

A Study

About

The Adoption of Electric vehicles in India

Submitted in the partial fulfillment of the requirements for the award of

Bachelor of commerce

By

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**DEPARTMENT OF BUSINESS ADMINISTRATION SCHOOL OF
MANAGEMENT STUDIES**

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited Grade “A” by NAAC

JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI- 600 199

MAY 2022



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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **UTHAYA KUMAR (39740247)** who has done the Project work entitled **A Study on the Adoption of Electric Vehicles in India** under my supervision from December 2021 to February 2022.

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Submitted for Viva voice Examination held on _____

Internal Examiner

External Examiner

DECLARATION

I **UTHAYA KUMAR.V (39740247)** hereby declare that the project work Entitled **“A Study on the Adoption of Electric Vehicles in India”** done by me under the guidance of Dr. BLESSIE PATHUM.R B.COM, M.B.A, Ph.D., Department of Management Studies is submitted in partial fulfillment of the requirements for the award of Bachelor of Commerce degree.

DATE:

PLACE: CHENNAI

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ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **SATHYABAMA** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr. G. Bhuvaneswari MBA., Ph.D., Dean- School of management Studies and**

Dr. A. Palani, M.Com., M.Phil., M.B.A., Ph.D., Head, School of Management Studies for providing me necessary support and details at the right time during the progressive reviews.

I would like to express my sincere and deep sense of gratitude to my Project Guide **Dr. BLESSIE PATHMU.R, B. Com, M.B.A, Ph.D., Assistant Professor of the Department, school of Management Studies** for her valuable guidance, suggestions and constant encouragement paved way for the successful completion of my project work.

I wish to express my thanks to all Teaching and Non-teaching staff members of the School of Management Studies who were helpful in many ways for the completion of the project.

UTHAYA KUMAR

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ABSTRACT

The global warming has become a very important issue during the last decade. The worldwide research to obtain efficiency improvements on energy consuming and sustainable energy sources utilization. Hybrid electric vehicles (HEV) are able to achieve this goal. In addition, the utilization of high efficiency electric machines, and high energy permanent magnet, allows an increased reduction of fuel consumption and exhaust gas emissions. This paper deals about various topologies of the permanent magnet machines and some commercial vehicles adopting these motors are described.

Electric vehicles (EV), as a promising way to reduce the greenhouse effect, have been researched extensively. With improvements in the areas of power electronics, energy storage and support, the plug-in hybrid electric vehicle (PHEV) provides competitive driving range and fuel economy compared to the internal combustion engine vehicle (ICEV). Operating with optimised control strategies or utilising the concept of the energy management systems (EMS), the efficiency of the PHEV could be significantly improved. In this review paper, the operating process of the various types of EVs will be explained. Battery technology and supercapacitor technology will also be discussed as a possibility to increase the energy capacity of PHEV.

Fully electric vehicles are being introduced to the passenger car market in addition to the already to the already popular hybrid vehicles. There are existing and proposed standards for the design of these vehicles to reduce the risk of occupants and rescue personnel being exposed to hazards such as corrosive chemicals, toxic fumes, fire and electric shock in the event of a crash. Some manufacturers are understood to be working with rescue organisations to develop appropriate procedures for dealing with these crash.

Electric vehicles (EVs) are a promising technology for achieving a sustainable transport sector in the future, due to their very low to zero-carbon emissions, low noise, and high efficiency. Nonetheless, the large penetration of EVs is expected to affect the existing power grids, due to high loads.

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CHAPTER – 1

INTRODUCTION

1.1 INTRODUCTION:

EVs first came into existence in the mid-19th century, when electricity was among the preferred methods for motor vehicle propulsion, providing a level of comfort and ease of operation that could not be achieved by the gasoline cars of the time. Internal combustion engines were the dominant propulsion method for cars and trucks for about 100 years, but electric power remained commonplace in other vehicle types, such as trains and smaller vehicles of all type

In the 21st century, EVs have seen a resurgence due to technological developments, and an increased focus on renewable energy and the potential reduction of transportation's impact on climate change and other environmental issues. Project Drawdown describes electric vehicles as one of the 100 best contemporary solutions for addressing climate change.

Government incentives to increase adoption were first introduced in the late 2000s, including in the United States and the European Union, leading to a growing market for the vehicles in the 2010s. Increasing public interest and awareness and structural incentives, such as those being built into the green recovery from the COVID-19 pandemic, is expected to greatly increase the electric vehicle market. The International Energy Agency said in 2021 that governments should do more to meet climate goals, including policies for heavy electric vehicles. Electric vehicle sales may increase from 2% of global share in 2016 to 30% by 2030. Much of this growth is expected in markets like North America, Europe and China; a 2020 literature review suggested that growth in use of electric 4-wheeled vehicles appears economically unlikely in developing economies, but that electric 2-wheeler growth is likely. There are more 2 and 3 wheels EVs than any other type.

Worldwide, 6.6 million plug-in electric cars were sold in 2021, more than doubling 2020 sales, and achieving a market share of 9% of the global new car market. All-electric cars represented 71% of plug-in car sales in 2021. As of December 2021, there were 16 million plug-in electric cars on the world's roads. Many countries have established government incentives for plug-in electric vehicles, tax credits, subsidies, and other non-monetary incentives while several countries have legislated to phase-out sales of fossil fuel cars to reduce air pollution and limit climate change

The Tesla Model 3 became the world's all-time best-selling electric car in early 2020, and in June 2021, became the first electric car to pass 1 million global sales. Earlier models with widespread adoption include the Japanese Mitsubishi i-MiEV and the Nissan Leaf.

1.2 SCOPE OF THE STUDY:

- ❖ To maintain the harmonious relationship between battery electric vehicles and hybrid electric vehicles
- ❖ To safeguard the interest on electric vehicles on customer to satisfy them.
- ❖ To study what are the drawbacks of electric vehicle.
- ❖ To know why electric vehicle couldn't enough consumer attraction.
- ❖ This study will be helpful to understand the problems faced by electric vehicles users relating to the various users of electric vehicles in India
- ❖ The sample size is 40 therefore, there is scope for the difference in the factors when the number of respondents increase.

1.3 OBJECTIVES OF THE STUDY:

- ❖ To know the customer preference on electric vehicles.
- ❖ To study the customer satisfactions level towards electric vehicles.
- ❖ To know the customer would shift normal vehicle to electric vehicle.
- ❖ To examine the relationship between normal vehicles and electric vehicles.

1.4 NEED FOR THE STUDY:

To overcome pollution and avoid exhausting natural vehicles for transportation, the swapping of electric vehicles seems to be the best option. But it's not only going to be a reason. The crude oil is going to be dry sooner. If this situation happens, our current Internal Combustion vehicles will no more useful. Already Geological Researches from several countries warned it before and some of them confirmed with the activities of nature. So, an alternative fuel for our vehicle at least for our transportation should be planned. Some other major reasons for the need for Electric vehicles are Excessive maintenance cost of Conventional Internal Combustion Engines, hike in the costs of petrol and diesel, less safety when compared to Electric vehicles, high pollution causing agent and enormous reasons too.

Even some manufacturers analysed the future steps of India and at a very early stage started their research on Profitable Electric Vehicle Manufacturing like Mahindra etc. Currently in India, Electric Vehicles have become a major need. The situation in industrial is not so perfect, but start-ups utilize this opportunity.

1.5 LIMITATIONS OF THE STUDY:

The study uses the data collected from respondents through survey. The data collected are then analysed to get results. The results can change according to the size of the sample i.e., the number of people allotted to answer the questions. The size of the sample here is 40 respondents. when the sample size increases the results probably might also vary. The study identifies and analyses only few factors which Important to electric vehicles users in India whereas there might be many other factors that will also have an effect on the Preferences of electric vehicles users. leaves a research gap as there are factors that need to be taken into consideration on a later period.

1.6 CHAPTER FRAMEWORK:

CHAPTER 1: INTRODUCTION

This chapter consists of the introduction to the study, the need, scope and objectives of the study along with its limitations and also includes the chapter framework of the study.

CHAPTER 2: REVIEW OF LITERATURE

This chapter consists of research paper of Authors who have conducted detailed research study into the Adoption of Electric vehicles in India.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter consists of research design, methods of data collection, types of research, sample size, period of study and percentage analysis

CHAPTER 4: DATA ANALYSIS AND INTERPRETATION

This chapter consists of analysis of the data which was collected through the questionnaire and percentage analysis are the statistical tools that have been used to analyse the data

CHAPTER 5: FINDINGS, SUGGESTIONS AND CONCLUSIONS

This chapter consists of the findings, suggestions and the conclusions of the study.

CHAPTER – 2

REVIEW OF LITERATURE

The secondary data was taken from the various review of literature. Such literature review is given below. Researchers have made studies on the factors that influence the electric vehicles of an individual. To focus has mostly remained a core factor such as age, gender, income, education and vehicles knowledge. Several studies have been done to identify the customer are using electric vehicles in an own.

CONSUMER PREFERENCES FOR ELECTRIC VEHICLES:

Fanchao Liao, Eric Molin, Bert van Wee (2017)

Widespread adoption of electric vehicles (EVs) may contribute to the alleviation of problems such as environmental pollution, global warming and oil dependency. However, the current market penetration of EV is relatively low in spite of many governments implementing strong promotion policies. This paper presents a comprehensive review of studies on consumer preferences for EV, aiming to better inform policy-makers and give direction to further research.

First, we compare the economic and psychological approach towards this topic, followed by a conceptual framework of EV preferences which is then implemented to organize our review. We also briefly review the modelling techniques applied in the selected studies. Estimates of consumer preferences for financial, technical, infrastructure and policy attributes are then reviewed.

Finally, we discuss a research agenda to improve EV consumer preference studies and give recommendations for further research.

Prospects of electric vehicles in the developing countries

Sarmad Zaman Rapier, Johan Albrecht (2020)

Electric mobility offers a low cost of travel along with energy and harmful emissions savings. Nevertheless, a comprehensive literature review is missing for the prospects of electric vehicles in developing countries. Such an overview would be instrumental for policymakers to understand the barriers and opportunities related to different types of electric vehicles (EVs). Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines, a systematic review was performed of the electronic databases Google Scholar and Web of Science for the years 2010–2020.

electric four-wheelers, hybrid electric vehicles and electric two-wheeler constituted the electric vehicles searched in the databases. Results reveal that electric four-wheelers are not a feasible option in developing countries due to their high purchase price. On the contrary, electric two-wheelers may be beneficial as they come with a lower purchase price.

Environmental impacts of hybrid and electric vehicles

Troy R Hawkins, Ola Moa Gausen (2012)

A literature review 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. Other impacts are compared; however, data availability limits the extent to which this could be accomplished.

Adam waclaw, Markus Lienkamp (2021)

The launch of both battery electric vehicles (BEVs) and autonomous vehicles (AVs) on the global market has triggered ongoing radical changes in the automotive sector. On the one hand, the new characteristics of the BEV powertrain compared to the combustion type have resulted in new central parameters, such as vehicle range, which then become an important selling point. To enable manufacturers and researchers to develop and optimize BEVs and AVs, it is necessary to first identify the relevant parameters and costs. To this end, we have conducted an extensive literature review. The result is a complete overview of the relevant parameters and costs, divided into the categories of vehicle, infrastructure, mobility, and energy.

Bailey et al. (2015)

Investigation of whether visibility of public chargers has an impact on PEV demand. There is no significant relationship between perceived existence of one charging station and PEV interest, however there is a weak yet significant relationship between perceived existence of multiple charging stations and PEV interest.

Cahill et al. (2014)

Interviews with automakers and dealers and analysis on customer satisfaction overall, consumer experience at dealerships is much better for conventional vehicle buyers than PEV buyers. Introducing new method for educating and scaling dealer competence regarding electric vehicles could greatly improve the consumer experience.

CFA (2015)

Survey by consumer federation of America that shows how knowledge affects consumer interest in EVs. Clear and significant correlation between EV knowledge and positive attitudes towards the technology. Positive attitudes and a willingness to purchase them are also correlated. For consumers that were more knowledgeable, there was a significant correlation between understanding and purchase desire.

Edwards, turrentine & white (2016)

Three Plug-in Electric Vehicle Collaborative meeting presentations. Discusses challenges and opportunities in EV market development, especially on consumer awareness and acceptance.

Grimes &Viswanathan (2011)

Interviews with executives from auto companies and survey of consumers to understand their attitudes towards EVs. 45% of the drivers they surveyed have little to no understanding of EVs. Consumers with better understanding are generally more willing to pay a premium for the technology. Nevertheless, even well-informed consumers are sometimes unaware of the lifetime fuel savings that EVs offer.

Krupa et al. (2014)

Survey analysis on PHEV market penetration to reveal quantitative patterns and correlations. Advertising up-front incentives may be more effective than advertising long-term fuel savings. Targeting advertising and marketing towards progressive and environmentally concerned citizens may be more effective than those for a general audience. Displaying EV fuel savings in gallons, rather than dollars, may be more persuasive.

(2009) A trial was carried out followed by interviews and surveys to reveal consumer behaviors. Major themes included driving behaviors, recharging habits and etiquette, confusion about PHEVs and their operation, and potential cost savings. The trial identified that drivers accrue information and develop complex ideas about the technology and its possible impact on lifestyle.

(2016) Online survey and interviews to measure buyers' awareness of EVs and understand their decision making. Addressing broader consumer awareness is the first step to expand the ZEV market. Just 49% of survey respondents were aware of federal incentives; 33% of respondents were aware of the CA state incentive. EV model recognition has not spread beyond early models. Individuals with greater familiarity and experience with EVs are more likely to value ZEVs higher.

(2013) Survey analysis examines consumer knowledge of PEVs and current public policies. Most survey respondents were misinformed regarding basic PEV characteristics. Nearly 95% of respondents were unaware of state and local policies. Misperceptions regarding potential fuel and maintenance cost savings can notably hinder PEV interest.

Williams & Johnson (2016)

Analyzes the results of a consumer survey from California electric vehicle purchase rebate recipients. Based on electric vehicle consumer data, the researchers identify who is adopting the technology, what their main sources of information are, and the motivations influencing their decision to select an electric vehicle.

CHAPTER – 3

RESEARCH METHODOLOGY

3.1 RESEARCH METHODOLOGY:

Research is the process of systematic and in-depth study of any particular topic, subject or any of investigation backed by collection, compilation, presentation and interpretation relevant data in details.

3.2 RESEARCH DESIGN:

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. This research design applied for the study is 'Descriptive Research'.

3.2.1 Descriptive research design:

Descriptive research aims to accurately and systematically describe a population situation or phenomenon. It can answer what, where, when and how questions, but not Descriptive research aims to accurately and systematically describe a population. why questions. A descriptive research design can use a wide variety of research methods to investigate one or more variables

3.3 TYPES OF RESEARCH:

Descriptive research has been used, it involves survey and fact-finding enquiries of different kinds, the purpose of descriptive research are the descriptive of stage of affairs, as it exists at present.

PROJECT PLANNING:

Project planning is the first step in actually conducting & directing a research Project. It is one of the most important tasks of researcher. This includes formulation of the researcher objectives & goals and determining ways of achieving them. Project planning is part of project management, which relates to the use of schedules such as Gantt charts to plan and subsequently report progress within the project environment. Project planning can be done manually or by the use of project management software.

3.4 DATA COLLECTION:

Data collection is one of the most important aspects of research. The information research methodology must be accurate and relevant, the data collection method can be classified into two methods.

PRIMARY DATA:

Questionnaire method have been used as a tool for a data collection in this research.

SECONDARY DATA:

Secondary data means data that are already available I e, they refer to data which has already been collected and analyzed by someone else. The secondary data for the study was collected google scholar website and magazines.

3.5 QUESTIONNAIRE PREPARATION:

The questionnaire follows a simple and basic layout. It is made easy for the participants to respond to the questionnaire without any delay or confusion. The set of question and the answer options present in a questionnaire are predetermined and are constructed by myself based on general questions regarding the main topic. The structure of questionnaire used in this project is as follows.

3.5.1 BASIC INTRODUCTION:

The questionnaire begins with small and simplifies description regarding the questionnaire – Title and description of the topic.

3.5.2 PERSONAL DETAILS:

The actual questionnaire begins here where the participants are asked about their personal details such as their name, age, gender, and occupation.

3.5.3 RESEARCH RELATED QUESTIONS:

The set of questions in the questionnaire consists of the questions related to public where the participants are asked on their general opinion on there increase in fuel price so there are shifting into the electric vehicles.

3.5.4 PERCEPTION QUESTIONS:

The next set of question in the questionnaire focus on electric vehicles growth in India. And how many customers know about electric vehicles.

3.5.5 LIKERT SCALLING QUESTIONS:

The Likert scaling questions include moderate options in its scale.

3.5.6 SUGGESTION QUESTIONS:

The last and final questions in the questionnaire focus on the suggestion questions of the participants regarding the questionnaire.

3.6 SAMPLE SIZE:

The sample size for the project had a target of 40-60 participants. The fixed target of the sampling size has been achieved as the total number of respondents for the survey questionnaire was 40. Total of 40 responses helped to derive a conclusion recording people's perception towards a study of satisfaction of public how they consider it.

3.6.1 SAMPLE LOCATION:

My survey location is PERUNGUDI (Chennai)

3.6.2 SAMPLE TARGETED PEOPLE:

My survey targeted people are both men and woman at the age group of [18-60 AND ABOVE]

3.7 PERIOD OF STUDY:

The study was conducted for a period of 3 months starting from December 2021 to February 2022

3.8 PERCENTAGE ANALYSIS:

Research questions are always answered with a descriptive statistic: generally, either percentage or mean. Percentage is appropriate when it is important to know how many of the participants gave a particular answer. Generally, percentage is reported when the responses have discrete categories.

CHAPTER – 4

DATA ANALYSIS AND INTERPRETATION

The following consist of the data analysis and interpretation of my questionnaire

4.1 Survey analysis of data Age of Respondents:

TABLE 4.1

AGE	PERCENTAGE
10 to 20	45%
21 to 30	32.5%
31 to 40	7.5%
41 to 50	5%
51 to 60	5%
61 to 70	5%

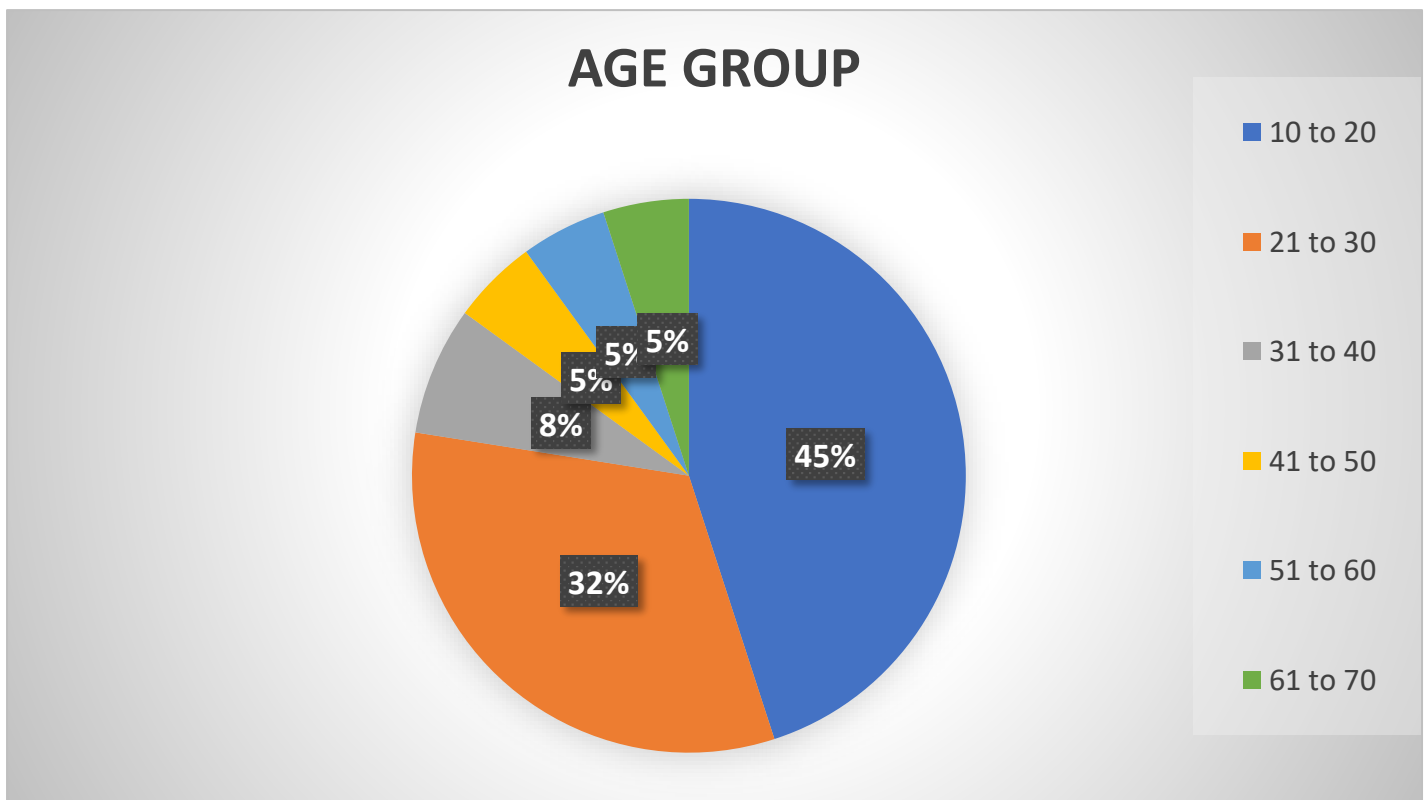
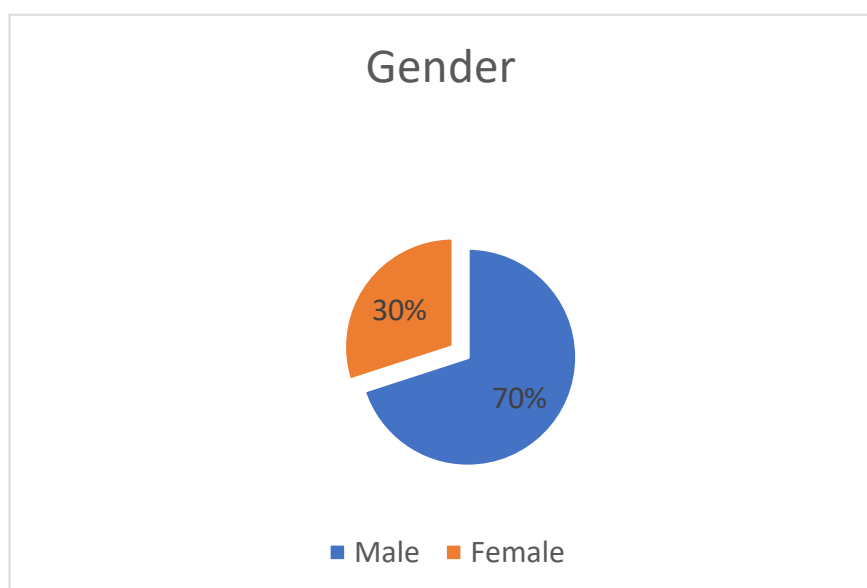


TABLE 4.2 GENDER OF RESPONDENTS

Gender	No, of respondents	Percentage
Male	28	70%
Female	12	30%

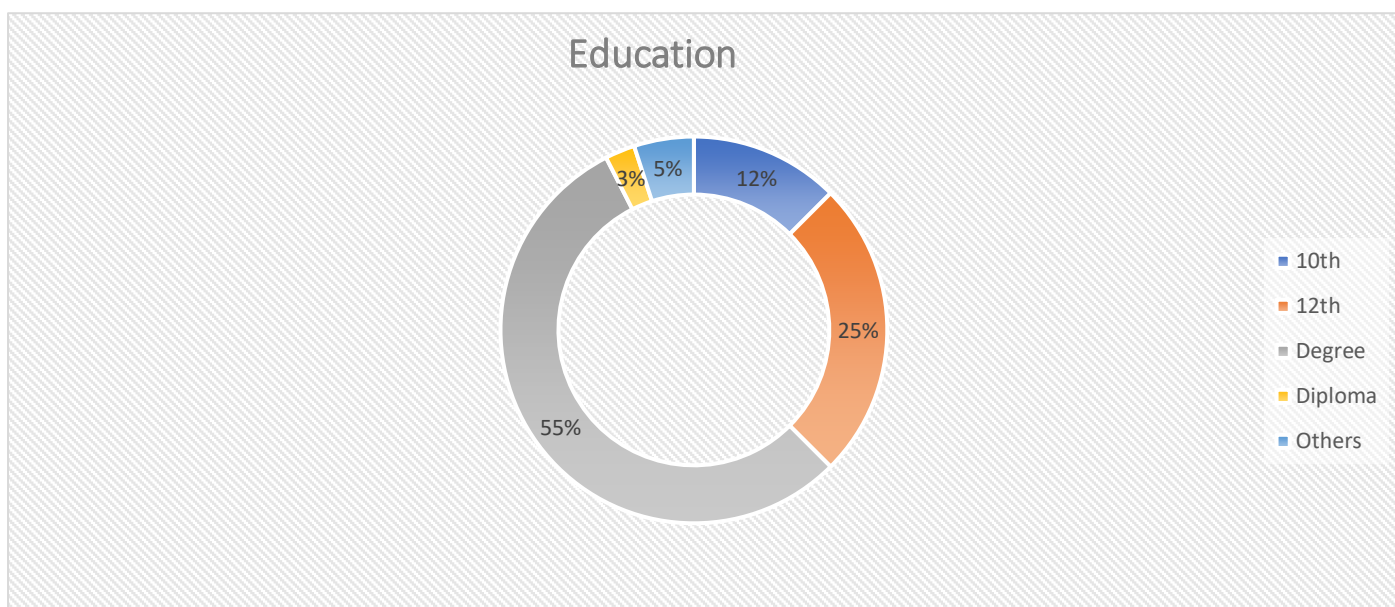


INTERPRETATION:

From the above table interpreted that 70% was respondent male, 30% was respondent female. Majority 70% respondents was male.

TABLE 4.3 EDUCATION QUALIFICATION:

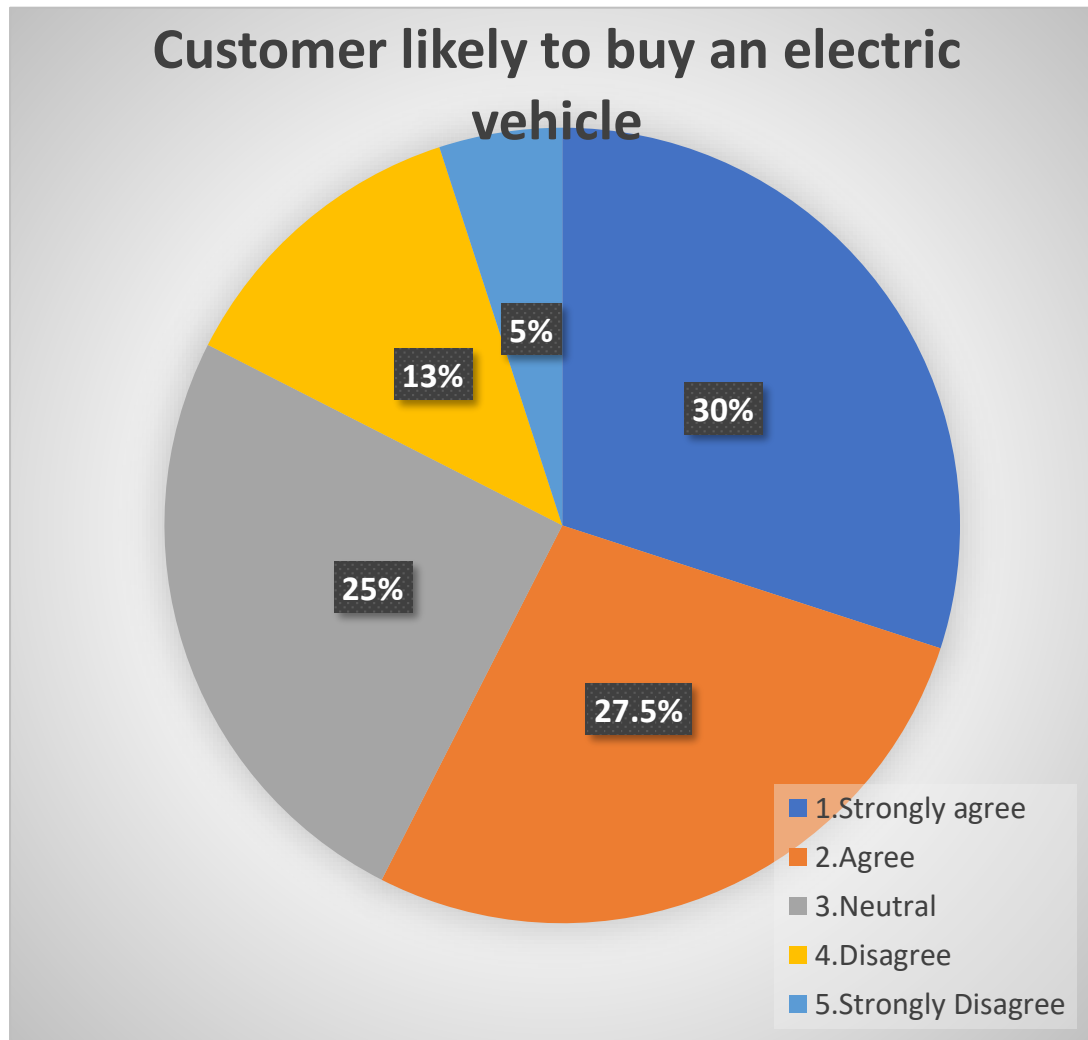
Education	Percentage
10 th	12.5%
12 th	25%
Degree	55%
Diploma	2.5%
Others	5%



INTERPRETATION:

From the above table interpreted that 55% respondent degree person and 25% was respondent 12th, and 12% was respondent 10th, majority of respondent 55% is degree persons.

Chart 4.4 CUSTOMER LIKELY TO BUY AN ELECTRIC VEHICLE



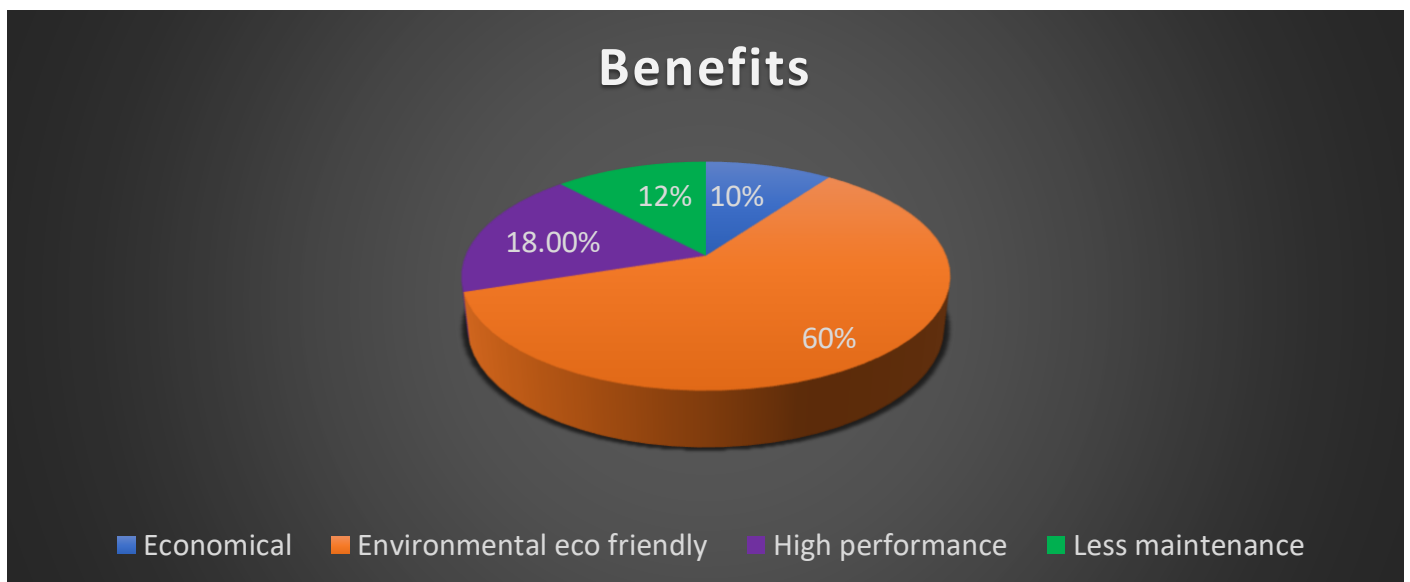
- ❖ The pie chart compares different categories.
- ❖ I use pie chart to data visualization for this analysis.
- ❖ Majority of the respondents are likely to buy electric vehicle.

INTERPRETATION:

In the analysis of chart more customers strongly agree to buy an electric vehicle

TABLE 4.5 What are the benefits of owning an electric car?

Benefits	Percentage
Economical	10%
Environmental Eco Friendly	60%
High Performance	18%
Less Maintenance	12%



INTERPETATION:

From the above table the majority is Environmental Eco Friendly. The most least is high performance. Because of more pollution customer shifting to EVs.

TABLE 4.6 Would you like to shift normal car to electric car?

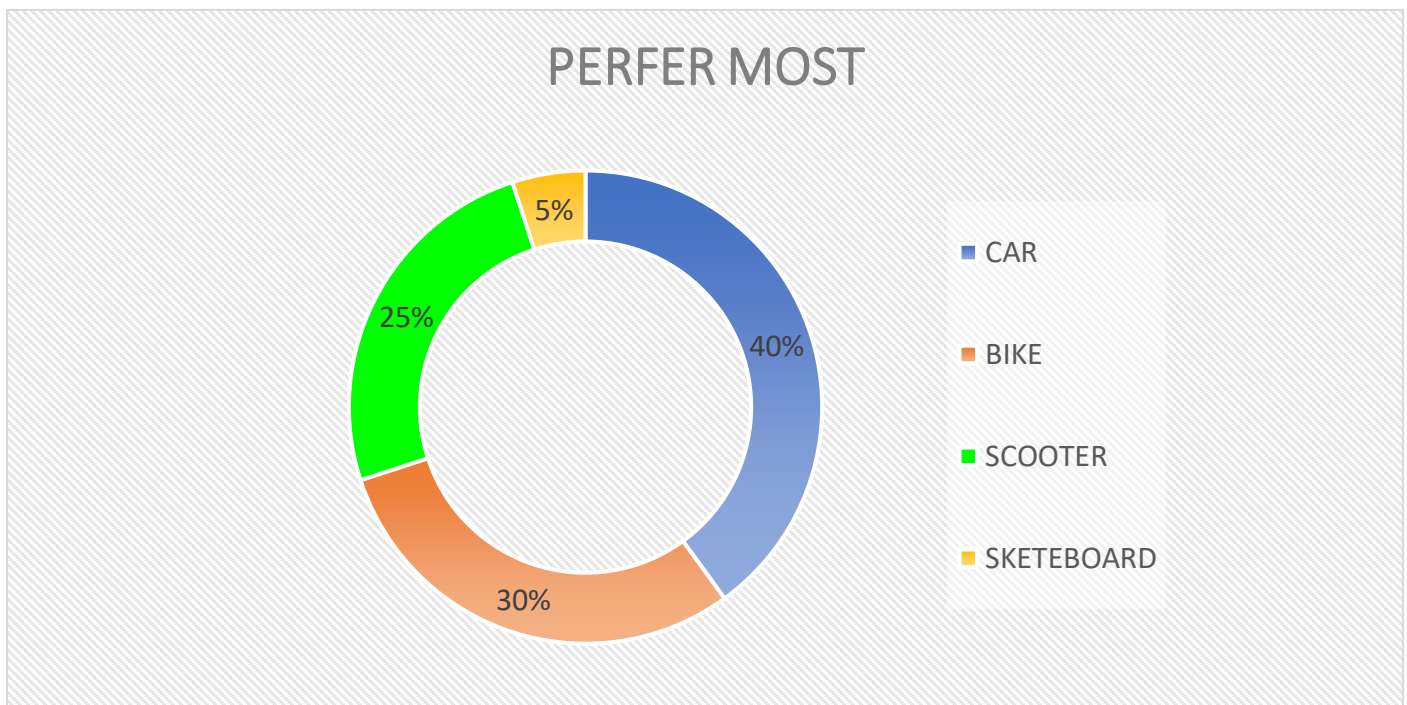
Would you like to shift normal car to electric car	NO OF RESPONDENTS	PERCENTAGE
AGREE	36	90%
DISAGREE	0	0
NEUTRAL	4	10%
TOTAL	40	100%

The information collected through the questionnaire was analysis by using the following statistical tool namely

- ☐ Research questions are always answered with a descriptive statistic.
- ☐ Generally, percentage is appropriate when it is important to know how participants gave a particular answer.
- ☐ Google form application was used to survey and the questionnaire was distributed through social media.
- ☐ total of 40 responses were gathered and analyzed.

TABLE 4.7 Which of the following would you prefer the most if electric modal is available?

Vehicles	percentage
Car	40%
Bike	30%
Scooter	25%
Skateboard	5%

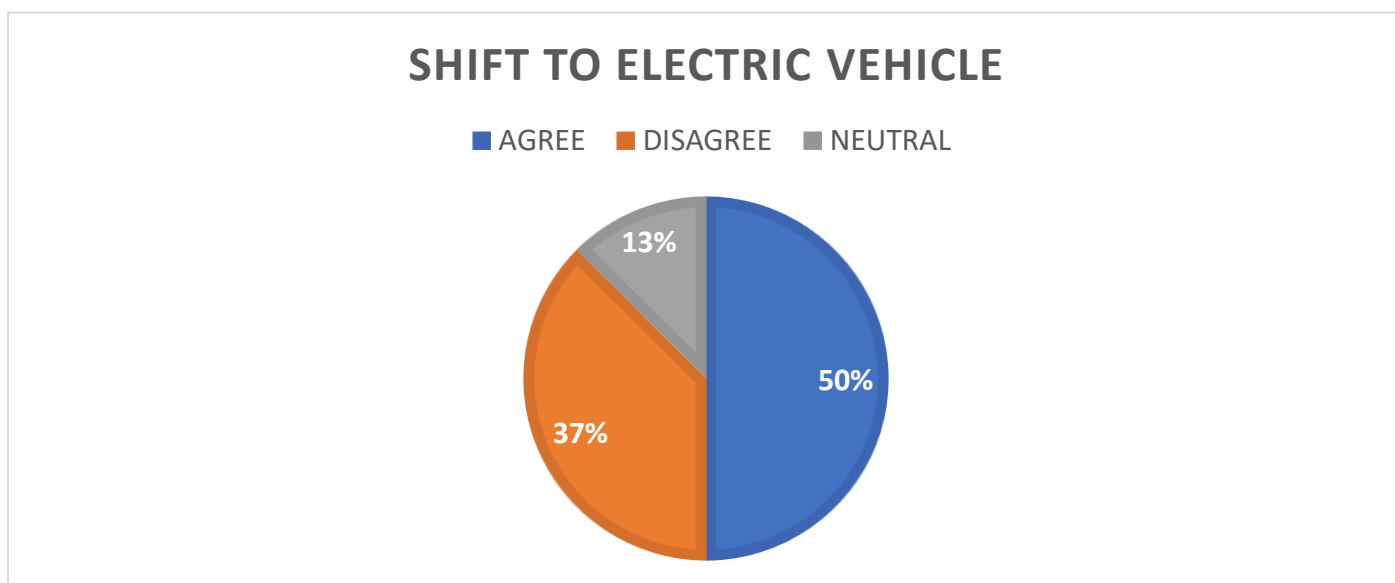


INTERPRETATION:

From the given table interpreted the mostly prefer to buy electric car and bike. Majority of respondent 40% is in car.

TABLE 4.8 Would you like to shift your normal vehicle to electric vehicle?

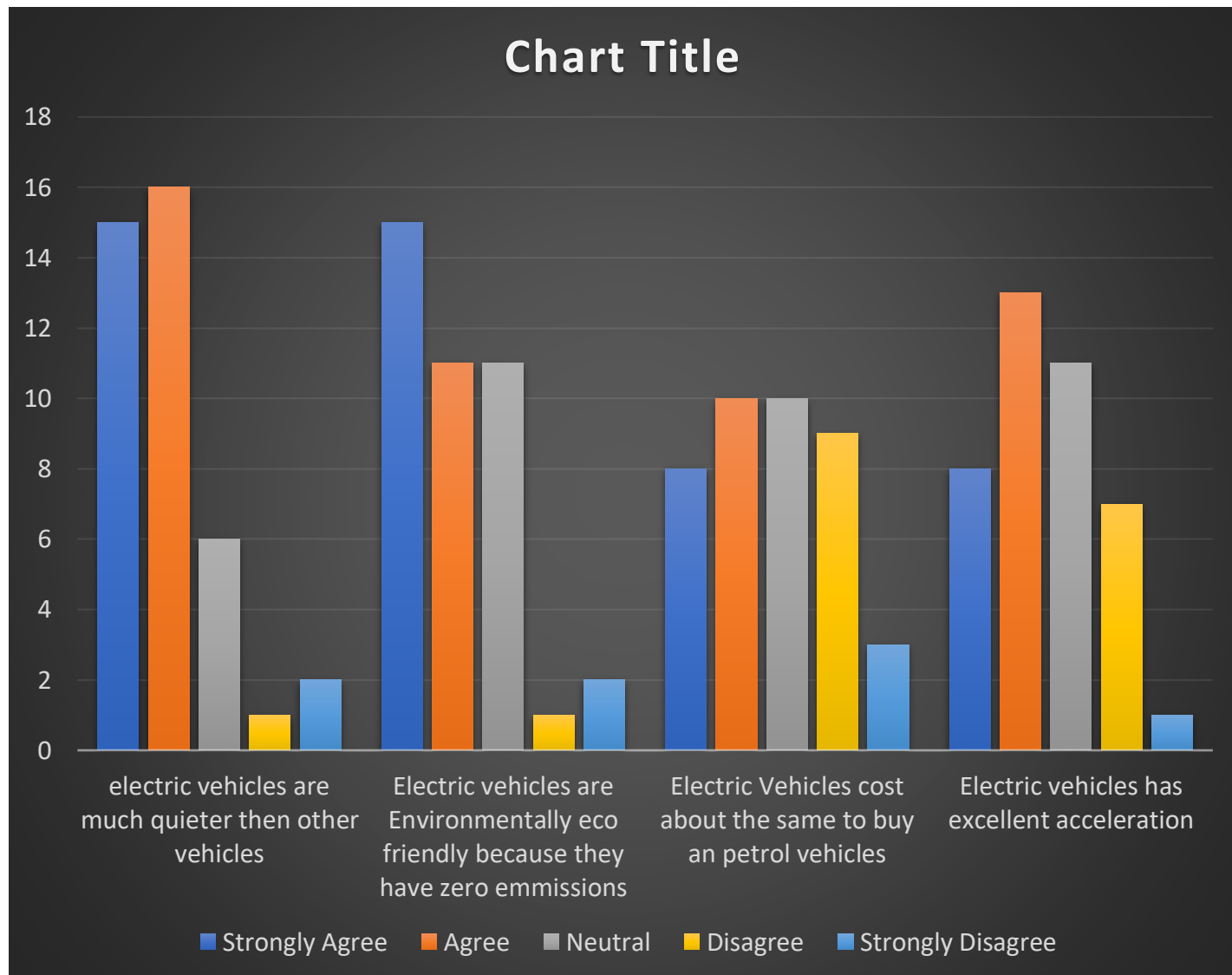
Shift to electric vehicle	Percentage
Agree	50%
Disagree	37%
Neutral	13%



INTERPRETATION:

From the above table interpreted that customer like to shift normal to electric vehicle

TABLE 4.9 BAR CHART LIKERT SCALLING

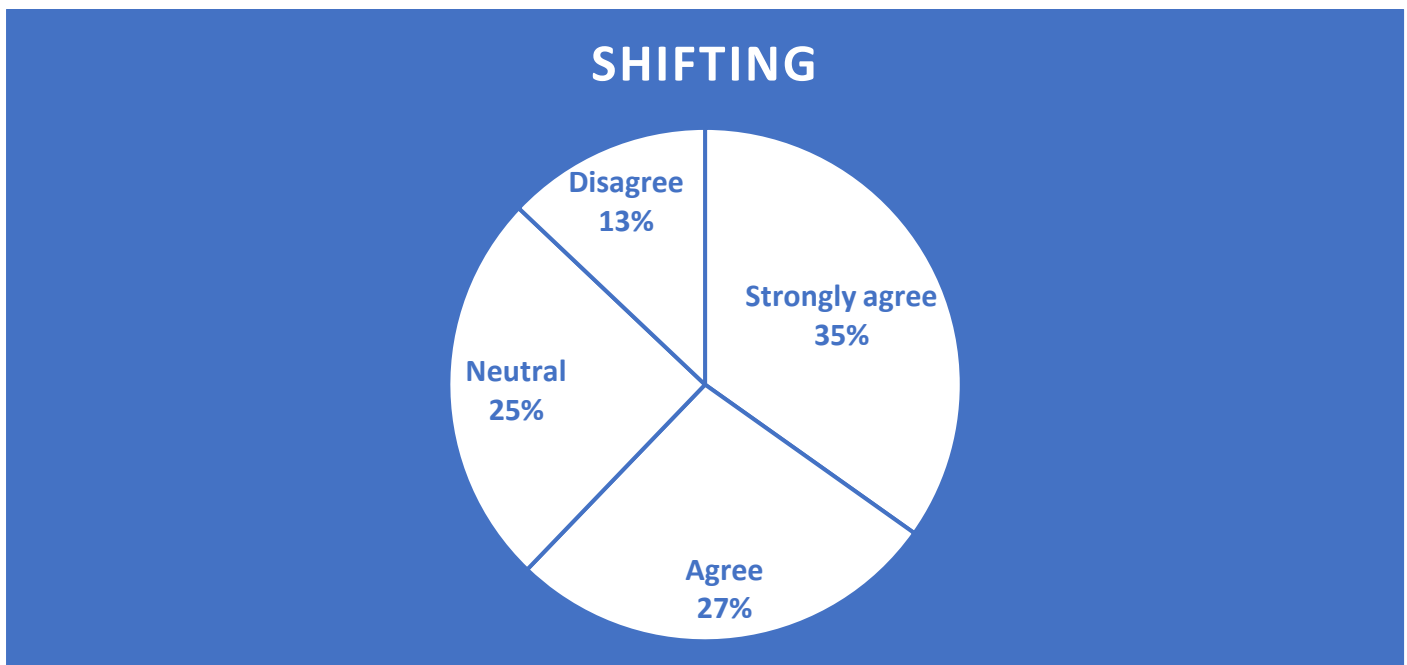


INTERPRETATION:

From the above table interpreted that Electric vehicle are environmentally eco-friendly because they have zero emissions majority of reference Strongly Agree.

Table 4.10 BECOUSE OF PETROL HIKE ARE YOU SHIFTING TO ELECTRIC VEHICLES?

Shifting Because of petrol hike	Percentage
Strongly Agree	35%
Agree	27.5%
Neutral	25%
Disagree	13%

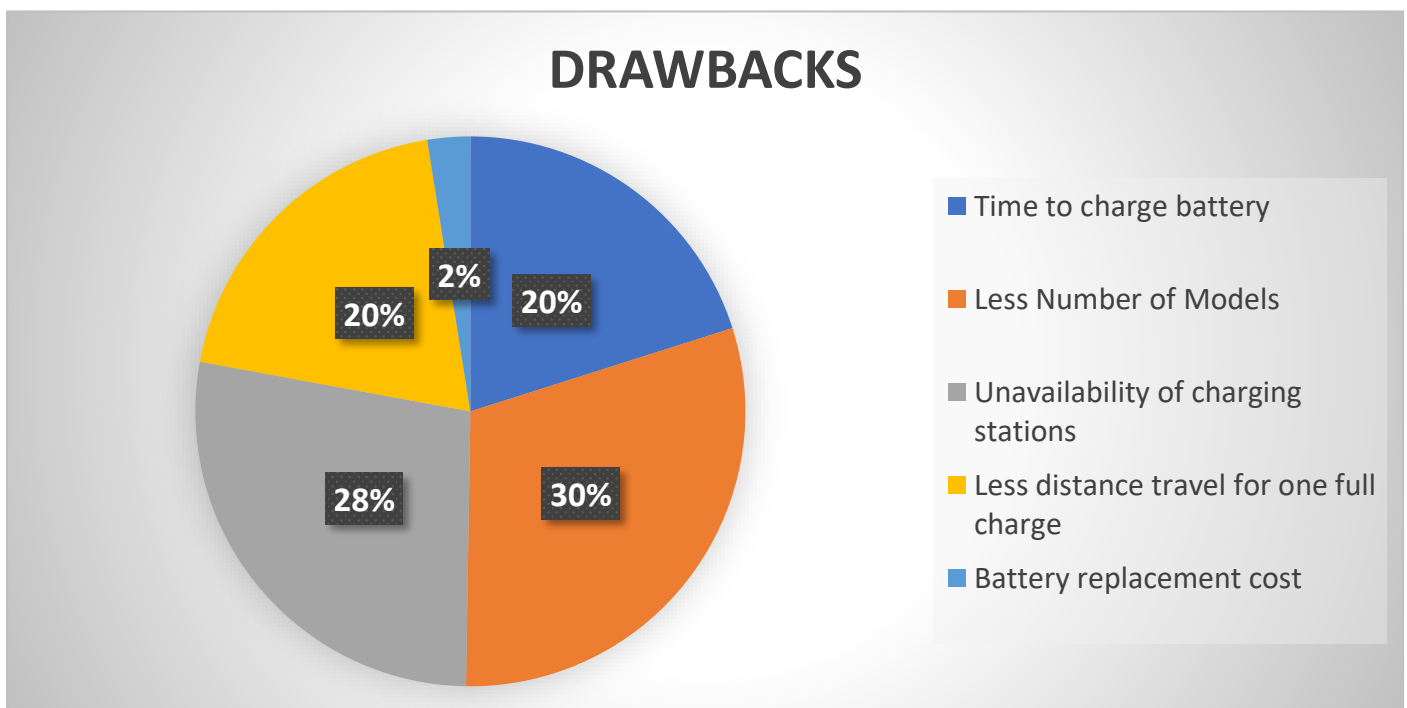


INTERPRETATION:

From the above table interpreted that Because of petrol hike customer strongly agree to shifting to electric vehicle. Strongly agree percentage is 35.

TABLE 4.11 What are the drawbacks of electric vehicle?

Drawbacks	Percentage
Time to charge battery	20%
Less number of Models	30%
Unavailability of Charging Stations	28%
Less distance travel for one full charge	20%
Battery replacement cost	2%



INTERPRETATION:

From the above table interpreted that 30% Respondent choose that Less number of models and 28% of Respondent choose that Unavailability of charging stations. And majority of respondents 30%

CHAPTER – 5

FINDING & SUGGESTION AND CONCLUSION

Based on the analysis and discussion on primary data in the previous chapter Finding, Suggestion and Conclusion of the study in logical manner.

5.1 FINDING

From the questionnaires, the following points are found and noted

- ☐ Majority of 45% respondents are between the age below 25.
- ☐ Majority 60% respondents was male.
- ☐ Majority of respondents 90% is environmental conscious.
- ☐ Majority of respondents 85% are heard about electric vehicles.
- ☐ Majority of respondents 57.5% is ever personally owned electric vehicles.
- ☐ Majority of respondents Agree that electric vehicle quieter than another vehicle.
- ☐ Majority of respondents Strongly Agree the electric vehicles are environmentally eco-friendly.
- ☐ Majority of respondents Strongly Agree that I would like to buy an electric vehicle in next 2 years.
- ☐ Majority of respondents would prefer to buy an electric car.
- ☐ The most of drawback given by respondents is Less number of models in market.

5.2 SUGGESTIONS

The limitation of the current study offers enough scope for future research. This study empirically tested the proposed conceptual model in India. It is advisable to undertake similar studies under different conditions and in different regions.

However, 'intention' to adopt may not lead to an actual buy. Further investigation can suggest whether intention converts to adoption. As noted by Hassan, Shui, and Shaw (2014), the relationship between intent to adopt and buying behavior requires detailed modelling, which is more pronounced for buying environmentally friendly products that are complex, as stated by the authors.

The research measured four covariates: EC, perceived economic benefit, IM and Socking. Further studies could examine the influences of other covariates. These may include perceived consumer effectiveness, information, skepticism, safety, risk, interest and experience.

In the future, it would be meaningful to test this model with actual EV owners. With global concerns on environment increasing every day, this area offers immense scope for future research

- There are few charging stations available.
- To implement more models in electric vehicles.
- Use of electric vehicle can be good way to not being dependent on fuel.

5.3 CONCLUSION:

- With this, we come to following facts that number of expecting vehicle doubling on the roads in the near future the need for this alternating energy is very evident and has promising returns.
- Important to produce vehicles that do less, have longer range and use less energy.
- Lower our toxic emissions and localize greenhouse effects.
- Increases overall efficiency of vehicles.
- With the advancements in technologies a larger number of researches is being don for creating more efficient electric vehicle.

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ANNEXURE

A STUDY ON THE ADOPTION OF ELECTRIC VEHICLES IN INDIA PROJECT QUESTIONNAIRE

1.WHAT IS YOUR NAME?

2.WHAT IS YOUR AGE?

3. ARE YOU ENVIRONMENTAL CONSCIOUS?

Yes

No

4. DO YOU HAVE HEARD ABOUT ELECTRIC VEHICLES?

Yes

No

5. HAVE YOU EVER PERSONALLY OWNED AND ELECTRIC CAR

A) Yes, a hybrid electric/petrol car

B) Yes, a fully electric car

C) No, I have never Owned an electric car

6.

- Electric vehicles are much quieter than other?
- Electric vehicles have excellent acceleration?
- Electric vehicles are environmentally friendly because they have zero emissions?
- The cost to charge an electric vehicle is much less than the fuel costs for petrol or diesel vehicle?
- Electric vehicle cost above the same to buy as petrol or diesel vehicles?
- Electric vehicle technology has improved and they now have much better range?

- a) Strongly Agree
- b) Agree
- c) Neutral
- d) Disagree
- e) Strongly Disagree
- f) Don't know

7. How likely are you to consider buying an electric vehicle in the next 2 years?

- a) Will definitely buy one
- b) Am likely to buy one
- c) Am considering buying one but need convincing
- d) Unlikely to buy one
- e) Definitely won't buy
- f) Don't know

8. Thinking about how far you drive, how often on average do you make each of the following types of trips?

- Short distances near to where I live
- Medium distances (up to 100km trips)
- Long distances (over 100km trips)

- a) Most days
- b) A few times a week
- c) Once a week
- d) Once a fortnight
- e) Once a month
- f) Every 4 months
- g) Less often than every 4 months
- h) Never

9. What are the benefits of owning an electric car?

- a) Economical
- b) Environment Friendly
- c) High Performance
- d) Less Maintenance
- e) Don't Know

10. Do you have plan to buy an electric car or bike in near future?

- Yes
- No

11. Do you prefer a hybrid car (use both electricity and fuel) or electric car?

- Hybrid car or bike
- Electric car or bike

12. which of the following would you prefer the most if electrical modal is available

- a) Car
- b) Bike
- c) Scooter
- d) Rickshaws
- e) Skateboard

13. would you like to shift your normal vehicle to electric vehicle?

- Yes
- No

14. what do you think the drawbacks of electric vehicles?

- a) Time to change battery
- b) Less number of models
- c) Unavailability of charging stations
- d) Less Distance travel for one full charge
- e) Battery replacement cost
- f) Don't know about electric vehicles