



## Recent trends in Management and Commerce

Vol:2(2),2021

REST Publisher

ISBN:978-81-936097-6-7

Website:<http://restpublisher.com/book-series/rmc/>



# A study on factors positively influencing the purchasing decisions of consumers towards Electric Vehicles with reference to Chennai city

Lakshmi Vijayaraghavan, Dr. S. Rukmani

Shri Shankarlal Sundarbai Shasun Jain College for Women, Chennai, Tamil Nadu, India.

Email: iammailedalways@gmail.com

### Abstract

The study focuses on identifying the various factors that positively influence the consumers on purchasing the electric vehicles. The study also finds out the influence and relationship between selected demographic factors on factors impacting the purchase decisions. Statistical tools like chi square test and frequency analysis has been used in the study.

Keywords: Electric Vehicles, purchase decisions, benefits of EV.

### Introduction

The concept of Electric Vehicles or in short EVs has been around for a long time, but it has gained significant interest only in the past decade. While the increase in carbon footprint and other environmental impacts of the fuel-based conventional vehicles has forced policymakers around the world to look up electric vehicles seriously, India's efforts to implement electric vehicles has not yielded much. India made its first concrete decision to provide incentives for EVs in 2010. The government of India announced incentives for Indian electric vehicles manufacturers under an Rs 95-crore scheme approved by the Ministry of New and Renewable Energy (MNRE). Since then, the central government has taken various steps to get more Indian consumers to adopt EVs, primarily under Prime Minister Manmohan Singh and then under Narendra Modi. The Indian Electric Vehicle market is a profitable area of investment for international organizations. But the market also faces various challenges. These challenges can be overcome with the support of reliable automotive consulting companies. In order to make the electric vehicles market more predominant and a main mode of transport there are still a lot of developments needed in the sector. The new foreign organizations looking for opportunities to establishing their business in India has to first conduct a thorough market analysis. The organizations have to study about the policies and behavior of the consumers in order to achieve sustainable development in the market. There is also a necessity to consult other firms regarding the improved roles of India as it helps in facing the upcoming challenges with end to end marketing strategy.

### Objectives of the study

To explore the factors positively influencing the purchasing decision of Electrical Vehicles among consumers. To study the influence of selected demographic like Age, education, salary, marital status on factors influencing purchasing decisions. Limitations Of The Study The geographical location of the study is confined to Chennai city. There is a time constraint for conducting the study. Research Methodology Sampling Technique Simple random sampling method was used in this study. Sample Size The sample size of the study is 550. Statistical Tools Used For Data Analysis Chi-square test Frequency analysis

### Review of Literature

Sonaligoel (2021) according to the study the author states that sale of Electric Vehicles has been dormant in India. Various cities like Bangalore, Hyderabad are trying to convert their corporation vehicles to Electric Vehicles. There is enthusiasm among consumers to adopt Electric Vehicles. The main factors influencing the adoption are lack of knowledge and lack of charging infrastructure. The study also points out that interest of consumers to own a four wheeler Electric Vehicles is low. The government has introduced many schemes and is focusing on solar charging units. Shwetha kishore (2021) the research study found that majority of the consumers are in favour of eco-friendly vehicles. The consumers prefer cost of Electric Vehicles to be around 5 to 10 lakhs. The main factors influencing the positive decision of the consumers are less carbon emissions, less dependency on fossil fuels and low maintenance cost. The major drawbacks are high charging time and limited charging infrastructure. The study points out that in the current infrastructural status it is difficult to launch Electric Vehicles. •Xiao-wu wang (2021) the author has conducted a study on consumer perceptions and social attributes. The study states that the perceptions of consumers towards government incentive policies are heterogeneous. There is also a change in perception according to the genders. The study found that environmental well being, social and self attributes are highly influential than policy perceptions of the consumer. The author suggests that the social consciousness of the consumer has a significant impact on their battery Electric Vehicle purchasing decisions. Parmeetsingh (2020) conducted a survey on factors that makes Indian consumers buy Electric Vehicles. The survey concluded there is range anxiety among consumers; battery replacement and high cost are the top concerns in purchasing an Electric Vehicle. The total sales of

Electric Vehicles have increased by 20% in 2019-20. The inability of Electric Vehicles to cover long distances also has an impact in the perception of the consumers. The survey also found that consumers prefer buying Electric Vehicles from established brands only.

### Data Analysis and Interpretation

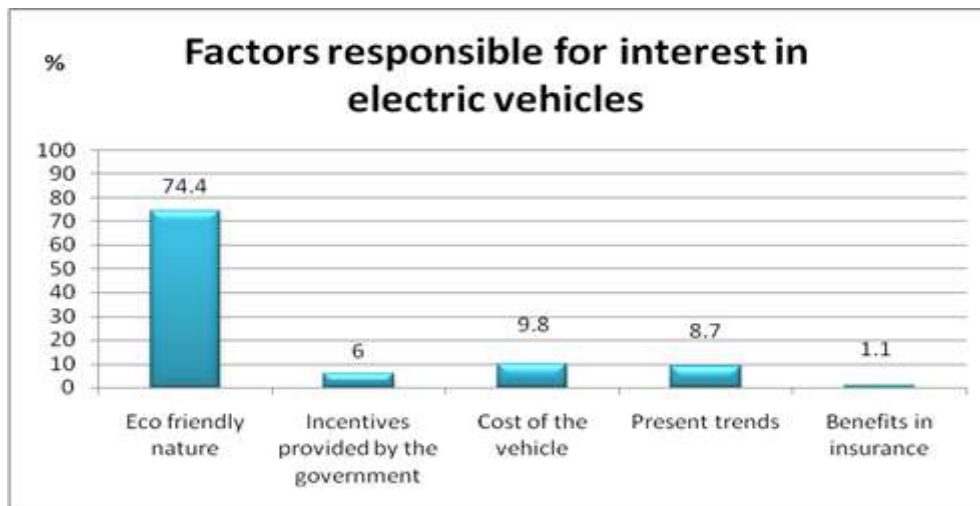
**TABLE .1** Showing the frequency of factors that get respondents interested towards Electric Vehicles

factors that gets respondents interested towards Electric Vehicles	Frequency	Percent
Eco friendly nature	409	74.4
Incentives provided by the government	33	6.0
Cost of the vehicle	54	9.8
Present trends	48	8.7
Benefits in insurance	6	1.1
Total	550	100.0

(Source: Primary Data)

Inference: According to the above table, 74.4% of the respondents are interested in Electric Vehicles due to its eco friendly nature followed by 9.8% for the cost of vehicle, 8.7% due to present trends and 6% for incentives provided by the government. Only 1.1% of respondents consider benefits in insurance as a desirable factor.

**CHART NO.1** Factors responsible for interest in electric vehicle



Chi-Square test: Chi-square test for relationship between demographic variables and factors that gets respondents interested in Electric Vehicles.  $H_0$ : There is no significant relationship between demographic variables and factors that gets respondents interested in Electric Vehicles.  $H_1$ : There is a significant relationship between demographic variables and factors that gets respondents interested in Electric Vehicles.

### Inference

Age: from the above table it can be seen that the p value is .000 which is less than 0.05. Thus, it can be inferred that there is a significant relationship between age of the respondents and factors that gets them interested in electric vehicles. Since p value is less than 0.05 the null hypothesis ( $h_0$ ) is rejected and alternate hypothesis ( $h_1$ ) is accepted. Gender: from the above table it can be seen that the p value is .008 which is more than 0.05. Thus, it can be inferred that there is a significant relationship between gender of the respondents and factors that gets them interested in electric vehicles. Since p value is less than 0.05 the alternate hypothesis is accepted ( $h_1$ ) and null hypothesis ( $h_0$ ) is rejected. Marital status: from the above table it can be seen that the p value is .005 which is less than 0.05. Thus, it can be inferred that there is a significant relationship between marital status of the respondents and factors that gets them interested in electric vehicles. Since p value is less than 0.05 the null hypothesis ( $h_0$ ) is rejected and alternate hypothesis ( $h_1$ ) is accepted. Educational qualification: from the above table it can be seen that the p value is .000 which is less than 0.05. Thus, it can be inferred that there is a significant relationship between educational qualification of the respondents and factors that gets them interested in electric vehicles. Since p value is less than 0.05 the null hypothesis ( $h_0$ ) is rejected and alternate hypothesis ( $h_1$ ) is accepted. Employment status: from the above table it can be seen that the p value is .037 which is more than 0.05. Thus, it can be inferred that there is no significant relationship between employment status of the respondents and factors that gets them interested in electric vehicles. Since p value is more than 0.05 the null hypothesis ( $h_0$ ) is accepted and alternate hypothesis ( $h_1$ ) is rejected. Salary: from the above table it can be seen that the p value is .001 which is less than 0.05. Thus, it can be inferred that there is a significant relationship between salary of the respondents and factors that gets them interested in electric vehicles. Since p value is less than 0.05 the null hypothesis ( $h_0$ ) is rejected and alternate hypothesis ( $h_1$ ) is accepted.

**TABLE 2.** Chi-square test between demographic variables and factors that gets respondents interested in Electric Vehicles.

Demographic factors	Chi square Value	df	P value	Significance	Decision regarding H <sub>0</sub>
AGE	45.581 <sup>a</sup>	16	.000	Significant ( P value less than 0.05)	Rejected
GENDER	48.591 <sup>a</sup>	8	.000	Significant ( P value less than 0.05)	Rejected
MARITAL STATUS	14.912 <sup>a</sup>	4	.005	Significant ( P value less than 0.05)	Rejected
EDUCATIONAL QUALIFICATION	40.234 <sup>a</sup>	12	.000	Significant ( P value less than 0.05)	Rejected
EMPLOYMENT STATUS	37.718 <sup>a</sup>	24	.037	Not Significant ( P value more than 0.05)	Accepted
SALARY	41.014 <sup>a</sup>	16	.001	Significant ( P value less than 0.05)	Rejected

(Source: Computed data)

### Findings, Suggestions and Conclusion

Factors influencing purchasing decisions of respondents: It is found that 74.40% of respondents feel that the eco friendly nature is the key factor creating interest on electric vehicle. It is followed by factors like cost, present trends and incentives provided by the government. The least influencing factor is found to be benefits in insurance. Relationship between demographic variables and factors affecting the interest of respondents towards electric vehicles: The study has found out that all demographic factors except employment status has a significant relationship with factors that create interest towards Electric Vehicles. Suggestions: The Government should provide more insurance benefits for consumers purchasing Electric Vehicles. The introduction of new schemes may also help in positively influencing the purchasing decisions of consumers. CONCLUSION: The study mainly focused in identifying the factors influencing the purchasing decisions of consumers towards Electric Vehicles. The consumers are aware of the benefits of shifting to Electric Vehicles from conventional vehicles and also their attitude towards Electric Vehicles is found to be positive. If the required infrastructure and financial support is provided by the government, the Electric Vehicles market would surely meet its forecasts.

### References

1. Prameetsingh article on TERI: What would make Indians buy EVs? Our survey has some answers(11<sup>th</sup> sept 2020).
2. Prof. Shwetha Kishore European Journal of Molecular & Clinical Medicine ISSN 2515-8260 Volume 7, Issue 8, 2020 4861 consumer perception of electric vehicles in India.
3. Sonali Goel, Renu Sharma, Akshay Kumar Rathore A review on barrier and challenges of electric vehicle in India and vehicle to grid optimisation, Transportation Engineering, Volume 4, 2021, 100057, ISSN 2666-691X,
4. Xiao-Wu Wang, The influences of incentive policy perceptions and consumer social attributes on battery electric vehicle purchase intentions volume 151 energy policy 112163.