vary greatly. This study tries to look into the existing perception and knowledge level of consumers towards EVs including aspects such as EV technology knowledge, environmental concern, cost, and practical issues like the availability of charging stations. It is essential to grasp the perception of the consumers since it directly determines the rate of diffusion of EVs and the greening of transportation systems. The present research has the purpose of analyzing studies and marketing practices with regard to

studies, paradigms, and messages that depict how to enhance the adoption of EVs among the general public and influencers of policies that enhance the adoption of EVs.

REVIEW OF LITERATURE

In 2007, Lane and Potter stressed the burgeoning interest in electric vehicles (EVs) and the advancing technologies and environmental concerns. The research finds the common orientation does look forward towards the benefits of the environment and how hesitantly, considering the commerce costs or infrastructural challenges. The research proposes that a gap in bi-directional communication is the impeding factor drifting back a great level of consumer confidence.

Rezvani, Jansson, and Bodin (2015) conducted a wide-ranging review focusing on the psychological and socio-demographic determinants of EV purchasing. They found out that environmental awareness, social norms, and perceived ease, in a great way, were influencing consumer behavior. It must be pointed out, however, that barriers such as range anxiety and skepticism on battery life immensely restrict potential buyers. Authors suggested that technological improvements and mass education together might be a step forward in addressing those issues.

The study conducted by Egbue and Long (2012) delves into government policies and financial incentives ventures with an eye toward fostering EV adoption. Tax credits, subsidies, investments in charging infrastructure, or other financial incentives really stir public interest in favor of electric cars. Their studies revealed that the level of awareness concerning such policies is low and better dissemination of pertinent information is therefore crucial. The conclusions of their study therefore emphasized that efforts, strategically driven at the public policy decision class, aimed at joining hands with automobile makers, are highly essential in the speeding-up process of EV adoption.

SCOPE OF THE STUDY:

The study aims to show the consumer perception and awareness of electric vehicles (EVs) relative to the sustainable transport attempts, looking at factors like what consumers know, what their attitudes and acceptance levels are toward EVs, their concerns about cost, performance, and charging infrastructure, and the influence of demographic variables such as age, income, and location on consumer perceptions. Further, it examines government incentives, environmental concern, and marketing, all of which play a role in influencing consumer behavior. It provides insights to the policymakers and stakeholders who can act in favor of implementing the drivers to ensure EV adoption and removal of barriers of EV adoption. Finally, the conclusions will enable policy formulation that address the concerns of consumers in adopting EVs. The research works and seeks answers to practical demands to gain consumers' trust concerning EVs. Ultimately, it shall provide greater understanding and insight into the consumer mentality for achieving a seamless transition toward sustainable mobility solutions.

STATEMENT OF THE PROBLEM:

This paper examines the existent level of awareness and perception of electric vehicles (EVs) among consumers. Given the growing popularity of EVs as an ecologically friendly method of transportation, it has become imperative to comprehend consumers' views, understanding and worries in about acquiring one of these cars. This research intends to determine which factors shape their opinions towards EVs, such as the perceived environmental factors, economic factors, technologic factors and convenience. In this study, however, the authors will seek the answers to the questions about the unawareness and the viewpoints affecting consumer purchase making in order to help in promotion of EVs and contribute to the growth in the adoption of sustainable transport alternatives.

OBJECTIVES OF THE STUDY:

- ❖ To determine general awareness of electric vehicles across demographics.
- ❖ To recognize opinions-positive and negative-about electric vehicles.
- ❖ To identify factors that inform or drive consumer choices in the adoption of EVs
- ❖ To analyze misinformation or misconceptions about EV technology.

RESEARCH METHODOLOGY:

My research methodology is a part of the research paper which studies about the consumer perception and awareness towards electric vehicles. This research is to know about the consumer's perception and awareness towards the various types of electric vehicles available in the market.

Research Design:

The research was undertaken with title of 'A study on perception and awareness among consumers concerning e-vehicles.'

Data Collection:

Primary data: Questionnaire through Google form

Secondary data: Journals and websites

Sample Size:

104 respondents

Area of Study: This study focuses on perception and awareness among consumers concerning e-vehicles

Tools used for Data Analysis:

- ❖ Percentage analysis
- ❖ Chi-square test
- ❖ ANOVA

Hypothesis of the Study:

H₀: There is no significant relationship between Age and Recommendation of EVs to others

H₀: There is no significant relationship between Gender and their Type of preference to Electric Vehicles.

H₀: There is no significant relationship between Age and How familiar are you with the technology of E-vehicles.

LIMITATIONS OF THE STUDY:

Study is limited by its predominantly student-based sample, which may not represent all demographic groups. Additionally, the geographic focus restricts insights into regional variations in EV adoption and infrastructure challenges.

ANALYSIS AND INTERPRETATION:

TABLE 1: SOCIO ECONOMIC PROFILE

S.No.	Variable	Basis	Percentage
1	Age	20-40	53.8
2	Gender	Female	58.7
3	Salary	Upto 20000	49.0
4	Occupation	Student	84.6

INTERPRETATION:

The above table shows that 53.8% of the respondents fall in the age group of 20-40 years. 58.7% of the respondents are female, indicating a higher representation of females in the sample. 49.0% of the respondents earn up to 20,000. This suggests that a significant portion of the sample has a relatively lower income. A substantial 84.6% of the respondents are students. This highlights that the sample is predominantly composed of students.

CHI-SQUARE TEST:**TABLE-2 SHOWING RELATIONSHIP BETWEEN AGE AND THEIR RECOMMENDATION OF EV TO OTHERS**

		How likely are you to recommend electric vehicles to others?			Total
		Neutral	Unlikely	Very likely	
What is your age group?	20-40	32	2	22	56
	40-60	2	0	0	2
	Below 20	25	2	19	46
Total		59	4	41	104

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.656 ^a	4	0.799
Likelihood Ratio	2.397	4	0.663
N of Valid Cases	104		

a. 5 cells (55.6%) have expected count less than 5. The minimum expected count is .08.

Interpretation:

Since the significance value is higher than the prescribed value the null hypothesis is being rejected and the alternate hypothesis is accepted. Therefore there is significant relationship between the age of the respondents and their recommendation on EV to others.

TABLE-3 SHOWING RELATIONSHIP BETWEEN GENDER AND THEIR TYPE OF PREFERENCE TO ELECTRIC VEHICLES

		Which type of electric vehicles do you prefer			Total
		Bike	Bus	Car	
Gender	Female	29	3	29	61
	Male	17	7	19	43
Total		46	10	48	104

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.813 ^a	2	0.149
Likelihood Ratio	3.780	2	0.151
N of Valid Cases	104		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.13.

Interpretation:

H₀: There is no significant relationship.

Since the significance value is higher than the prescribed value the null hypothesis is being rejected and the alternate hypothesis is accepted. Therefore there is significant relationship between the gender of the respondents and their type of preference on EV.

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	0.279	2	0.140	0.197	0.822
Within Groups	71.634	101	0.709		
Total	71.913	103			

ANOVA:

TABLE-4 SHOWING RELATIONSHIP BETWEEN AGE AND HOW FAMILIAR ARE YOU WITH THE TECHNOLOGY OF ELECTRIC VEHICLES?

Interpretation:

Since the significance value is higher than the prescribed value the null hypothesis is being rejected and the alternate hypothesis is accepted. Therefore there is significant relationship between the age of the respondents and their familiar with the technology of EV.

FINDINGS:

58.7% of respondents are female. 53.8% of respondents are in the age 20-40 years. 84.6% people are students and 49.0% of respondents are earning upto 20000 per month. 55.8% of respondents have chosen very positive about electric vehicles. Majority of the respondents

that is 67.3% of respondents have chosen EVs and 46.2% of respondents prefer for buying electric bikes. 43.3% of respondents are familiar with the technology of electric vehicles. 47.1% of respondents primarily get information from social media. Environmental Benefits of electric vehicles are rated highly majority of the respondents rank them as 1.

SUGGESTIONS:

To enhance the study, it would be beneficial to increase the sample size and include a more diverse demographic to ensure a wider representation and more generalizable findings. Adding qualitative methods, such as interviews or focus groups, could yield deeper insights into consumer attitudes and concerns regarding EVs. Furthermore, exploring the impact of emerging technologies, like fast-charging networks or advancements in battery technology, could provide valuable perspectives on addressing key barriers such as range anxiety and affordability. Lastly, evaluating the effectiveness of current government incentives and public awareness campaigns would help pinpoint gaps and opportunities to boost EV adoption rates.

CONCLUSION:

The study highlights the increasing interest and awareness of electric vehicles (EVs) among consumers, especially among younger demographics. Environmental benefits are the primary factor driving positive perceptions of EVs, while concerns around battery performance, recyclability, cost, and charging infrastructure remain key barriers to widespread adoption. Social media emerges as the most influential source of information about EVs, highlighting the importance of leveraging digital platforms for educational campaigns. While a majority of respondents is optimistic that EVs will be the norm in transportation within the next 5–10 years, many more still harbor reservations and cite the need for further efforts to debunk misconceptions and overcome technological barriers. The findings also highlight the role of government incentives and public awareness initiatives as key drivers in building greater acceptance.

REFERENCE:

1. Infanta, A. V., & Ramprasath S (2024). A study of consumer perception and purchase intention of electric vehicles in reference to Tirunelveli district. *Journal of the Asiatic Society*, XCV, 69–75.
2. Aiswarya, P., & Santhanakrishnan, D. (2024). A study on consumer preference to purchase of groceries from online with reference to Big Basket. *Journal of the Oriental Institute*, 72(5), 109.
3. Dash, P. K. (2013). Potential Need for Electric Vehicles, Charging Station Infrastructure and its Challenges for the Indian Market. *Advance in Electronic and Electric Engineering*, 471- 476 .
4. Adhikari, M., Ghimire, L., Kim, Y., Aryal, P., & Khadka, S. (2020). Identification and Analysis of Barriers against Electric Vehicle Use. *Sustainability*, 12(12), 4850. <https://doi.org/10.3390/su12124850>
5. Selva, J., & Arunmozhi, R. (2020). Consumer preference on electric vehicles and its business in the global market. *Journal of Critical Reviews*, 7(4), 1-7.
6. Mohamed M, G. T. (2018). Study on Electric Vehicles in India Opportunities and challenges. *International Journal of Scientific Research in Environmental Science and Toxicology*.

7. Pretty Bhalla, Inass Salamah Ali, Afroze Nazneen (2018) “A Study of Consumer Perception and Purchase Intention of Electric Vehicle” European Journal of Scientific Research ISSN 1450 - 216X / 1450 - 202X Vol. 149 No 4 July, 2018, pp. 362 - 368 <http://www.europeanjournalofscientificresearch.com>
8. Albatayneh, A.; Assaf, M.N.; Alterman, D.; Jaradat, M. Comparison of the Overall Energy Efficiency for Internal Combustion Engine Vehicles and Electric Vehicles. *Environ. Clim. Technol.* 2020, 24, 669–680.
9. Adler, J.D.; Mirchandani, P.B. Online routing and battery reservations for electric vehicles with swappable batteries. *Transp. Res. Part B: Methodol.* 2013, 70, 285–302.
10. Oliver, J.D.; Rosen, D.E. Applying the environmental propensity framework: A segmented approach to hybrid electric vehicle marketing strategies. *J. Mark. Theory Pract.* **2010**, 18, 377–393.

