ORIGINAL RESEARCH PAPER

Human Resources

PERCEPTION OF ELECTRIC VEHICLES AMONG CUSTOMERS WITH SPECIAL REFERNCE TO COIMBATORE CITY

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ABSTRACT

This study investigates the perception of electric vehicles (EVs) among consumers in Coimbatore city, focusing on the opportunities and challenges associated with their adoption. As the automotive industry transitions towards sustainable mobility, understanding consumer attitudes and preferences towards EVs is imperative for effective market penetration. Utilizing both qualitative and quantitative methodologies, this research aims to provide insights into the factors influencing consumer perception, including environmental concerns, economic considerations, technological advancements, and infrastructure readiness. Through surveys, interviews, and observational data, the study seeks to identify key drivers and barriers shaping consumer decision-making processes regarding EV adoption in the Coimbatore region. Furthermore, it explores potential strategies to enhance consumer acceptance and promote the widespread adoption of EVs in the local market. The findings of this research contribute to the existing literature on EV adoption and offer practical implications for policymakers, industry stakeholders, and marketers aiming to facilitate the transition towards sustainable transportation in Coimbatore city and beyond.

INTRODUCTION

Concerns about energy security and environmental sustainability have sparked a revolutionary transformation in the automotive industry with the adoption of electric vehicles (EVs). At the forefront of this change is Coimbatore, a thriving city in Tamil Nadu, India, known for its dynamic culture and economic strength. Coimbatore provides a unique environment for researching how customers are responding to electric vehicles as awareness of the need for cleaner transportation options grows.

The objective of this study is to examine the factors that influence the Coimbatore region's customer acceptance of electric vehicles. Through an examination of consumer attitudes, perceptions, and preferences about electric vehicles, this research aims to provide light on the variables influencing the adoption of EVs in this urban environment.

This research project attempts to offer important insights for industry stakeholders, politicians, and researchers looking to support the sustainable transition to electric transportation in Coimbatore through a thorough investigation of these issues. This study aims to aid in the creation of efficient interventions that ease the integration of electric vehicles into the city's transportation ecosystem by clarifying adoption hurdles and proposing ways to improve customer acceptance.

In the end, it is anticipated that the research's conclusions would influence investment plans, market tactics, and policy choices meant to hasten Coimbatore's transition to electric vehicles and, in the process, promote a cleaner, greener, and more sustainable urban mobility future for the area.

Scope Of The Study:

The scope of a study on consumers' perceptions and adoption of electric cars (EVs) is broad and complex, covering a range of factors that influence the shift to sustainable transportation. A crucial component of the study's objectives is to identify the variables affecting consumers' acceptance of electric vehicles. Examining the effects of cost, incentives, range anxiety, charging infrastructure, and the accessibility of various electric vehicle models are all part of this. Data on consumer preferences and willingness to pay for electric vehicles can be analyzed by researchers. It is essential to comprehend how the general public views electric vehicles. The study might look into how much information and awareness there is about electric vehicles across various demographic groups and geographical areas.

It should evaluate opinions on electric vehicles, taking into account both worries about battery longevity and charging accessibility as well as projected advantages like lower operational and environmental costs and impact. The assessment of the environmental advantages of electric vehicle uptake is included in the scope. Studies on the reduction of energy consumption, local air pollution, and greenhouse gas emissions associated with the transition from internal combustion engine vehicles to electric vehicles are possible. Life-cycle analysis ought to be carried out to offer a thorough understanding of the effects on the environment.

Objectives Of The Study:

The following could be the goals of a study on how Coimbatore consumers are responding to electric vehicles:

1. Evaluating Coimbatore residents' knowledge of electric car usage.
2. Gaining insight into how consumers feel and perceive electric cars.
3. Assessing consumer receptiveness to adopting electric cars in light of variables including price, range, infrastructure, and charging stations.
4. Looking into possible obstacles to Coimbatore's extensive adoption of electric vehicles.
5. Analyzing customer preferences in Coimbatore for various electric vehicle types (such as electric automobiles and electric scooters).

Review Of Literature

1. Qian and Yin (2023) provide a conceptual model that argues that Chinese cultural values are crucial to comprehending Chinese consumers' intentions to purchase electric vehicles. It does this by analyzing the impact of human-nature interaction, long-term viewpoint, face awareness, and risk attitude on the decision-making process.
2. Feng et al. (2023) investigated the adoption of electric vehicles as a credible alternative to internal combustion engine vehicles and their emergence as a mobile intelligent terminal for social commerce. They used a fuzzy logic-integrated system dynamics (SD) model to mimic the adoption process. Their findings indicate that the advantage of incorporating social commerce in Electric Vehicles is an alternative push to drive Electric Vehicles adoption.
3. Chu et al. (2023) compared the psychological and behavioral elements that influence Electric Vehicles adoption and satisfaction in China and Korea. They Used samples from reasonably mature Electric Vehicles users

in four major Chinese cities (early Chinese majority) and members of the young Electric Vehicles community in Korea (early Korean adopters). They discovered that the early Chinese majority had a higher level of environmental concern. Consequently, environmental concerns were recognized as the key motive for the early Chinese majority to purchase an Electric Vehicle. But for early adopters in Korea, the most compelling reasons to purchase an Electric Vehicles were economic, i.e., reduced expenditure and government subsidies.

4. Okada et al. (2023) conducted a state-wide online survey to ascertain consumers' intentions to purchase and post-purchase satisfaction with electric vehicles in Japan. They established the relationship by the use of SEM. Additionally, they developed and analyzed two models that depicted non- Electric Vehicles owners' purchase intentions (Model I) and Electric Vehicles owners' post-buy satisfaction.

Research Methodology:

The process and methodology for gathering the data required to address the problem are specified in the research design. This research study used a descriptive research design, in which an existing problem is solved. Developing a research subject clarifies the nature of the research, including its subtypes (descriptive study, research problem, and survey research, co relational, semi-experimental, and experimental) and type (experimental, survey, and review). The descriptive method is employed in this investigation

Sampling Method:

As a result, there will be fewer samples because of the respondents' cooperation and time annoyance. In light of this, the researcher's convenient sampling technique facilitates sample collection. In this study, 131 respondents—both users and prospective buyers of electric vehicles—were identified.

Data Collection:

The process of data collection starts after finding the respondents of the study. The data can be collected through primary as well as secondary source of data.

Primary Data:

This is newly collected information that was obtained directly from the respondents. Since the information was appropriately provided by the respondents directly, it should be more accurate and dependable. Questionnaires, surveys, and interviews are the three basic methods used to collect primary data. The questionnaire is the primary focus of this investigation. It includes both closed-ended and open-ended questions.

Secondary Data:

These said to be the second hand data that is already prepared as soft or hard copy like journals, websites, books and newspaper. This study also makes use of websites, journals and records.

Table: Simple Percentage Analysis

Factors	Options	No.of. Respondents	Percentage
Gender	Male	76	58%
	Female	55	42%
Occupation	School student	7	5.3%
	UG	7.6	5.8%
	PG	1.1	8.4%
	Working	3.7	28.2%
Ever owned or used Electric car	Yes	100	88%
	No	13	12%
Family income of the respondents	50000-100000	22	16.8%
	100000-500000	65	49.6%
	500000-1000000	23	17.6%
	1000000 and above	21	16%
Ever driven an electric car or vehicle	Yes	79	60.3%
	No	52	39.7%
Perception of the charging infrastructure for electric vehicles	Excellent	35	26.7%
	Good	71	54.2%
	Fair	20	15.3%
	Poor	5	3.8%

Findings

1. The majority 33.6% of the respondents have age in between 20-22 years old.
2. The majority 58% of the respondents are male.
3. The majority 58% of the respondents are UG students.
4. The majority 49.6% of the respondents have family income as 100000-500000.
5. The majority 52.7% of the respondents have owned or used an electric vehicle.
6. The majority 60.3% of the respondents have somewhat familiar with electric vehicles.
7. The majority 48.1% of the respondents have main influencing factor as cost savings for purchase decision of electric vehicle.
8. The majority 55.7% of the respondents have somewhat concerned about the limited range of Electric Vehicle compared to traditional cars.
9. The majority 60.3% of the respondents have test drive the electric vehicle.
10. The majority 54.2% of the respondents have well about the perception on charging infrastructure for electric vehicles.
11. Majority 43.7% of the respondents have not likely to adopt electric vehicle if there is more public charging stations.
12. Majority 64.1% of the respondents have somewhat important in availability of financial incentives or rebates for purchasing an electric vehicle.
13. Majority 31.3% of the respondents have source of information from online search.
14. Majority 67.2% of the respondents are somewhat concerned about the environmental impact of your current vehicle.
15. Majority 55.7% of the respondents have perceived the maintenance costs of electric vehicle are about the same.
16. Majority 77.9% of the respondents have access to a dedicated parking space could install a home charging station.
17. Majority 65.6% of the respondents have aware of different types of electric vehicles.
18. Majority 35.9% of the respondents got range in between 200-300 km.
19. Majority 60.3% of the respondents have somewhat concerned about the resale value of electric vehicle.
20. Majority 58.8% of the respondents have prefer the look of traditional cars.
21. Majority 52.7% of the respondents have prefer used or new one.
22. Majority 61.8% of the respondents are somewhat important to check the availability of fast charging options.
23. Majority 81.7% of the respondents have interested in a subscription based service for electric vehicles.
24. Majority 53.4% of the respondents have about the same opinion on Electric Vehicle cars compared to traditional cars.
25. Majority 64.1% of the respondents have range of Electric Vehicle prices are willing to consider over 1500000.
26. Majority 54.2% of the respondents have somewhat concerned about the potential for the battery degradation.

Chi-square Test

1. There is a significant relationship between family income of the respondents and influencing factor to choose electric vehicles.

Suggestions

Increasing perception and awareness of electric vehicles (ELECTRICALVEHICLES) is crucial for accelerating their acceptance and achieving sustainability goals.

• Launch public awareness campaigns that highlight the benefits of Electrical vehicle, such as lower operating costs, reduced emissions, and convenience.
• Provide clear and concise information about charging infrastructure, range, and incentives for Electrical vehicle acceptance.
• Collaborate with schools and universities to incorporate Electrical vehicle education into curricula.
• Invest in expanding and improving public charging infrastructure, particularly in urban areas and along major highways.

CONCLUSION

In conclusion, increasing the perception and acceptance of electric vehicles (EVs) is a pivotal step toward a more sustainable and environmentally-friendly transportation future. To achieve this, a multi-faceted approach is essential. Firstly, education and information campaigns should be at the forefront of our efforts. These campaigns should not only emphasize the numerous benefits of Electric Vehicles, such as lower operating costs and reduced emissions but also provide accessible and clear information regarding charging infrastructure and available incentives. Furthermore, governments and local authorities play a pivotal role in shaping public opinion on Electric Vehicles. By offering financial incentives, tax breaks, and subsidies for, Electric Vehicle purchases, they can make these vehicles more financially appealing to a wider audience. Similarly, investments in expanding charging infrastructure are crucial, ensuring that consumers have convenient access to charging stations wherever they go.

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