



## CUSTOMER ATTITUDE TOWARDS ELECTRIC VEHICLES AND FUTURE DEMAND

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<b>Article History</b> <b>Received: 15 Aug 2023</b> <b>Revised: 28 Sept 2023</b> <b>Accepted: 29 Oct 2023</b>  <b>CC License</b> <b>CC-BY-NC-SA 4.0</b>	<b>Abstract:</b> The global automotive industry is undergoing a significant transformation with the rapid growth of electric vehicles (EVs). This study explores consumer attitudes and perceptions towards EVs and assesses their impact on the future demand for EV manufacturing. The transition from traditional internal combustion engine vehicles to electric vehicles is not only driven by environmental concerns but also by technological advancements, government policies, and shifting consumer preferences. The study's results indicate a promising trajectory for the future demand of EV manufacturing, with a significant potential for growth. The transition to electric mobility is not only an environmental imperative but also a business opportunity for automotive manufacturers. This research offers valuable insights for policymakers, industry leaders, and investors looking to understand and capitalize on the evolving landscape of electric vehicle production. <b>Key words:</b> Automotive industry, internal combustion, government policies, shifting consumers preferences, technological advancements
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### **1. INTRODUCTION:**

In recent years, the global automotive industry has undergone a transformative shift towards sustainable and eco-friendly transportation solutions. One of the most significant and promising innovations within this paradigm shift is the rapid growth of Electric Vehicles (EVs). The proliferation of EVs represents a critical step in reducing greenhouse gas emissions and mitigating the environmental impact of traditional internal combustion engine (ICE) vehicles. As the world grapples with the consequences of climate change, transitioning to electric vehicles has become imperative for reducing carbon emissions and achieving a sustainable future.

This study seeks to investigate and understand customer attitudes towards electric vehicles and the potential future demand for EV manufacturing. It is pivotal to explore these factors as they influence not only the automotive industry but also broader efforts to mitigate climate change and transition to sustainable energy sources. Electric vehicles have gained momentum worldwide, thanks to advancements in technology, government incentives, and increasing environmental consciousness among consumers. To ensure a successful transition towards EV, it is crucial to understand consumer perspectives, needs, and concerns.

### **2. LITERATURE REVIEW:**

Dr. Priyanka Ranawat, Sashant Sharma & Mr. Suraj Kumar (2023), looked at the feasibility of the market and consumer attitudes towards electric cars (EVs) in India. They stated the current situation of the EV market in India, the variables impacting consumer behaviour towards EVs, and the complexity and prospective for market sustainability in their research. They explained the overview of the history and relevance of EVs, outlining the study's goals.

Priyanshu Kumar, Shahil Alam & Prof. Dr. Avinash Rana (2022), have used YouTube as a source for gathering of data and used various tools such as data cloud, sentiment analysis in order to know about the awareness of users of electrical vehicles and reviewed, because Electrical Vehicles are eco friendly and offer lot of other benefits. Also they mentioned that it becomes really significant to figure out the areas where electrical vehicles are lacking.

Prachi & Priya Goswami (2020) stated that, when most of the countries are setting goals for EV acceptance and many of them are declining short, now is the time where the government needs to step in and alleviate the norms for EVs so that people can go for the incentives. They opined that, improvements in EV's over the ancestor and electric driving variety and there is mixed confirmation of the success of government incentives because still people are not ready to pay for so much instead of moving towards ICE vehicles, also it is not that people are unwilling to wait they have shown good signs but the actual-to-action gap is too much.

### **3. NEED:**

The urgent global requirement to decrease carbon emissions and advance sustainable transportation underscores the necessity of this investigation. The embrace of electric vehicles stands out as a pivotal approach to reduce carbon emissions and foster sustainability, and the transportation sector significantly contributes to the discharge of greenhouse gases.

This research holds utmost importance in predicting the consumer inclination towards electric vehicles and moulding strategies for EV production. Policy architects and manufacturers can more effectively

promote the advancement of the EV sector if they grasp the elements impeding the assimilation of EVs and 28 the determinants propelling consumer conduct towards such vehicles.

**4. OBJECTIVES OF THE STUDY:**

- To understand the experience of using electric vehicles.
- To study the potential customers attitude towards electric vehicles and their likelihood of purchasing an EV in the near future.
- To assess the demand for electric vehicles and its potential growth in the market.
- To understand the growth of electric vehicles in India.

**5. RESEARCH DESIGN:**

Descriptive research was applied for examining a study by considering total population for the Mahindra Electric Mobility Limited, Bangalore location for the survey. Convenience sampling was used for examining the future demand on EV manufacturing with a sample size 100 respondents.

**Sample Size:** The study will aim to collect responses from 100 dealers of Mahindra Electric Mobility Limited.

**6. HYPOTESIS:**

Null Hypothesis (H0): The age of respondents does not significantly influence their attitudes and perceptions towards electric vehicles.

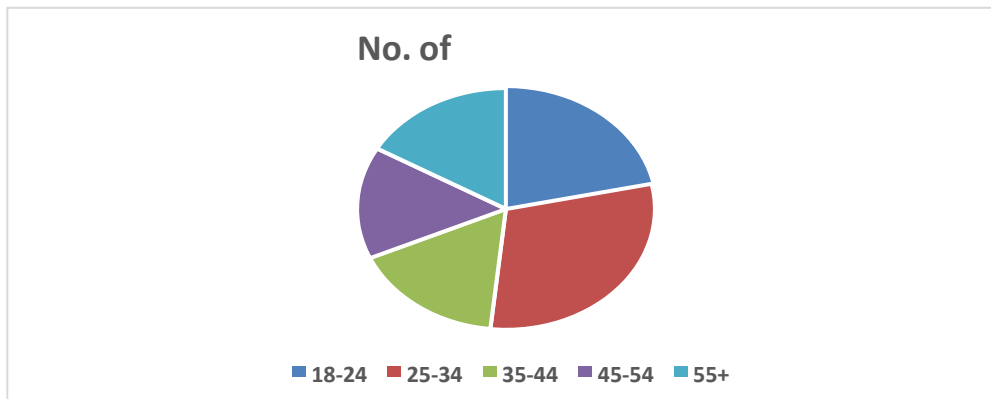
Alternative Hypothesis (H1): The age of respondents significantly influences their attitudes and perceptions towards electric vehicles

**7. DATA ANALYSIS AND INTERPRETATION**

**TABLE No- 1: Age Distribution of Respondents**

<b>Response</b>	<b>No. of Respondents</b>	<b>Percentage</b>
18-24	22	21.7%
25-34	37	30.0%
35-44	18	16.7%
45-54	9	15.0%
55+	14	16.7%
<b>Total</b>	<b>100</b>	<b>100.0%</b>

**CHART NO-1: Age Distribution of Respondents**



**Interpretation:**

The study has a diverse age range of respondents, with a larger proportion of respondents belonging to the younger age group (18-34 years old). This indicates that the attitudes and perceptions towards electric vehicles may be more influenced by the younger generation who are more open to new technologies and environmental issues.

**HYPOTHESIS- 1:**

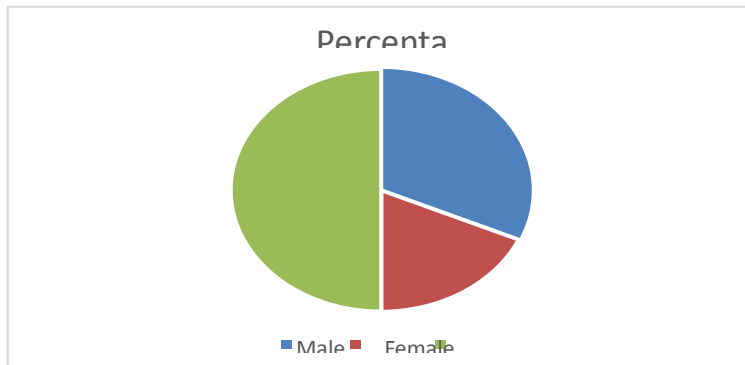
H0: The age of respondents does not significantly influence their attitudes and perceptions towards electric vehicles.

H1: The age of respondents significantly influences their attitudes and perceptions towards electric vehicles.

**TABLE NO 2: Gender Distribution of Respondents**

Response	No. of Respondents	Percentage
Male	58	63.33%
Female	42	36.67%
Total	<b>100</b>	<b>100.00%</b>

**CHART NO .2: Gender Distribution of Respondents**



**Interpretation:**

From the chart above, we can infer that the gender distribution of the respondents is skewed towards males. This could impact the generalizability of the study's findings as the sample may not be fully representative of the population. Future studies should aim to recruit a more balanced sample of male and female respondents to ensure greater generalizability of results.

**HYPOTHESIS- 2:**

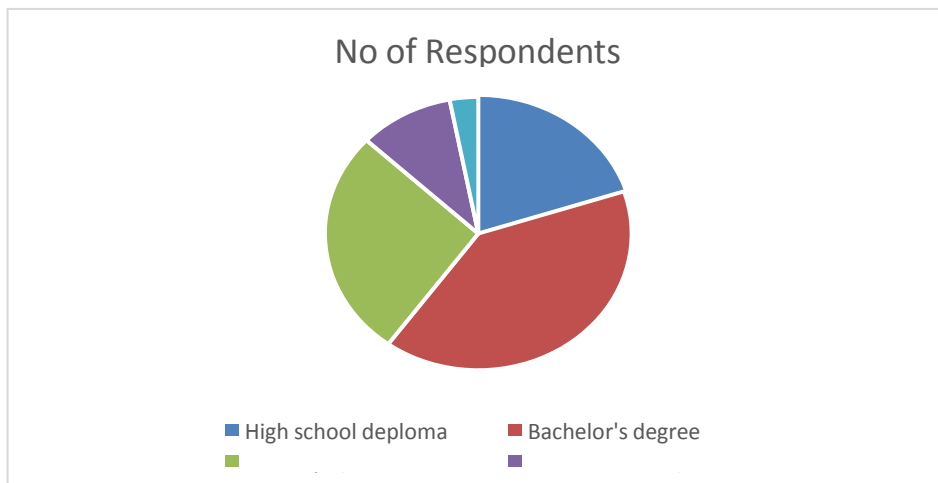
H0: The gender distribution of the respondents in the study is not skewed, and there is no impact on the generalizability of the findings.

H2: The gender distribution of the respondents in the study is skewed towards males, which impacts the generalizability of the findings.

**TABLE NO 3: Educational Qualification of Respondents**

Response	No of Respondents	Percentage
High school diploma	16	20%
Bachelor's degree	45	40%
Master's degree	24	26.67%
Doctorate or other	10	10%
Professional degree	5	3.33%
<b>Total</b>	<b>100</b>	<b>100%</b>

**CHART NO .3: Educational Qualification of Respondents**



**Interpretation:**

The educational qualification of the respondents indicates that the majority of participants are highly educated, with a significant proportion holding a Bachelor's or Master's degree. This suggests that the sample is likely to have a good understanding of electric vehicles and the factors that influence their adoption.

**HYPOTHESIS 4:**

H0: Respondents' occupation does not significantly influence their potential to purchase an electric vehicle.

H4: Respondents' occupation significantly impacts their potential to purchase an electric vehicle

**Table no 4: Table showing correlations**

Descriptive Statistics	Mean	Std. Deviation	N
How do you rate the performance of electric vehicles compared to gasoline vehicles	2.65	0.997908	100
Reasons for Likelihood of Purchasing an Electric Vehicle	2.36	0.997909	100

**Null hypothesis (Ho):** There is no significance difference between performance of electric vehicles and Purchasing an Electric Vehicle

**Alternative hypothesis (H1):** There is significance difference between performance of electric vehicles and Purchasing an Electric vehicle

### **Interpretation**

There is no significance difference between performance of electric vehicles and Purchasing an Electric Vehicle correlation value is less than 0.1 so we can accept the null hypothesis.

### **ANANLYSIS**

From the chart above, it can be concluded that there is a lack of enthusiasm among consumers towards electric vehicles, with a majority of respondents indicating that they are either somewhat unlikely or very unlikely to purchase an electric vehicle in the next five years. This highlights the need for EV manufacturers to address the concerns of consumers and promote the benefits of electric vehicles to encourage adoption.

## **8. FINDINGS**

Below we summarize the results of the study on consumer perception of electric vehicles and expected demand for electric vehicle production. The research sought to identify factors influencing consumer acceptance of electric vehicles, assess current adoption rates, and identify potential future trends in demand and production of electric vehicles.

Consumer Adoption of Electric Vehicles: Factors Research has found many factors that influence consumer adoption of electric vehicles. Driving range, charging infrastructure, price, incentives, attitudes towards the environment, customer trust, perceived behavioural control, self-identification, perceived risk, word of mouth marketing and consumer awareness are some of these variables.

## **9. SUGGESTIONS**

1. Increase awareness and education: It is important to increase awareness and education among consumers about the benefits of electric vehicles. This can be done through marketing campaigns, educational programs, and other initiatives that promote the benefits of EVs. By increasing awareness and understanding, consumers will be more likely to consider electric vehicles as a viable alternative to traditional gasoline vehicles.

2. Develop charging infrastructure: The availability of charging infrastructure is a major concern for consumers when it comes to electric vehicles. Therefore, it is important to develop and expand the charging infrastructure for EVs, particularly in public areas and along major highways. This will alleviate range anxiety and encourage more consumers to adopt electric vehicles

## **10. CONCLUSION**

Key elements affecting customers' adoption of electric cars are highlighted in a research of consumer perceptions of EVs and projected EV production demand. The research shows that more people are considering electric cars as a viable alternative to gasoline-powered automobiles, but that their mainstream acceptance is hampered by a number of factors.

Several elements, such as charging infrastructure, government regulations, financial incentives, societal norms, trust, psychological factors, and product features, were found to influence the uptake of electric cars in the literature study.

## 11. REFERENCES

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