# CONSUMER ATTITUDE AND PERCEPTION TOWARDS ELECTRIC VEHICLES

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## ABSTRACT

*This work is to discover that to what extent some issues are key to explain consumer willingness to buy an electric vehicle. While examining this research, the researcher finds the customers' approaches towards modern technologies. The researcher could also find that whether the changes that took place in the world, are adaptable to the customers in their lifestyle. The research can open a new insight to the electric vehicle manufactures or dealers, so that they can segment their market more effectively based on consumer attitude and perception. The study also implies the factors that discourage customers from buying an electric vehicle and by effectively using proper techniques electric vehicle manufactures can overcome this problem. This study focuses on the fact that there may be a chance of more persons shifting to electric vehicles in future and by increasing social awareness the electric vehicle manufactures can make huge profits. The idea is communicated by testing 7 hypotheses. Chi-square test, t-test, ANOVA and correlation are used for analysis.The hypothesis are derived from 4 objectives.*

**Keywords:** Consumer attitude, Perception, Environmental Consciousness.

**JEL Classification Number:** F31, F41.

## INTRODUCTION

An attitude is a lasting, general evaluation of people, objects, advertisements, or issues. Attitudes are lasting because they tend to endure over time. Perception is the process by which people select, organize and interpret sensations. The history of the automotive industry was initially linked to electricity. Nowadays, because of several factors, the automotive industry has been researched on electric vehicles for several decades, although this industry will have to overcome important obstacles to commercialise this kind of vehicle efficiently.

One of the factors that lead us to take this research was customers' environmental consciousness towards electric vehicle. We think that in future the electric vehicles have important role and introduction of electric vehicles will reduce the usage of fossil fuels.

This work is to discover that to what extent some issues are key to explain consumer willingness to buy an electric vehicle. While examining this research we find the customers' approaches towards modern technologies. We could also find that whether the changes that took place in the world, are adaptable to the customers in their lifestyle.

### Review of Literature

Literature review in this study discusses the argumentative comments of different researchers on the theories of "*Consumers Attitude And Perception Towards Electric*



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*Vehicles"*.

The study "*Attitude of European car drivers towards electric vehicles*" was conducted by Thiel, (2012). This study aims at describing and analyzing how car drivers in the six countries France, Germany, Italy, Poland, Spain, and United Kingdom consider electric cars, how familiar they are with the electric car concept and its main features. 600 drivers on average per each of the six Member States responded to the questionnaire. The study concluded that European car drivers see the opportunities that electric vehicles could offer but that a number of pre-requisites need to be fulfilled in order to ensure that the car drivers can consider electric vehicles as a credible vehicle choice.

The study "*Barriers to widespread adoption of electric vehicles: An analysis of consumer attitudes and perception*" conducted by Ona Egbue, Suzanna Long in 2012. This research identifies potential socio-technical barriers to consumer adoption of EVs and determines if sustainability issues influence consumer decision to purchase an EV. This study provides valuable insights into preferences and perceptions of technology enthusiasts; individuals highly connected to technology development and better equipped to sort out the many differences between EVs and CVs. These results can guide policymakers in crafting energy and transportation policy.

The study "*Consumer attitudes towards battery electric vehicles*" a large scale survey conducted by Kenneth (2013).This study presents the results of a large-scale data collection (survey with 1196 respondents) held in Flanders (Belgium).The results include perceptions on the advantages and disadvantages of Battery Electric Vehicles (BEVs), the acceptable driving range, the acceptable charging time (both slow and fast), the acceptable maximum speed, the role of the government in the introduction of BEVs, the preferred governmental tools to maximise sales and the consumers' Willingness to Pay (WTP).

The study, "*Predicting purchase intention of electric vehicles*" were conducted in Hong Kong. The major objective is to examine benefits and problems of adopting EVs. The study was tested with survey data from 205 Hong Kong respondents from the automobile community. This study offers insights into the development of marketing program for EV in Hong Kong. The findings will help EV manufacturers to facilitate EV purchases.

The study "*Commercial viability of electric vehicles in India*" was conducted in India by Ankit et al., (2018); Ahman (2006). This paper is aimed to examine the commercial viability of the pilot project and identify the initial roadblocks and its rectifications in order to scale up on pan-India basis. In order to achieve this, the pilot project was studied in detail and interviews and surveys were conducted among all the stakeholders in April-May 2018.The study also uniquely identifies the charging pattern of the commercial electric vehicles at a particular charging station.

The study "*Comparative study of using different electric motors in the electric vehicles*" by Nasser Hashemnia, Behzad Asaei on 2008 18th International Conference on Electrical Machines, 1-5, 2008. In this study, different electric motors are studied and compared to see the benefits of each motor and the one that is more suitable to be used in the electric vehicle (EV) applications. It is concluded that although the induction motors technology is more mature than others, for the EV applications the brushless DC and permanent magnet motors are more suitable than others. The use of these motors will result in less pollution, less fuel consumption and higher power to volume ratio.

The study "*Integration issues of cells into battery packs for plug-in and hybrid electric vehicles*" by Ahmad A Pesaran, Gi-Heon Kim, Matt Keyser in National Renewable Energy Lab.(NREL), Golden, CO (United States), 2009.This study discusses mechanical, electrical, and



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thermal integration issues and vehicle interface issues that could impact the cost, life, and safety of the system. It also compares the advantages and disadvantages of using many small cells versus a few large cells and using prismatic cells versus cylindrical cells.

The study "*Energy storage for electric vehicles*" by Dixon (2010) in 2010 IEEE International Conference on Industrial Technology. This presentation shows some of the options under study to increase the energy storage capability and to reduce the charging time. A comparative study of different storage alternatives, such as chemical battery systems, ultra capacitors, flywheels and fuel cells are evaluated, showing the advantages and disadvantages of each one of them.

The study "*A review of energy sources and energy management system in electric vehicles*" by Siang Fui Tie, Chee Wei Tan in Renewable and sustainable energy reviews 20, 82-102, 2013. This paper reviews state-of-the-art of the energy sources, storage devices, power converters, low-level control energy management strategies and high supervisor control algorithms used in EV. The comparison on advantages and disadvantages of vehicle technology is highlighted. In addition, the standards and patterns of drive cycles for EV are also outlined.

The study "*A review of factors influencing consumer intentions to adopt battery electric vehicles*" in Renewable and Sustainable Energy Reviews. This study is a systematic overview of peer-reviewed journal articles to identify the reasons for and against consumer intentions to adopt BEVs. The influencing factors were categorized into three main types, namely demographic, situational and psychological, and they were reviewed separately. In addition, the shortcomings and deficiencies in the current studies were also noted.

The study "*Evaluation of willingness to buy a low-pollution car in Japan*" by Kunihiro, (2005) Keiichi Satoh in Journal of the Eastern Asia Society for Transportation Studies. This study clarifies awareness of people toward purchase of a low- pollution car to propose measures to improve introduction of low-pollution cars. They made surveys in Sapporo to identify the status of people's willingness to buy a low-pollution car. Citizens of Sapporo are concerned about the environment; however, it does not actually lead to purchase of low-pollution cars.

The study "*Gender differences in Egyptian consumers' green purchase behaviour: the effects of environmental knowledge, concern and attitude"* by Mohamed (2007). This study investigates the influence of three cognitive and attitudinal factors on gender differences in green purchase behaviour. This study found that women appeared to be less aware of environmental issues compared with men. However, contrary to other studies conducted in the West, men showed more environmental concern and more positive outlook towards green purchase compared with women. The study discusses how the present findings may help policy makers and marketers alike to fine-tune their environmental and marketing programmers.

The study "*Environmental impacts of hybrid and electric vehicles*". This study is undertaken to understand how well existing studies of the environmental impacts of hybrid and electric vehicles (EV) address the full life cycle of these technologies. Results of studies are synthesized to compare the global warming potential (GWP) of different EV and internal combustion engine vehicle (ICEV) options.

The study "*Influences of environmental consciousness and attitudes to transportation on electric vehicle purchase intention*" by Liu (2015) Hitomi SATO, Takayuki Morikawa in Asian Transport Studies. This study examines the influences of environmental consciousness and attitudes to transportation on electric vehicle purchase intentions. The data was obtained through a web-based questionnaire survey in the Chukyo Area of Japan. Results reveal that both environmental consciousness and attitudes to transportation significantly affect an individual's



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EV buying intentions. The results provide insight for the design of policies aiming at promoting the adoption of EVs.

The study "*Environmental knowledge, awareness, and business school students' intentions to purchase green vehicles in emerging countries*". This study aims to examine emerging countries' business students' intentions to purchase green vehicles. Stratified random sampling was used to select study participants, and data were collected through face-to-face interviews. Results revealed that environmental knowledge and awareness have a significant influence on business students' favorable attitudes toward green vehicles. Further, a significant association between attitudes toward green vehicles, perceived behavioral controls, and intentions to purchase green vehicles was observed.

The study Government policy and the development of electric vehicles in Japan aim of this study is to analyse the role that the Japanese Government has played in the development of alternatives to conventional vehicles, the effect of government programmes, and the importance of technical flexibility in government support schemes. The focus is on battery-powered electric vehicles (BPEVs), hybrid electric vehicles (HEVs), and fuel cell electric vehicles. The conclusion is that flexibility, adaptability and cooperation in terms of technical choice is necessary in policy.

The study "*Modelling load shifting using electric vehicles in a smart grid environment*" by Shin-ichi Inage in OECD, 2010. This study proposes a method for simulating the potential benefits of using EVs in load shifting and "vehicle-to-grid" applications for four different regions – the United States, Western Europe, China and Japan – that are expected to have large numbers of EVs by 2050.

The study "*Investigating the impact of demand side management on residential customers "*by Ning Zhang, Luis F Ochoa, Daniel S Kirschen in 2011 2nd IEEE PES International Conference and Exhibition on Innovative Smart Grid Technologies, 1-6, 2011. This study investigates the impact of a DSM scheme that shifts residential high-power appliances (loads) to reduce the overall peak of households connected to the same LV feeder. Results are encouraging; showing not only that the proposed DSM scheme has great potential for peak reduction, but, more importantly, that the negative impact on the consumers is minimal. These findings could be used to promote such schemes and increase public acceptance.

The study "*Demand side management of electric car charging: Benefits for consumer and grid"* by P Finn, C Fitzpatrick, David Connolly in Energy 42 (1), 358-363, 2012. This study examines how optimising the charging cycles of an electric car using DSM (Demand Side Management) based on a number of criteria could be used to achieve financial savings, increased demand on renewable energy, reduce demand on thermal generation plant, and reduce peak load demand. The results demonstrate that significant gains can be achieved using currently available market data which highlights the point that DSM can be implemented without any further technological advents.

The study "*The emergence of an electric mobility trajectory*" by Marc (2013) in Energy policy. In this study, they analyse the emergence of a trajectory of electric moblity. They describe developments in electric vehicles before and after 2005. The central thesis of the paper is that electric mobility has crossed a critical threshold and is benefitting from various developments whose influence can be expected to grow in importance: high oil prices, carbon constraints, and rise of organised car sharing and intermodality. The findings is that the development of vehicle engine technology depends on changes in (fueling) infrastructure, changes in mobility, changes in the global car market, evolution of energy prices, climate policy,



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and changes in the electricity sector.

## Research Problem

"*Consumer attitude and perception towards electric vehicles*"

## Objectives of the Study

This project is conducted for achieving the following objectives

1. To identify customers' attitude towards electric vehicles.
2. To measure customers' perception of advantages and disadvantages of electric vehicles.
3. To measure customers' environmental consciousness on buying of electric vehicles.
4. To identify the factors that promotes customers shifting to electric vehicles.

## Research Hypotheses

1. There is no association between gender and attitude towards electric vehicles.There is no association between marital status and attitude towards electric vehicles.
2. There is no significant difference between the motivation of customers for the electric vehicle and their environmental consciousness.
3. There is no significant difference between the motivation of customers for buying the electric vehicle and the general factors of people considered for shifting to E- vehicles.
4. There is no significant difference between the attitude of customers towards electric vehicles and the factors that discourage them from buying an electric vehicle.
5. There is no significant difference between the attitude of customers towards electric vehicles and the environmental consciousness of the customers.
6. There is no correlation between the attitude of customers towards electric vehicles and the environmental consciousness of customers.

## Research Methodology

Research methodology is a way to systematically solve the research problem. It is a plan of action for a research project and explains in detail how data are collected and analysed. Research methodology may be understood as a science of studying how research is done scientifically. It can cover a wide range of studies from simple description and investigation to the construction of sophisticated experiment.

## Source of Data

Data have been collected from primary sources alone.

## Sample Size

A group of 150 respondents were selected for the study and we got 120 response.

## Sampling Method

Convenience sampling method is used for data collection because questionnaire is a suitable method of convenience sampling method. The respondents are customers of electric vehicles. There is comparatively lower number of customers for electric vehicles. So convenient



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sampling method is the appropriate option in reaching out to the respondents.

## Method of Data Collection

Questionnaire is used for data collection. The questionnaire is mainly used to catch customer's attitude towards electric vehicle, factors that are encouraging and discouraging and the factors determining the environmental consciousness of customers on buying electric vehicle.

## Tools Used for Data Analysis

**Chi-square test:** Chi- square test is a statistical method assessing the goodness of fit between a set of observed values and those expected theoretically.

**T-Test:** A T-Test is a statistical examination of two population means. A two sample t-test examines whether two samples are different and is commonly used when the variances of two normal distributions are unknown and when the experiment uses a small sample size.

**ANOVA:** Analysis of variance (ANOVA) tests the hypothesis that the means of two or more population are equal. ANOVAs assess the importance of one or more factors by comparing the response variable means at the different factor levels. The null hypothesis states that all population means (factor level means) are equal while the alternative hypothesis states that at least one is different.

**Correlation:** Correlation is a bivariate analysis that measures the strengths of association between two variables and the direction of the relationship. In terms of the strength of relationship, the value of the correlation coefficient varies between +1 and -1.

## Testing of Hypothesis

**Chi-square test:** Chi-square of independence and results are applied to test the hypothesis given below Tables 1 & 2:

***$H_1$:*** *There is no association between gender and attitude towards electric vehicles.*

**Table 1**
**CHI-SQUARE TESTS**

| | Value | Df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi- Square | 1.730[a] | 1 | 0.188 |

## Interpretation

The Pearson Chi-square value is 1.730 with 1 degree freedom and p value is .188>0.05 which is not significant. So there is no association between gender and attitude towards electric vehicles is accepted.

***$H_2$:*** *There is no association between marital status and attitude towards electric vehicles.*



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**Table 2**
**CHI-SQUARE TESTS**

| | Value | Df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 2.419[a] | 1 | 0.120 |

## Interpretation

The Pearson Chi-square value is 2.419 with 1 degree freedom and p value is .120>0.05 which is not significant. So there is no association between marital status and attitude towards electric vehicles is accepted.6.2 T-test in Tables 3 & 4.
Independent sample T-test is applied to test the hypothesis given below and the buying are:

***$H_3$:*** *There is no significant difference between the motivation of customers for buying the electric vehicle and their environmental consciousness.*

**Table 3**
**GROUP STATISTICS**

| Have you ever personally owned an electric vehicle | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Environmental consciousness | Yes | 17 | 22.0000 | 3.20156 | 0.77649 |
| | No | 103 | 21.3689 | 2.50094 | 0.24643 |

**Table 4**
**INDEPENDENT SAMPLES TEST**

| | | **-test for Equality of Means** | | |
|---|---|---|---|---|
| | | t | Df | Sig. (2-tailed) |
| Environmental consciousness | Equal variances assumed | 0.925 | 118 | 0.357 |
| | Equal variances not assumed | 0.775 | 19.354 | 0.448 |

## Interpretation

The t test shows that t value of equal variances assumed is .925 with degree of freedom 118 and the significant value of t is .357>0.05, t value of equal variance not assumed is .775 with degree of freedom 19.354 and significant value of t is .448>0.05. The significant value of all variables are greater than 0.05, therefore the hypothesis is accepted in Tables 5 & 6.

***$H_4$:*** *There is no significant difference between the motivation of customers for buying the electric vehicle and the general factors of people considered for shifting to E- vehicles.*



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| Table 5<br>Group Statistics | | | | | |
|---|---|---|---|---|---|
| Have you ever personally owned an electric vehicle | | N | Mean | Std. Deviation | Std. Error Mean |
| Shifting | Yes | 17 | 32.3529 | 3.04017 | 0.73735 |
| | No | 103 | 34.9068 | 6.72168 | 0.66231 |

| Table 6<br>INDEPENDENT SAMPLES TEST | | | | |
|---|---|---|---|---|
| | | Equality of Means | | |
| | | T | df | Sig. (2-tailed) |
| Shifting | Equal variances assumed | -1.537 | 118 | .127 |
| | Equal variances not assumed | -2.577 | 47.394 | .123 |

## Interpretation

The t test shows that t value of equal variances assumed is -1.537 with degree of freedom 118 and the significant value of t is 0.127>0.05, t value of equal variance not assumed is -2.577 with degree of freedom 47.394 and significant value of t is 0.123>0.05. The significant value of all variables are greater than 0.05, therefore the hypothesis is accepted in Tables 7 & 8.

## ANOVA

*$H_5$: There is no significant difference between the attitude of customers towards electric vehicles and the factors that discourage them from buying an electric vehicle.*

| Table 7<br>DESCRIPTIVES | | | | |
|---|---|---|---|---|
| Attitude | | | | |
| | N | Mean | Std. Deviation | Std. Error |
| 25.00 | 2 | 36.5000 | 0.70711 | 0.50000 |
| 26.00 | 1 | 40.0000 | | |
| 27.00 | 2 | 38.0000 | 2.82843 | 2.00000 |
| 28.00 | 3 | 35.0000 | 1.00000 | .57735 |
| 29.00 | 7 | 44.0000 | 15.58846 | 5.89188 |
| 30.00 | 9 | 35.2222 | 4.23609 | 1.41203 |
| 31.00 | 6 | 40.0000 | 4.04969 | 1.65328 |
| 32.00 | 6 | 39.0000 | 3.89872 | 1.59164 |
| 33.00 | 15 | 37.4000 | 3.60159 | .92993 |
| 34.00 | 11 | 47.0000 | 17.19302 | 5.18389 |
| 35.00 | 16 | 39.1250 | 3.82753 | .95688 |



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| | | | | |
|---|---|---|---|---|
| 36.00 | 10 | 39.9000 | 2.02485 | .64031 |
| 37.00 | 9 | 39.0000 | 2.17945 | .72648 |
| 38.00 | 4 | 39.2500 | 5.18813 | 2.59406 |
| 39.00 | 5 | 38.8000 | 5.80517 | 2.59615 |
| 40.00 | 2 | 40.0000 | 5.65685 | 4.00000 |
| 41.00 | 3 | 38.0000 | 0.00000 | 0.00000 |
| 42.00 | 2 | 41.0000 | 0.00000 | 0.00000 |
| 44.00 | 1 | 37.0000 | | |
| 45.00 | 4 | 55.0000 | 16.91153 | 8.45577 |
| 59.00 | 1 | 64.0000 | | |
| 86.00 | 1 | 39.0000 | | |
| Total | 120 | 40.2833 | 8.64829 | .78948 |

**Table 8**
**ANOVA**

**Attitude**

| | **Sum of Squares** | **df** | **Mean Square** | **F** | **Sig.** |
|---|---|---|---|---|---|
| Between Groups | 2592.511 | 21 | 123.453 | 1.918 | 0.017 |
| Within Groups | 6307.856 | 98 | 64.366 | | |
| Total | 8900.367 | 119 | | | |

## Interpretation

The statistical tool ANOVA shows that the value of F is 1.918 and the significance value is 017<0.05. Therefore it is rejected in Tables 9 & 10.

***$H_{6:}$*** *There is no significant difference between the attitude of customers towards electric vehicles and the environmental consciousness of the customers.*

**Table 9**
**DESCRIPTIVES**

Attitude

| | N | Mean | Std. Deviation | Std. Error |
|---|---|---|---|---|
| 6.00 | 1 | 46.0000 | | |
| 7.00 | 1 | 46.0000 | | |
| 8.00 | 4 | 43.7500 | 3.94757 | 1.97379 |
| 9.00 | 10 | 42.4000 | 4.24788 | 1.34330 |
| 10.00 | 5 | 42.6000 | 4.44972 | 1.98997 |
| 11.00 | 6 | 42.6667 | 10.50079 | 4.28693 |
| 12.00 | 19 | 40.8421 | 11.34442 | 2.60259 |
| 13.00 | 13 | 43.8462 | 14.88761 | 4.12908 |
| 14.00 | 11 | 40.4545 | 8.43046 | 2.54188 |
| 15.00 | 15 | 35.6667 | 3.53890 | .91374 |
| 16.00 | 5 | 36.0000 | 1.73205 | .77460 |
| 17.00 | 5 | 38.0000 | 2.64575 | 1.18322 |
| 18.00 | 4 | 38.0000 | 8.83176 | 4.41588 |
| 19.00 | 2 | 37.0000 | 0.00000 | 0.00000 |
| 20.00 | 4 | 37.5000 | 3.69685 | 1.84842 |
| 21.00 | 6 | 44.8333 | 11.53112 | 4.70756 |



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| | | | | |
|---|---|---|---|---|
| 23.00 | 2 | 37.0000 | 7.07107 | 5.00000 |
| 24.00 | 2 | 38.0000 | 2.82843 | 2.00000 |
| 25.00 | 2 | 35.5000 | 3.53553 | 2.50000 |
| 28.00 | 1 | 38.0000 | | |
| 52.00 | 1 | 34.0000 | | |
| 67.00 | 1 | 40.0000 | | |
| Total | 120 | 40.2833 | 8.64829 | .78948 |

**Table 10**
**ANOVA**

**Attitude**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 1148.071 | 21 | 54.670 | 0.691 | 0.832 |
| Within Groups | 7752.296 | 98 | 79.105 | | |
| Total | 8900.367 | 119 | | | |

## Interpretation

The statistical tool ANOVA shows that the value of F is .691 and the significance value is 0.832>0.05. Therefore it is accepted in Tables 11 & 12.

## Correlation

***$H_7$:*** *There is no correlation between the attitude of customers towards electric vehicles and the environmental consciousness of customers.*

**Table 11**
**DESCRIPTIVE STATISTICS**

| | **Mean** | **Std. Deviation** | **N** |
|---|---|---|---|
| Attitude | 40.2833 | 8.64829 | 120 |
| Consciousness | 21.4583 | 2.60541 | 120 |

**Table 12**
**CORRELATIONS**

| | | Attitude | ciousess |
|---|---|---|---|
| Attitude | Pearson Correlation | 1 | 0.202* |
| | Sig. (2-tailed) | | 0.027 |
| | N | 120 | 120 |
| Consciousness | Pearson Correlation | .202* | 1 |
| | Sig. (2-tailed) | .027 | |
| | N | 120 | 120 |

## Interpretation



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The p value is 0.027<0.05 this is significant. So the hypothesis that, there is no relationship between attitude towards electric vehicle and environmental consciousness. So the hypothesis is rejected.

## Findings of the Study

1. Majority of the respondents have positive attitude towards electric vehicle.
2. Most important attitude among the majority is that electric vehicle are cheaper to run.
3. The main factor that encourages customers to buy an electric vehicle is environmental friendliness.
4. The main factor that discourages customers to buy an electric vehicle is that they are not educated enough on electric vehicle.
5. One of the main factors that makes the respondents shift to electric vehicle is its innovation.
6. The respondents are found environmentally conscious since most of them responded that air pollution is less in connection with electric vehicles.
7. This study found that there is no association between gender and attitude towards electric vehicles
8. It also found that there is no association between marital status and attitude towards electric vehicles.
9. It also found that there is no significant difference between the motivation of customers for the electric vehicle and their environmental consciousness.
10. It also found that there is no significant difference between the motivation of customers for buying the electric vehicle and the general factors of people considered for shifting to E- vehicles.
11. It also found that there is no significant difference between the attitude of customers towards electric vehicles and the factors that discourage them from buying an electric vehicle.
12. It also found that there is no significant difference between the attitude of customers towards electric vehicles and the environmental consciousness of the customers.
13. It also found that there is no correlation between the attitude of customers towards electric vehicles and the environmental consciousness of customers.

## Key Characteristics of the Sample Population

1 Majority of the respondents are male (72.5%) out of 120 respondents and 27.5% are female.
2 Out of 120 respondents 47.5% are married and 52.5% are unmarried.
3 Among 120 respondents 14.2% owned an electric vehicle and 85.8% do not own.
4 Among 120 respondents owned an electric vehicle 8.3% owned scooter, 2.5% owned auto and 3.3% car.
5 54.2% of the respondents are likely to buy an electric vehicle.

## Implications of the Study

1. In the study, the researcher finds that persons who do not own electric vehicles also have a positive attitude towards electric vehicles.
2. The findings of the research can open a new insight to the electric vehicle manufactures or dealers, so that they can segment their market more effectively based on consumer attitude and perception.
3. The study also implies the factors that discourage customers from buying an electric vehicle and by effectively using proper techniques electric vehicle manufactures can overcome this problem
4. The study also implies that there may be a chance of more persons shifting to electric vehicles in future and by increasing social awareness the electric vehicle manufactures can make huge profits.

# CONCLUSION

The research entitled is "*Consumer attitude and perception towards electric vehicle*". This study brings to light that customers who do not own electric vehicle also are willing to buy



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electric vehicle in future. The availability of fossil fuels will reduce in future so that customers will automatically change to electric vehicles. We undertook this study because it will have relevant benefits in the future. Introduction of electric vehicles will be a positive approach to the environment. We spent two months for this study. The findings of the study rejected the hypotheses and established that there is good attitude towards buying electric vehicle. One of the difficulties we faced regarding the research was lack of knowledge of customers towards electric vehicles. We are highly satisfied in this research as we got relevant information from the customers. So this research study concluded that the customers have a positive attitude and perception towards electric vehicles.

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