

**“A DETAILED STUDY ABOUT CUSTOMER
SATISFACTION IN ELECTRIC VEHICLE BASED IN
KOCHI ”,”**

Project submitted to

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

In partial fulfilment of the requirement for the degree of

BACHELOR OF COMMERCE

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BHARATA MATA COLLEGE, THRIKKAKARA, KOCHI

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BONAFIDE CERTIFICATE

This is to certify that this project entitled “**A DETAILED STUDY ABOUT CUSTOMER SATISFACTION IN ELECTRIC VEHICLE BASED IN KOCHI**”, has been prepared by **Nimitha Rajesh, Amarnath T R and Dani Mathew** under my supervision and guidance in partial fulfilment of the requirement for the Degree of Bachelor of Commerce of Mahatma Gandhi University. This is also to certify that this report has not been submitted to any other institute or university for the award of any degree.

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INTRODUCTION

An electric vehicle is one that operates with the help of an electric motor. Such a vehicle is seen as a replacement for current-generation automobiles. It can be used as a solution for the issues such as pollution, global warming, depletion of natural resources etc. The concept of electric vehicles is the clear-cut solution for the environmental impacts of fuel-based vehicles.

The study is mainly conducted to analyze the attitude and satisfaction of consumers towards electric vehicles. It is aimed to minimize vehicular pollution by shifting towards electric vehicles. The growing popularity and increased usage of electric vehicles are aided with various benefits:

- i. No emissions** – The biggest advantage of an electric vehicle is its green credential. Electric cars are 100% eco-friendly as they run on electrically powered engines.

It does not emit toxic gases or smoke in the environment as it runs on a clean energy source. They are even better than hybrid cars as hybrids are running on gas and produce emissions. So electric vehicles are contributing a healthy environment.

- ii. Savings** - These cars can be fueled for very low prices and many new cars will offer great incentives to get money back from the government for going green. Electric cars also can be a great way to save money in your own life.

- iii. More convenient** - The electric vehicles is easy to recharge and the best part is you will no longer need to run to the fuel station to recharge your car before hitting the road! Even a normal household socket could be used for charging an electric vehicle.

STATEMENT OF THE PROBLEM

The topic of the project is “Customer satisfaction towards electric vehicles based in Kochi”. The study aims to analyze the possibilities of electric vehicles in the current day-to-day life and the attitude of customers especially youth towards electric vehicles and their preferences. The study also would help to focus on the various factors that may have influenced the use of electric vehicles.

NEED AND SIGNIFICANCE OF THE STUDY

Owing to the hike in petrol price, it is desirable to use electric vehicles. Environmental problems can also be solved to a certain extent by the use of electric vehicles. The problem of a decrease in fossil fuels can be solved by the use of electric vehicles. By encouraging people to use electric vehicles, fossil fuels can be stored for the coming generation. The use of electric vehicles is a clear solution for the uncontrolled hike in petroleum prices.

OBJECTIVES OF THE STUDY

- To measure the use of electric vehicles among the youth.
- To understand customer's experience of driving an electric vehicle.
- To determine the factors influencing the purchase and use of electric vehicles.
- To make a study on the impact of petrol price hike on electric vehicles.
- To find out suitable measures to improve the overall satisfaction of the customers.

SCOPE OF THE STUDY

The study focuses on the satisfaction of customers towards electric vehicles and the future estimated consumption. The scope of this study is limited to the area of Kochi , Kerala. This would thus help in providing statistical analysis of the preference of people towards the electric vehicle. The study would also help to infer the experience of different customers of electric vehicles and their views.

METHODOLOGY OF THE STUDY

Primary Data

Primary data are authentic facts that were gathered specifically for the intended use. Typically, this kind of data is brand new and just being gathered. It is helpful for both ongoing research and upcoming research. The primary data for this project is mainly collected by providing questionnaires to customers.

Secondary data

Secondary data are the data that have been collected by and are readily available from other sources. Such data are cheaper and more quickly obtainable than the primary data and also may be available when primary data cannot be obtained at all. The secondary data for this project is obtained through the information available in brochures, articles, magazines, etc.

Sampling Size

The sampling size used for this project is 60 samples.

LIMITATIONS OF THE STUDY

- i. The study is limited to 60 respondents of which are youth. So findings and suggestions given on the basis of study cannot be extrapolated to the entire population.
- ii. The primary data collected may be biased.
- iii. Only a particular place (Kochi) is selected for the survey.

Review of literature

The literature review is a written summary of significant books and other sources on a certain subject. The review's sources may include academic journals, books, essays, reports from the government, websites, and more. The evaluation of the literature offers an outline, summary, and assessment of each source. Typically, it is given as a stand-alone chapter of a graduate thesis or dissertation.

Potential Need for Electric Vehicles, Charging Station Infrastructure and its Challenges for the Indian Market: by Praveen Kumar and Kalyan Dash,

India should invest in small scale reinforcements to manage the load issues locally rather than going for an enormous change. Home charging should be encouraged. Proper planning of place, population, traffic density and safety should be considered before implementing the massive scale charging infrastructure. The integration of activities within the energy and transport fields is important. Development goals through different innovative policies and programs, for instance, drivers of electrical cars are offered a financial consumer incentive, like tax credits, purchase subsidies, discounted tolls, free parking, and access to restricted highway lanes will help the market to grow. (Dash P. K., 2013)

Conventional,hybrid or electric vehicles: Which technology for anurban distribution centre? By Philippe Lebeau, Cathy Macharis.

Movement in cities is significantly impacted by goods transportation. The potential use of electric cars in urban logistical operations was investigated by researchers. The opportunity exists to lower last-mile expenses by using a fleet with a variety of technologies. A fleet size and mix vehicle routing problem with time windows for EVs was provided by the researcher. The authors' primary contribution was taking into account the range fluctuation of EVs. Electric vehicles are frequently the most competitive technology in the compact van categories. In the market for huge vans, diesel has emerged as the most lucrative option because electric cars would have to go further to be cost-competitive. Hybrid vehicles are chosen in the segment of trucks as its running costs and fixed costs are lower than the diesel truck. (Philippe Lebeau, 2015)

International Council on clean transportation: Lingzhi Jin, Peter Slowik,

The early market growth for electric vehicles continues but a number of barriers prevent their widespread uptake. These barriers include the additional cost of the new technology, relative inconvenience of technology considering range and charge times, and consumer understanding about the availability and viability of the technology. This last point, typically referred to as “consumer awareness”, is crucial. (Lingzhi Jin, 2017).

Electric vehicles and India's low carbon passenger transport: a long-term co-benefits assessment by :Subash Dhar, Minal Pathak, Priyadarshi R.Shukla,

The EV scenarios assessment shows that direct financial incentives to EV buyers and support to upfront investments in infrastructure can help increase the share of EVs in India in the short to medium term (2030). In the long-run however, EVs can be competitive vis-à-vis conventional vehicles under a low carbon (i.e. 2 °C temperature stabilization) scenario. Given India's large and growing two-wheeler market, there exists a significant potential for scaling up share of electric two-wheelers in India

(by Subash Dhar , 2017)

A Study of Consumer Perception and Purchase Intention of Electric Vehicles: Pretty Bhalla, Inass Salamah Ali, Afroze Nazneen,

Choice of cars depends upon environmental concern, cost, comfort, trust, technology, social acceptance, infrastructure availability. These arguments have been tested for both conventional cars and EVs.

They assume that these factors have direct influence on individual choice of vehicle. They found that EV manufacturers and government have to invest more in social acceptance of the vehicle by creating more infrastructural facilities, putting more thrust on technology to create trust. The analysis depicts that the population is well aware of the environmental benefits. The responsibility lies on the shoulders of the Government and manufacturers to investing in the manufacturing of vehicles. (Pretty Bhalla ,2018)

Opportunities and Scope for Electric Vehicles in India by Yash Sharma, Chahat Goel, and Janardan Prasad Kesari

It is difficult but essential for the government to develop an ambitious plan for the adoption of EVs in India and to ensure a well-executed execution. India's geography and diversity will create issues that need for careful responses. With the acquisition of three-wheeled cars, buses, and four-wheeled vehicles for government offices, public procurement is anticipated to be a significant factor in EV growth. It is also anticipated that investments made by fleet operators like Ola and Uber and providers of food delivery services will accelerate the initial rise of two- and four-wheeled electric cars. However, the private EVs may take 5-6 years to gain popularity and acceptance. (Janardan Prasad Kesari,2019)

Perception towards electric vehicles and the impact on consumers' preference: by Milad Ghasri, Ali Ardeshiri ,Taha Rashidi,

Relative advantage, or the degree to which a new technology is perceived to be better than an existing technology which is being replaced, has a significant impact on individuals' decisions on when, how and to what extent to adopt. An integrated choice and latent variable model is used, in this paper, to explicitly measure the perceived advantages in electric vehicles over the conventional internal combustion engine vehicles. The analysed data is obtained from a stated preference survey including 1076 residents in New South Wales, Australia. According to the results, the latent component of the model disentangles the perceived advantages across three dimensions of vehicle design, impact on the environment, and safety. These latent variables are interacted with price, driving range and body type, respectively, to capture the impact of perception on preference. The developed model is then used to examine the effectiveness of different support schemes on Millennials (Gen Y), the generation before them (Gen X) and after them (Gen Z). The results show higher probability of adopting electric vehicles for Gen Y, compared to Gen X and Z. Gen Y is found to be the least sensitive cohort to purchase price, and Gen X to be the most sensitive cohort to this attribute. People are more sensitive to incentives for the initial price compared to ongoing incentives for operating costs. Also, offering financial incentives to consumers as a rebate on the purchase price is more effective than allocating the same incentive to manufacturers to reduce the purchase price. (Milad ghasri , 2019)

Implication viability assessment of shift to electric vehicles for present power generation scenario of India: by Vikas Nimesh, Debojit Sharma , V Mahendra Reddy

There is a need to comprehend the effects on the environment as India prepares to switch from internal combustion engines to electric automobiles. .The electric vehicles, on the one side promises to eliminate emissions along roads, however the additional electricity demand that it will generate may result in an increase in emissions at the power generation source. (Vikas Nimesh,2020)

INTRODUCTION

EVs are cars that are powered exclusively or primarily by electricity. Because they use little to no fossil fuels, have fewer moving parts that need to be maintained, and have low running costs, electric vehicles are especially eco-friendly (petrol or diesel). Surface and submerged watercraft, electric aircraft, and electric spacecraft are all examples of electric vehicles (EVs).

Evolution of EV's

•1800's

Many nations' inventors begin experimenting with battery-powered cars. The first electric carriage was created in 1832 by Robert Anderson in Britain. Belgian race car racer Camille Jenatton exceeds 100 km/h in 1899 in the La Jamais Contente, an electric automobile he created. The first motor vehicle death in the US occurred in New York on September 13, 1899, and it involved an electric cab.

•1900-1910's

Female consumers of EVs are targeted by automakers who dress them up with upscale upholstery, flower vases, clocks, and even makeup kits. Companies claim that they are more user-friendly, cleaner, and quieter than gasoline-powered ones. Thomas Edison and Henry Ford are developing an electric car that will "go for 100 miles" that is "affordable and practical." But finally they give up on the endeavour. Ferdinand Porsche creates the electric P1, his first automobile.

•1920-1960's

The need for Ford's mass-produced Model T and other gasoline-powered vehicles is causing EV popularity to fall. 100 Renault Dauphine cars are modified to run on batteries by National Union Electric Corp in 1959. Henney Kilowatts is the name of the updated versions. In response to growing worries over air pollution, other businesses begin producing prototype vehicles.

•1970-1980's

In 1971 and 1972, as the world watches NASA's electric Lunar Roving Vehicle bounce around on the moon, battery power receives a promotional boost. Later in the decade, as gas costs skyrocketed, automakers and the US Department of Energy began looking into alternative fuels. In 1973, GM developed a prototype urban electric car, and in 1974, Sebring-Vanguard released the CitiCar. Widespread acceptance is hampered by a narrow range and performance limitations.

•1990's

Auto companies are putting more of a focus on alternative fuel vehicles as a result of tighter emission regulations. In order to conduct a market research, GM produced over 1,000 of the sleek two-seaters in 1997 and leased them to clients. The first mass-produced hybrids, the

Honda Insight and the Toyota Prius, both go on sale, while Nissan gives a sneak peek at their Altra EV minivan, which runs on lithium-ion batteries.

•2000's

Most of the EV1s are destroyed by GM. Tesla Motors was incorporated by Marc Tarpinning and Martin Eberhard in 2003. Co-founder of PayPal Elon Musk leads an initial \$7.5 million investment and is elected chairman in 2004. In 2008, Tesla unveiled the 15 Roadster sports car, the first electric vehicle (EV) in production to employ lithium-ion battery cells.

•2010's

The Leaf from Nissan became the most popular electric vehicle worldwide. Tesla keeps adding more models. Musk announces his ambitions to produce an electric semi-truck that will compete with those made by Warren Buffett-backed BYD and Daimler. The world's largest EV market is in China due to its emphasis on reducing smog and oil imports, which motivates hundreds of domestic manufacturers and startups to compete for market share.

•The future

By 2021, there will be more than 230 battery-powered vehicles accessible worldwide, according to Bloomberg New Energy Finance. These will include pickup trucks and SUVs like the Jaguar I-Pace and Audi e-tron. EV sales in the US will surpass 1 million by 2024, up from 104,000 in 2017, and deliveries in China will surpass 3 million. To think that it all began with Robert Anderson's electric vehicle in 1832.

Electric vehicle development in India

The United Kingdom (UK) recently agreed to outlaw the sale of new gasoline and diesel vehicles by 2030. Also, as part of its green agenda, the UK strives to establish the enabling infrastructure for electric vehicles (EVs). Such a big move that could have a ripple effect on the green movement around the world. The Indian government is likewise eager to replace vehicles powered by fossil fuels with EVs. In 2017 began by setting an ambitious target of 100% electric cars by 2030. However, due to resistance from the automotive industry and fears of job losses forced the government to lower the target. Thus, without government 16 supporting investment in EV infrastructure upfront and passing the buck to the automotive industry and consumers, it would be difficult to bring transformation in the mobility sector.

India's Necessity for EV's

- **Pollution Control:** In India in 2015, the International Council for Clean Transportation (ICCT) projected that air pollution from vehicle exhaust emissions was responsible for 74,000 premature deaths. Additionally, India is home to many of the world's most polluted cities. Delhi, for instance.
- **Combating Climate Change:** India's ranking dropped from 14th in 2017 to fifth in 2018 on the global vulnerability ladder of the Climate Risk Index 2020, which was

published in December 2019 by the environmental research tank German watch. This gives India even more justification to prioritise the development of electric automobiles and trucks in its effort to reduce its dependency on fossil fuels.

- **Sustainable Energy Options:** Moving to electric vehicles (EVs) can assist India in reducing its reliance on foreign oil while addressing the issue of energy constraint and shifting to renewable and clean sources of energy.

Associated Obstacles

- **Lack of Battery Cell Manufacturing:** India does not produce primary batteries, which increases the risk of a growing trade deficit. The bulk of manufacturers currently depend on imported batteries from Japan, China, Korea, and Europe.
- **Creating Charging Infrastructure:** Creating charging infrastructure, which must be integrated with current filling stations and at alternative places closer to residences, is another significant difficulty.
- **Limited Grid Capacity:** Niti Aayog report states that India's need for EVs will require at least 10 GW of cells by 2022, which will need to be increased to roughly 50 GW by 2025. However, India can currently only add 20 GW to its infrastructure each time to accommodate all of our additional energy needs. As a result, it would be extremely difficult to meet the need for 10GW of new capacity only for EVs.
- **Local Issues:** Bringing transportation opinions closer to the people is accessible and necessary. Transport challenges similar as traffic, affordability, structure and conveyance systems vacuity are localized issues, stymie the standardization of EVs .Also, it'll be a challenge to produce a competitive advantage in electric vehicle manufacturing, or indeed a request for them, given that India doesn't have the structure or deep pockets like China(world's current leader in electric mobility).

Advantages of Electric Vehicles

1. Low Noise Pollution

Nobody enjoys the obnoxious noise that gasoline-powered vehicles make. Noise pollution can be reduced by using electric vehicles. The absence of noise is a benefit of electric vehicles.

2. Secure Environment

Environment protection should be everyone's top priority. Toxic emissions produced by cars directly affect the environment. Every car that runs on petroleum harms the environment, as we all know.

Electric cars' total eco-friendliness is their strongest attribute. These vehicles pose no risk to the environment. But we've also lately found a fix or a better option for this.

3. Low Cost of Maintenance

Electric cars are propelled by electric motors, which require less maintenance than traditional vehicles. Additionally, compared to a combustion engine, the temperature of an electric engine does not require as much cooling.

4. More Practical

Electric vehicles have a simple and appealing design. When it comes to cars that run on fuel, they demand a lot of work to operate. A malfunctioning gearbox or brake system may also contribute to an accident. The electric vehicle is one of technology's most useful innovations.

5. No Fuel

All drivers have experienced concern as a result of rising gas and oil prices. On the other side, electric vehicles don't need gasoline. When compared to other vehicles on the road today, these fuelless automobiles offer a sensible alternative.

6. Saving Natural Resources

By using vehicles that don't require gasoline or diesel, we are not only preserving our natural resources but also attempting to preserve the environment pollution-free. Consider the possibility of a resource shortage in a few millennia if a large population continuously depletes the planet's natural resources. Natural resource preservation is considerably aided by electric automobiles. We are helping the earth and future generations by doing this.

7. Growing Popularity

Around the world, electric vehicles are becoming more and more common. In many important nations today, the use of electric vehicles is fast increasing. Electric vehicles are also being produced swiftly in India thanks to the Tesla business and many other areas.

8. Paying little for parking fee

The cost of parking for fuel-powered vehicles is high. Today, hundreds of vehicles are seen driving idly on the roads. In these situations, a designated parking place is made to uphold

traffic laws. Parking for electric vehicles is relatively inexpensively priced. Even when parking is free, electric vehicles benefit from it in some locations.

9. Lucrative Investment Opportunities

Manufacturers of electric vehicles have little rivalry. Electric vehicles are expected to soon displace gasoline-powered automobiles due to rising demand and acceptance. Making a fortune is conceivable if money is put towards making electric cars. This is a terrific time to invest in electric automobiles right now.

10. Subsidy Advantages

If you pay cash for an electric vehicle, you can receive a significant discount. Purchasing electric vehicles is also eligible for a subsidy from the Delhi government. Each electric vehicle is given a unique subsidy.

Disadvantages of Electric Vehicles

1. Higher Purchase Cost

Electric vehicles cost far more than conventional cars. The price of a gasoline car ranges from three to four lakh rupees. You might be shocked to find that an electric vehicle only costs ten to twelve lakhs at launch. Not everyone in this situation can use it due to the high cost of purchase it.

2. Low Speed and Range

A car powered by electricity won't be able to travel very far. If speed is a concern, engines-powered vehicles can go farther at a greater rate of speed than electric vehicles. In addition, the driving range is extremely constrained.

3. Low Price on Selling

Fuel-powered vehicles cost a lot to maintain, but they nonetheless command premium prices. With regard to electric cars, you could buy one for less than three times what you pay after using an electric vehicle.

4. The Inconvenience of Service Station

Electric vehicles usages is still in its early stages. Because of this, the stations that serve it are also constructed in limited quantities. There aren't many service stations where vehicles can refuel with electricity even after travelling long distances.

5. Low Energy

The major disadvantage of electric vehicles is that they need to be charged frequently. In addition, as these vehicles' weight increases, their capacity decreases. Electric vehicles may lag behind gasoline-powered ones due to a lack of capacity and power.

6. Battery Expenses

Despite not using fuel, electric vehicles are nonetheless powered by very strong batteries. In addition, if the battery is not changed within a certain amount of time, the car could get damaged.

7. Slow Charging

Unlike vehicles powered by an engine, which can recharge fast, electric vehicles need a long time to charge. These cars take a very long time to charge. In today's quick-paced society, why would anyone waste time filling up a vehicle?

8. Expensive Recharging Options

If there is another option besides charging the electric cars at a station, it is to use the power supply that is connected to the homes to charge them. Your electricity bill can come as a big surprise if you do this. These cars need to be charged with a high-voltage electric current.

9. Problem For Fuel-Producing Countries

You may already be aware of the fact that many countries are only important because of the energy they produce. The economies of many countries, including Iran, Oman, and Saudi Arabia, are driven by fuel sales. These countries might experience a financial crisis if the quantity of diesel-powered vehicles suddenly drops. As a result, the adoption of fuel-efficient electric vehicles could cause issues for nations that produce gasoline.

10. Fewer Users

Electric cars are expensive, therefore not everyone can afford them. The idea that electric automobiles are only accessible to the wealthy is not inaccurate. Due to the poor product supply, one of the primary causes of its high price is the fact that the number of electric vehicles is equally constrained. Low commodity prices and excessive demand have expensive costs.

Conclusion

Therefore, it can be said that electric vehicles offer both benefits and drawbacks. They have several drawbacks but are a fantastic strategy to reduce environmental pollution. Everybody is aware that nothing is perfect or sufficient. The evolution and adaptation are the foundations of

the automotive industry. Going electric will therefore be a highly viable option in the near future until something even better is developed, based on the rate of technological advancement in the field of electric mobility.

Major Players in EV Market

- 1. Tesla:** One of the top participants in the electric vehicle market is Tesla, which was established in 2003 and has its headquarters in California, United States. Tesla designs, develops, produces, and sells high-performance all-electric automobiles as well as energy generation and storage technology. One of the best-selling cars in the US, the business recently debuted the Model 3. The firm has demonstrated over time that it has the ability to produce very creative automobiles. With the construction of its new manufacturing facility in Shanghai, China, the company also intends to establish a significant footprint in the Asia Pacific region.
- 2. BYD Group:** One of the few businesses with a focus on producing commercial electric vehicles is BYD. The company's headquarters are in Guangdong, China, and it was founded in 1995. Automobiles, handset and assembly services, and rechargeable batteries and photovoltaics are the company's three main business segments. BYD is a pro at producing, designing, and putting various products together. Among the places the company has operations on China, the US, Europe, and India. With a focus on partnerships, the company has established alliances all around the world. For instance, Nobina, the largest bus operator in Sweden and the Nordic region, added 20 more e-buses to its rising order intake from BYD in 2019.
- 3. BMW:** BMW was established in 1916 and is a multinational vehicle manufacturing company with its headquarters in Munich, Germany. The business is divided into four divisions: motorcycles, financial services, cars, and other entities. The business sells sedans and SUVs under the automotive category. The business also sells PHEVs like the BMW i3 and i8, which are both electric automobiles. The company intends to sell 25 electrified vehicles by 2025, 12 of which will be all-electric.
- 4. Volkswagen:** Volkswagen is a well-established automotive manufacturer founded in 1937 and headquartered in Wolfsburg, Germany. The company produces cars under 12 different brands—Volkswagen Passenger Cars, Audi, SEAT, ŠKODA, Bentley, Bugatti, Lamborghini, Porsche, Ducati, Volkswagen Commercial Vehicles, Scania and MAN. The business sells commercial vehicles, luxury cars, super cars, SUVs, and minicars. It sells cars with a variety of propulsion systems, including diesel, gasoline, and electric. The company's most selling electric vehicles are e-Golf and e-Up. Volkswagen announced pre-orders for the first variant of its new ID.3 full-electric car in Europe in May 2019. It received 15,000 registrations in no time— already more

than half of the total pre-booking volume of 30,000. Volkswagen expects to introduce around 70 all-electric vehicles by the year 2028.

- 5. Nissan Motors:** Nissan Motor is headquartered in Yokohama, Japan and was founded in 1933. Nissan Motor is a leading manufacturer of vehicles under the Nissan, Infiniti, and Datsun brands worldwide. Its bestseller Nissan Leaf model has dominated the market over the period of time, crossing 200,000 units of sales in 2016. The business sells automobiles and auto components, engines, manual transmissions, vehicles with specialised equipment, industrial equipment engines, and so forth. Additionally, the business produces BEVs and electric vehicles for its clients. In 2019, the company unveiled improved Nissan Leaf Plus model with enhanced new features such as larger battery and a 160 kW electric motor, improved range (up to 363 km) and higher power (214 hp)

CUSTOMER SATISFACTION

Customer satisfaction or CSAT is a marketing word that is commonly employed. It evaluates whether a company's goods and services meet or exceed customers' expectations. The number of customers, or percentage of all customers, whose reported experience surpasses stated satisfaction targets, is what is referred to as a customer's reported experience with a firm, its products, or its services (ratings).

In simple words, customer satisfaction is a measurement that determines how well a company's products or services meet customer's satisfaction. It's one of the most important indicators of purchase intentions and customer's loyalty and it helps in business growth and revenue.

As part of its ongoing Common Language in Marketing Project, the Marketing Accountability Standards Board (MASB) supports the definitions, goals, and structures of the classes of metrics that appear in Marketing Metrics. A customer satisfaction statistic was identified as being extremely helpful by 71% of the roughly 200 senior marketing managers who participated in the poll.

IMPORTANCE OF CUSTOMER SATISFACTION

Customer satisfaction is important since it indicates whether your target audience values the job you are producing. Customer happiness, according to research, increases customer retention, increases customer lifetime value, and strengthens company reputation.

The method a business utilises to keep its current customers for a defined period of time is called customer retention. High retention rates demonstrate how regularly and expertly your company satisfies the needs of its clients. The benefit of having devoted customers is that they are more likely to purchase more from you than first-time customers. Customers are more likely to stick around and do business with you if they are satisfied with the quality of your services.

Your brand will stand out in a crowded market if you have a devoted and happy consumer base. If you have excellent product offerings and a thorough grasp of your clients' demands, you may differentiate your brand from the competition. You create future value by creating communities around your brand.

Maintaining high levels of customer satisfaction is essential for keeping your current consumers and luring new ones. Customers that are not satisfied represent a retention risk, and losing them will harm your entire customer experience.

STEPS IN CUSTOMER SATISFACTION

1. Encourage face-to-face conversations:

This is the most difficult and downright scary part of interacting with customers. If you're not used to this sort of thing, this can be a very nerve-wracking experience. But with time it will become simpler. It is important that he meets the client in person at least once or twice during the course of the project.

2. Respond quickly to messages and keep customers updated

Needless to say, we all know how annoying it can be to wait days for an email or phone call to be answered. It may not always be practical to respond to all customer inquiries within hours, but at least send an email or call back to let them know you got their message. Let your customers know that you are working on their problem, even if you can't fix it right away.

3. Friendly and approachable

Another site pointer told me he could hear a smile over the phone. This is very true. It is very important to be friendly, polite and make the customer feel like they are your friend and that you are helping them. There are times when you want to repeatedly punch a customer in the head with a blunt object - we all do. It is important to keep a clear head, to be responsive to customer requests as much as possible, and to be polite and courteous at all times.

4. Have a customer service policy that is well defined

This may not matter too much if you're just starting out, but having a well-defined customer service policy can save you a lot of time and effort in the long run. What should a customer do if they have a problem? What if the first option doesn't work? Nothing is more frustrating for a customer than not knowing who to contact. Therefore, ensure that your Customer Service Policy is posted on your website or other useful location.

5. Attention to details

It is important to pay attention to small details about the company's customers. It can take a while and it's not always cost effective, but it will increase the satisfaction of the customers. Even something as small as sending a Happy Holidays email to all your customers is something. It shows you care. It shows that there is a real person on the other side of that screen or phone. And most importantly, make your customers feel welcomed, wanted and valued.

6. Foresee your client's needs & go above & beyond to assist them

Sometimes this is easier said than done! However, achieving this supreme level of understanding with the clients will do wonders for the firm's working relationship.

7. Honor Your Promises

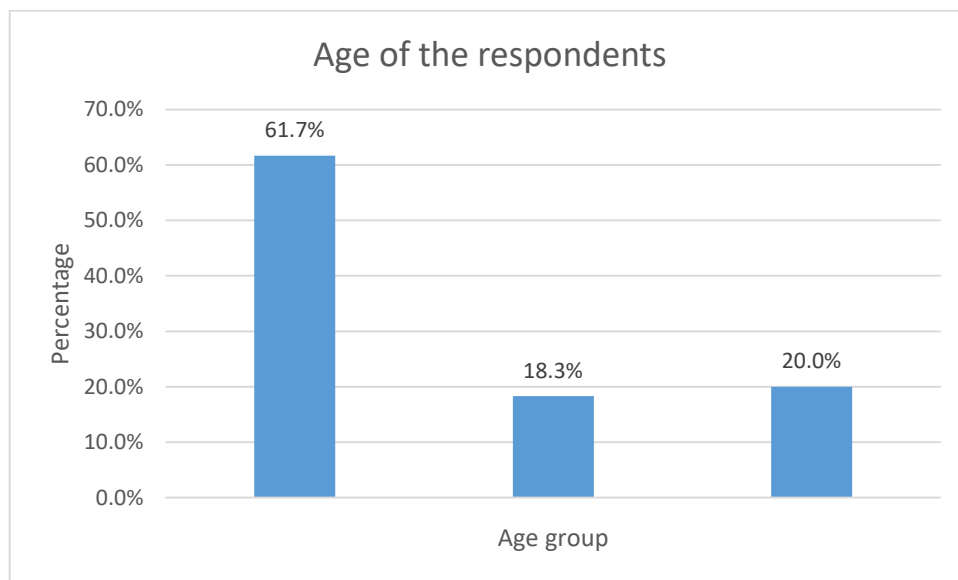
This might be the most significant step. The clear message is to follow through on your promises. Customers dislike being let down. Without your fault, something might occasionally go unfinished or a deadline might be missed. Technology malfunctions, projects sometimes go behind schedule, and subcontractors occasionally deliver late. Here, a brief apology and promise that it will be ready as soon as possible would be appropriate.

4.1 Age of respondents

Table 4.1

Age group	Response	Percentage
18-20	37	61.7%
21-25	11	18.3%
25 and above	12	20%
Total	60	100%

Figure 4.1



Interpretation

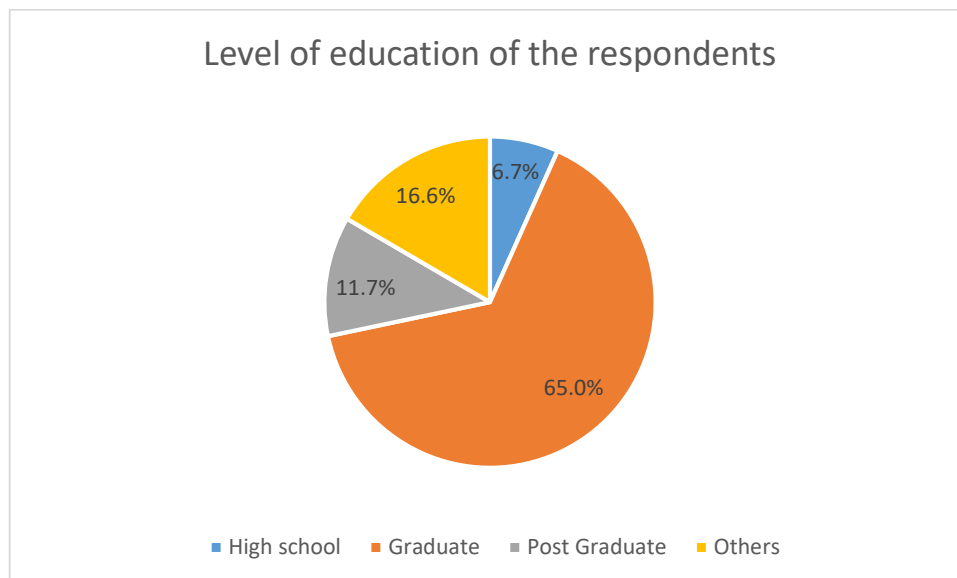
- 61.7% of the respondents are in the age group of 18-20
- 18.3% of the respondents are in the age group of 21-25
- 20% of the respondents are in the age group of 25 and above

4.2 Level of education

Table 4.2

OPTIONS	RESPONSES	PERCENTAGE
High school	4	6.7%
Graduate	39	65%
Post Graduate	7	11.7%
Others	10	16.6%
Total	60	100%

Figure 4.2



Interpretation

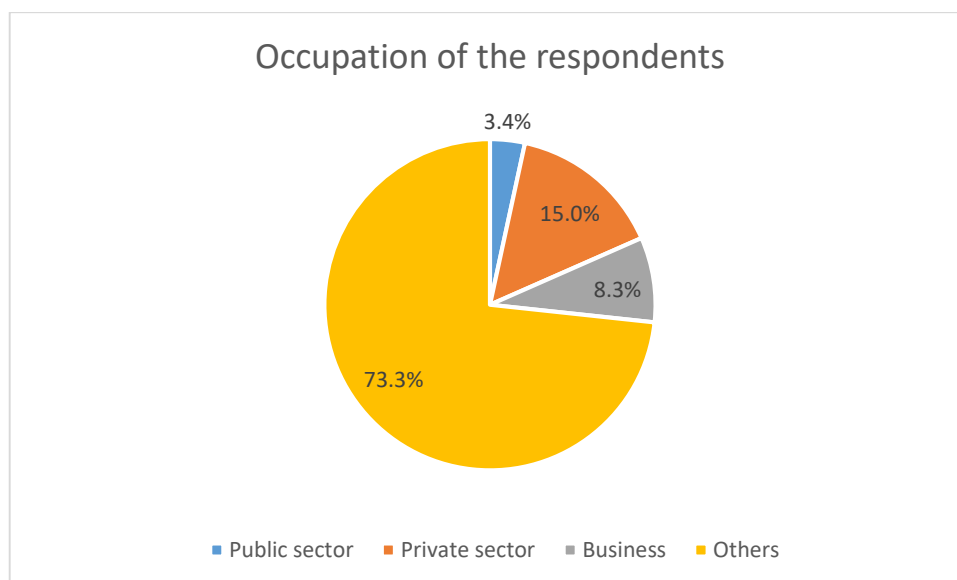
Table 4.2 and figure 4.2 reveals the level of education of the respondents. Majority of the respondents are graduates (65%), 16.6% have completed their education in other forms of education. 11.7% have completed post-graduation and the lowest being high school which is 6.7%.

4.3 Occupation

Table 4.3

Options	Responses	Percentage
Public sector	2	3.4%
Private sector	9	15%
Business	5	8.3%
Others	44	73.3%
Total	60	100%

Figure 4.3



Interpretation

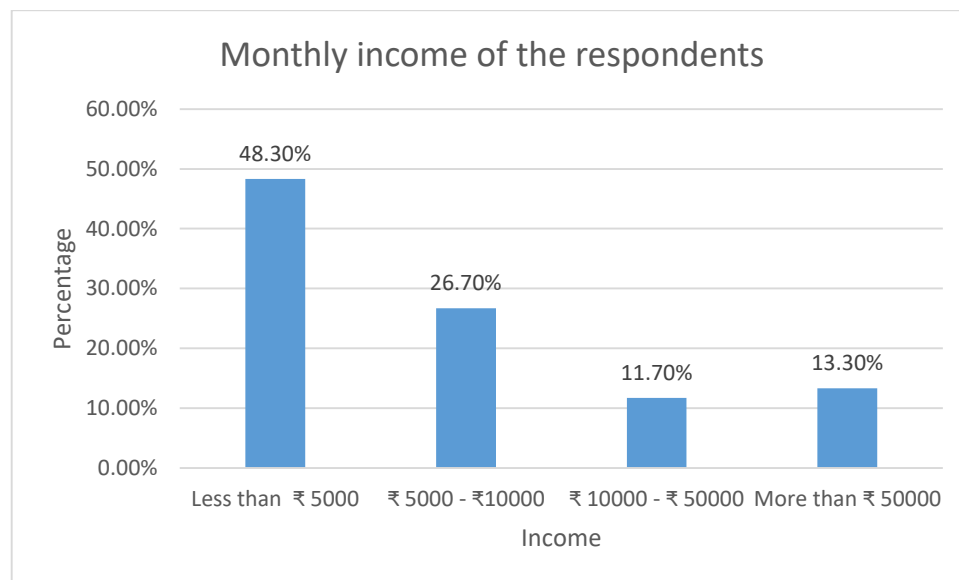
Table 4.3 and figure 4.3 shows the occupation of the respondents. Others being the highest (73.3%) and the public sector has the lowest respondents (3.4%). 15% of the respondents are from private sector and 8.3% respondents from business.

4.4 Monthly income

Table 4.4

OPTIONS	RESPONSES	PERCENTAGE
Less than ₹ 5000	29	48.30%
₹ 5000 - ₹10000	16	26.70%
₹ 10000 - ₹ 50000	7	11.70%
More than ₹ 50000	8	13.30%
Total	60	100%

Figure 4.4



Interpretation

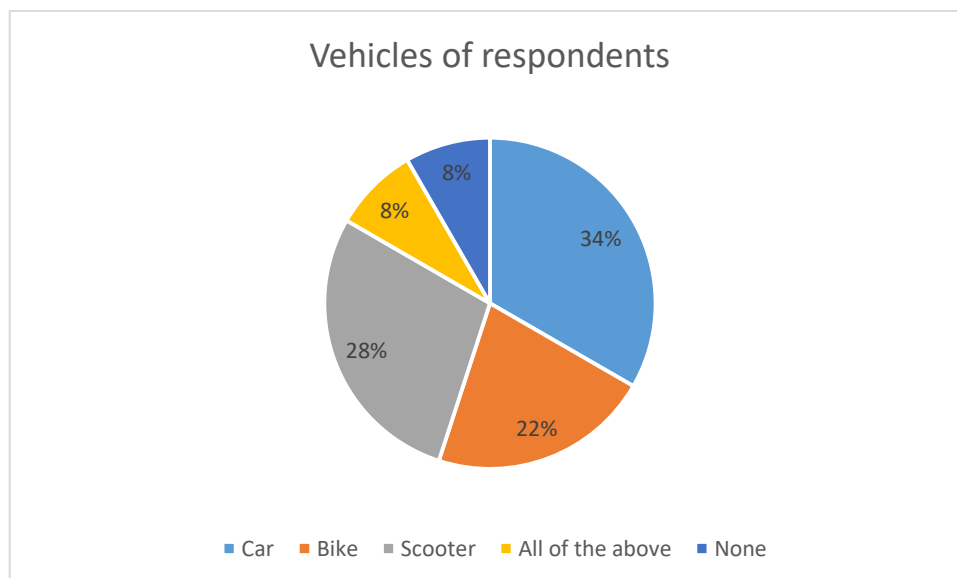
Table 4.4 and figure 4.4 shows the monthly income of the respondents. Majority of the respondents have monthly income less than Rs.5000 (48.3%) and the lowest being having monthly income between Rs.10000 – Rs.50000 (11.7%).

4.5 Vehicles of respondents

Table 4.5

Vehicle	Response	Percentage
Car	20	34%
Bike	13	22%
Scooter	17	28%
All of the above	5	8%
None	5	8%
Total	60	100%

Figure 4.5



Interpretation

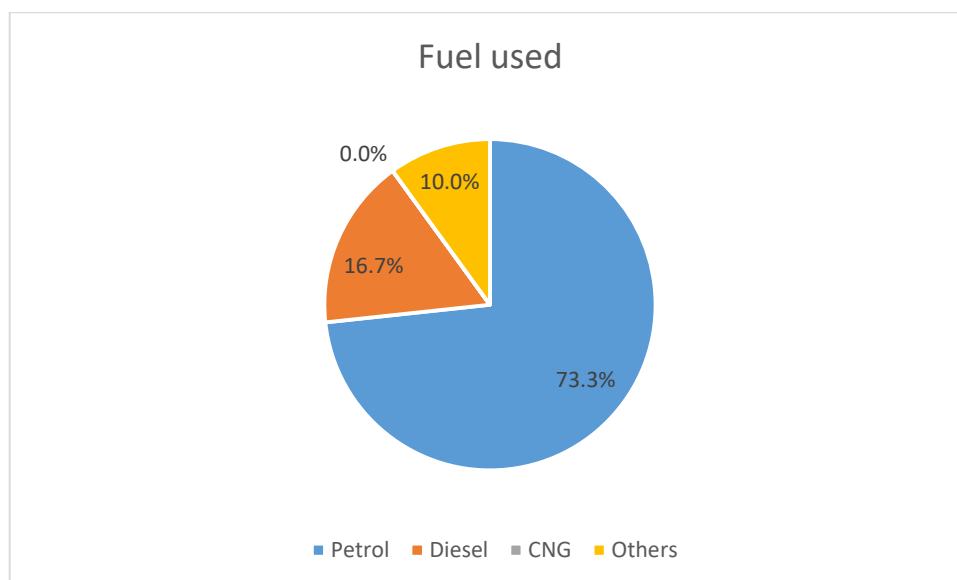
- 34% of respondents have car
- 22% respondents have bike
- 28% respondents have scooter
- 8% respondents have all of the above
- 8% respondents have none

4.6 Fuel used in vehicles

Table 4.6

Fuel	Response	Percentage
Petrol	44	73.3%
Diesel	6	16.7%
CNG	0	0%
Others	10	10%
Total	60	100%

Figure 4.6



Interpretation

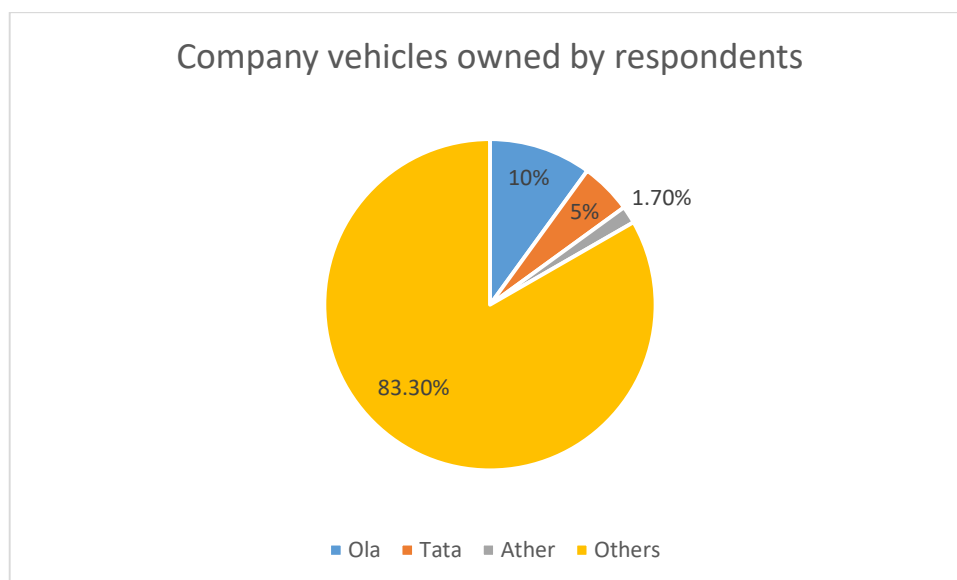
Out of 60 respondents 73.3% are using petrol as fuel for their vehicles , 16.7% of the respondents are using diesel , 10% are using other forms of fuels while no one is using CNG for their vehicles.

4.7 Company vehicles owned by respondents

Table 4.7

Company	Response	Percentage
Ola	6	10%
Tata	3	5%
Ather	1	1.7%
Others	50	83.3%
Total	60	100

Figure 4.7



Interpretation

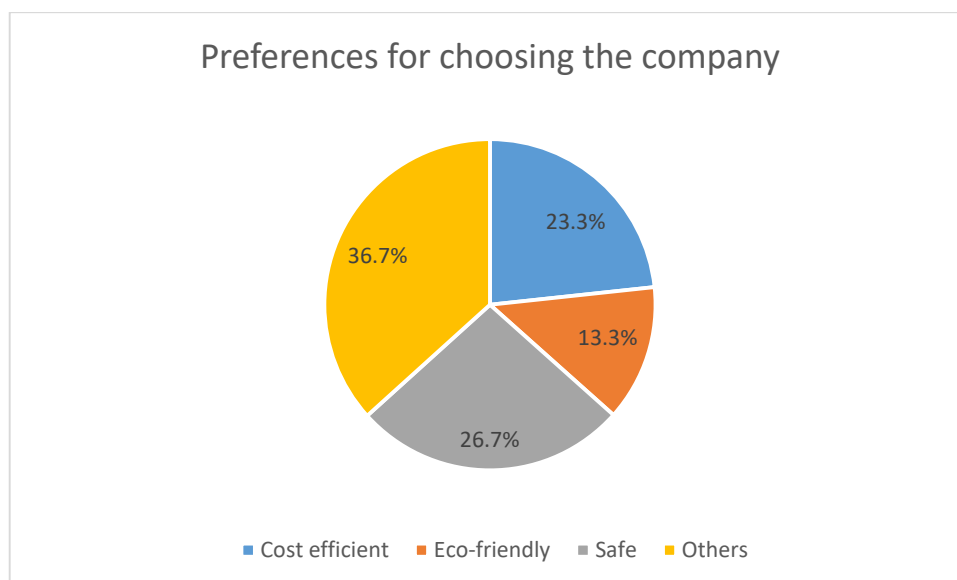
- 1.7% of the respondents own vehicle from Ather energy
- 5% of the respondents own vehicles from Tata motors
- 10% of the respondents own vehicles from Ola electric
- 83.3% of the respondents own vehicles from other companies

4.8 Preferences for choosing the company

Table 4.8

Options	Response	Percentage
Cost efficient	14	23.3%
Eco-friendly	8	13.3%
Safe	16	26.7%
Others	22	36.7%
Total	60	100%

Figure 4.8



Interpretation

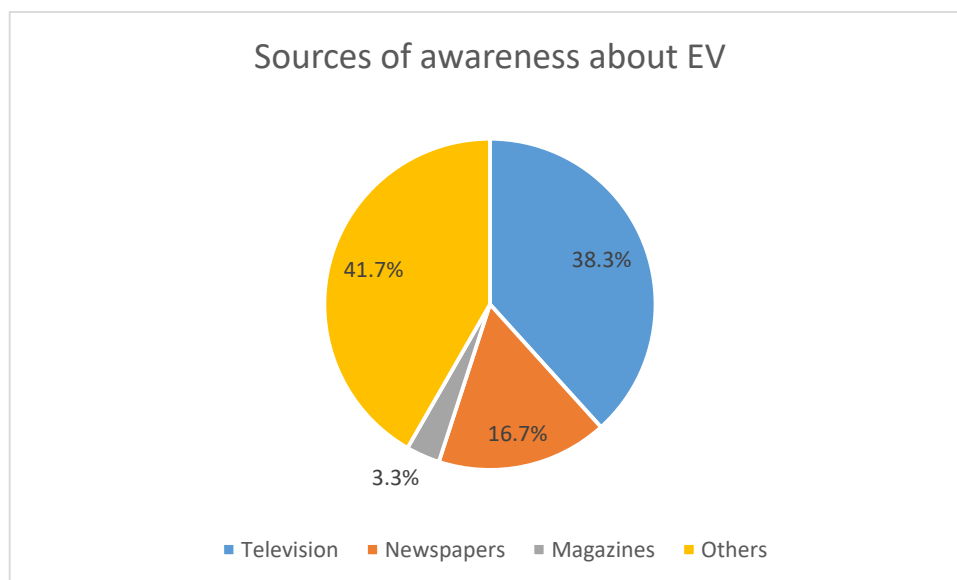
Out of 60 respondents, 23.3% of the respondents prefer the cost-efficient company, 13.3% of the respondents prefer the company having eco-friendly benefits, 26.7% of the respondents prefer safety and the remaining respondents have other preferences.

4.9 Sources of awareness about electric vehicles

Table 4.9

Sources	Responses	Percentage
Television	23	38.3%
Newspapers	10	16.7%
Magazines	2	3.3%
Others	25	41.7%
Total	60	100%

Figure 4.9



Interpretation

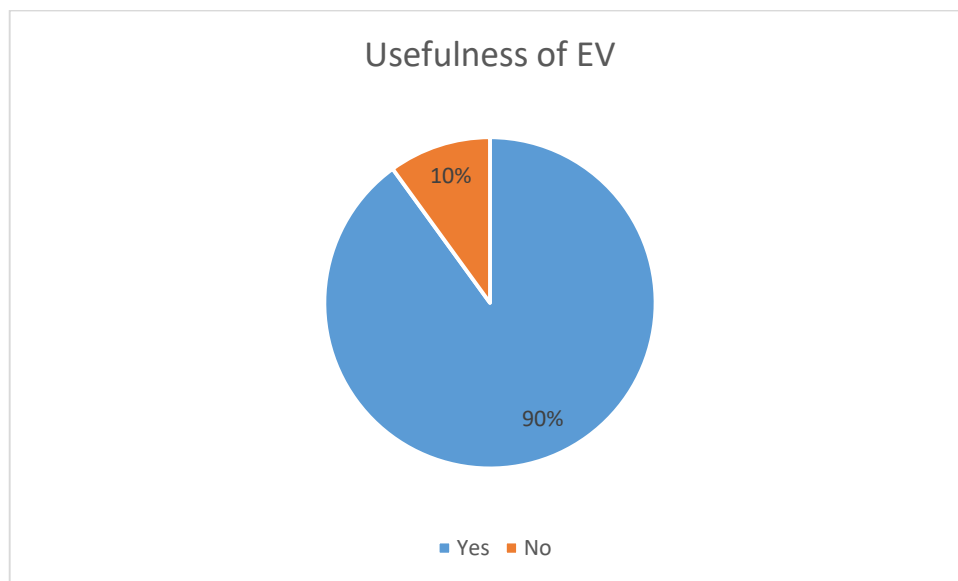
Out of 60 responses, 38.3% of respondents heard about electric vehicles from television, 16.7% from newspapers, 3.3% from magazines and 41.7% from other sources.

4.10 Usefulness of electric vehicles towards youth

Table 4.10

Options	Response	Percentage
Yes	54	90%
No	6	10%
Total	60	100%

Figure 4.10



Interpretation

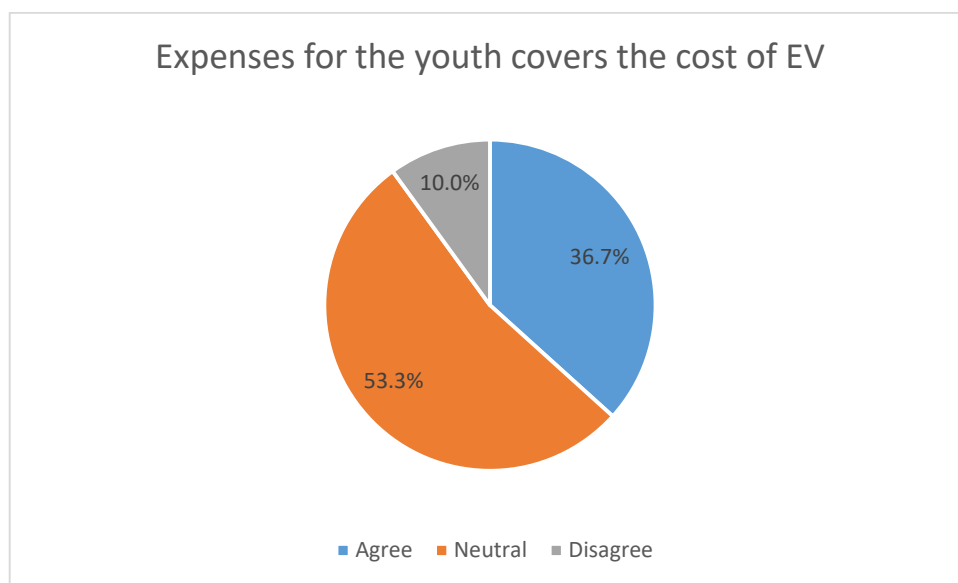
Out of 60 respondents 90% have agreed that the electric vehicles are useful to the youth and remaining 10% do not agree that the electric vehicles are useful to the youth.

4.11 Expenses for the youth covers the cost of electric vehicles

Table 4.11

Options	Response	Percentage
Agree	22	36.7%
Neutral	32	53.3%
Disagree	6	10%
Total	60	100%

Figure 4.11



Interpretation

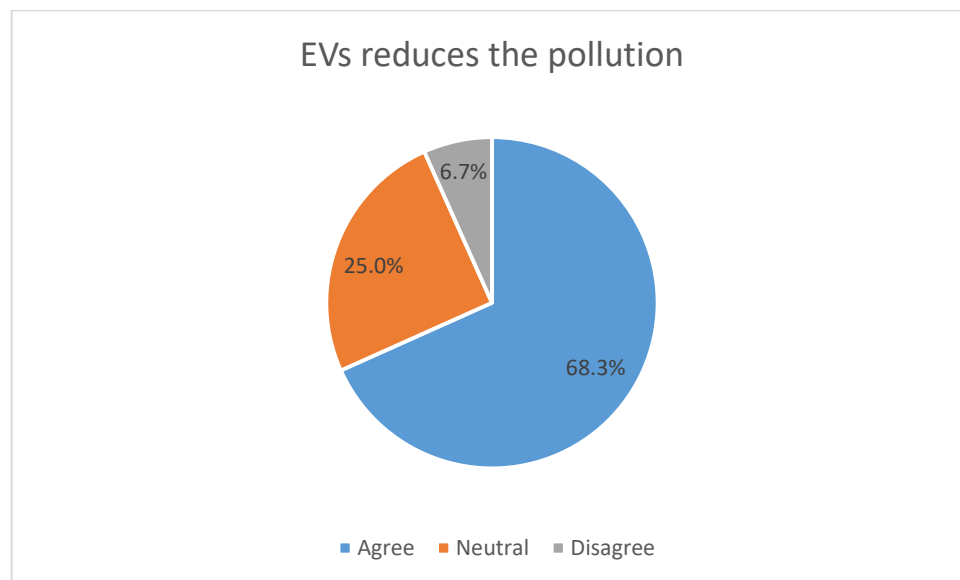
Out of 60 respondents, 36.7% of the respondents have agreed that the expenses for the youth covers the cost of EV, 53.3% of the respondents have neutral opinions and 10% of the respondents disagree that the expenses for the youth covers the cost of electric vehicles.

4.12 Electric vehicles reduces the pollution

Table 4.12

Options	Responses	Percentage
Agree	41	68.3%
Neutral	15	25%
Disagree	4	6.7%
Total	60	100%

Figure 4.12



Interpretation

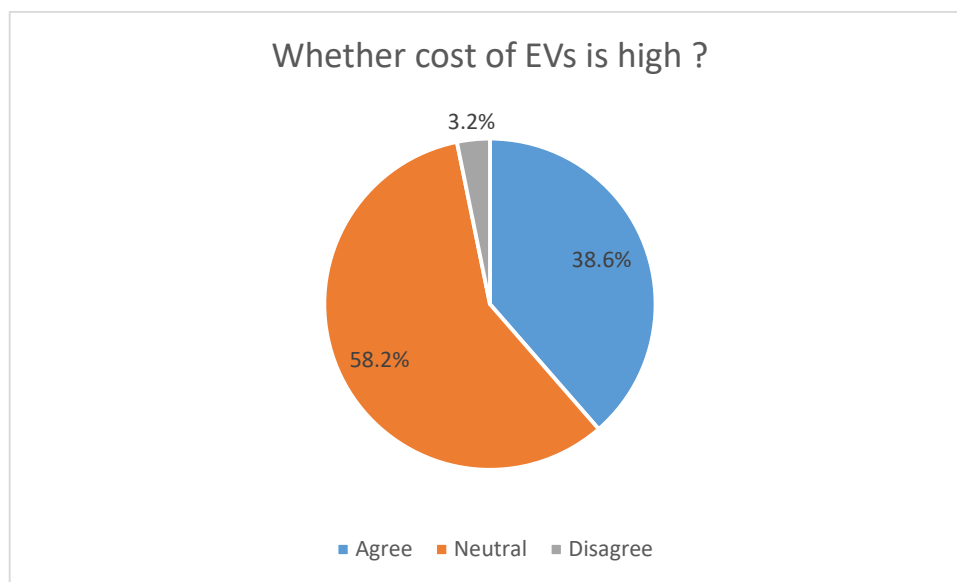
Majority of the respondents (68.3%) have agreed that electric vehicles will reduce the pollution to a certain extent while 6.7% respondents have disagreed and remaining 25% of the respondents being neutral.

4.13 Whether Cost of electric vehicles is high ?

Table 4.13

Options	Responses	Percentage
Agree	23	38.6%
Neutral	35	58.2%
Disagree	2	3.2%
Total	60	100%

Figure 4.13



Interpretation

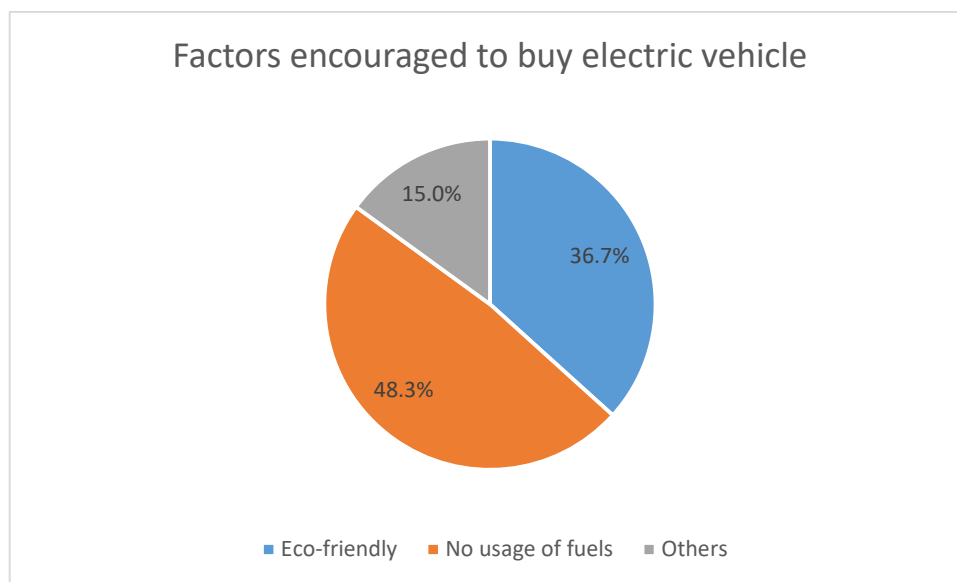
Majority of the responses (58.2%) are neutral as to whether electric vehicles are expensive, 38.6% of the respondents have responded that electric vehicles are expensive and remaining (3.2%) respondents have disagreed.

4.14 Factors encouraged to buy EV

Table 4.14

Factors	Responses	Percentages
Eco-friendly	22	36.7%
No usage of fuels	29	48.3%
Others	9	15%
Total	60	100%

Figure 4.14



Interpretation

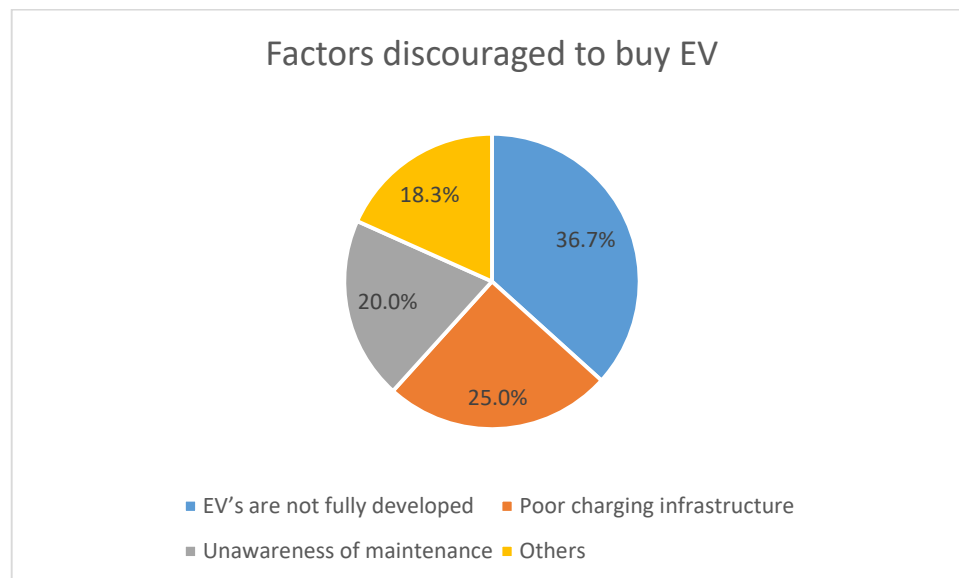
- 36.7% respondents chose eco-friendly as the encouraging factor to buy EV.
- 48.3% respondents chose no usage of fuels as a factor.
- 15.0% respondents chose other factors.

4.15 Factors discouraged to buy EV

Table 4.15

Factors	Responses	Percentage
EV's are not fully developed	22	36.7%
Poor charging infrastructure	15	25%
Unawareness of maintenance	12	20%
Others	11	18.3%
Total	60	100%

Figure 4.15



Interpretation

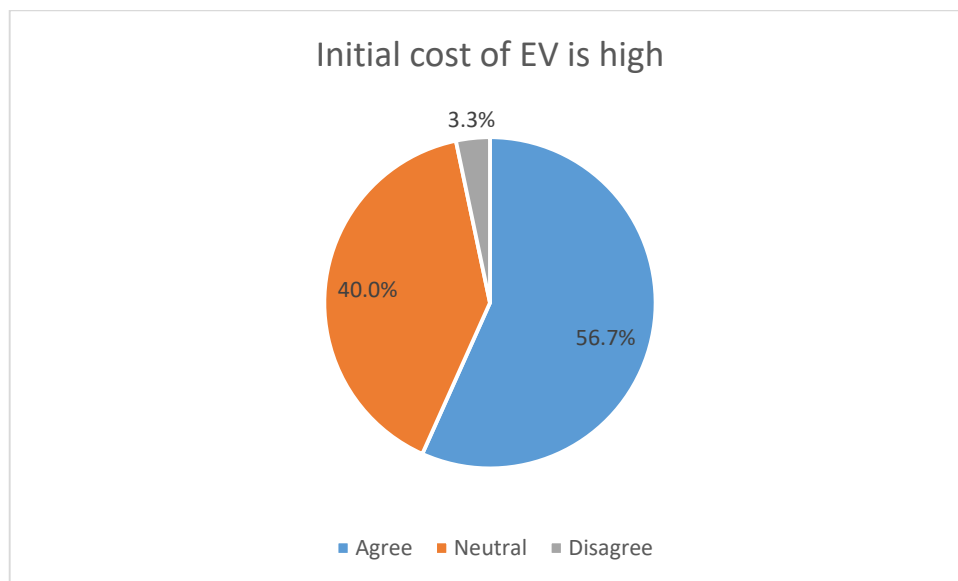
- 36.7% of the respondents says that EV's are not fully developed which is a discouraging factor to buy EV.
- 25% of the respondents says that the charging infrastructure is poor.
- 20% of the respondents says that they are unaware about the maintenance of EV.
- 18.3% of the respondents chose other factors.

4.16 Initial cost of electric vehicle is high

Table 4.16

Options	Responses	Percentage
Agree	34	56.7%
Neutral	24	40%
Disagree	2	3.3%
Total	60	100%

Figure 4.16



Interpretation

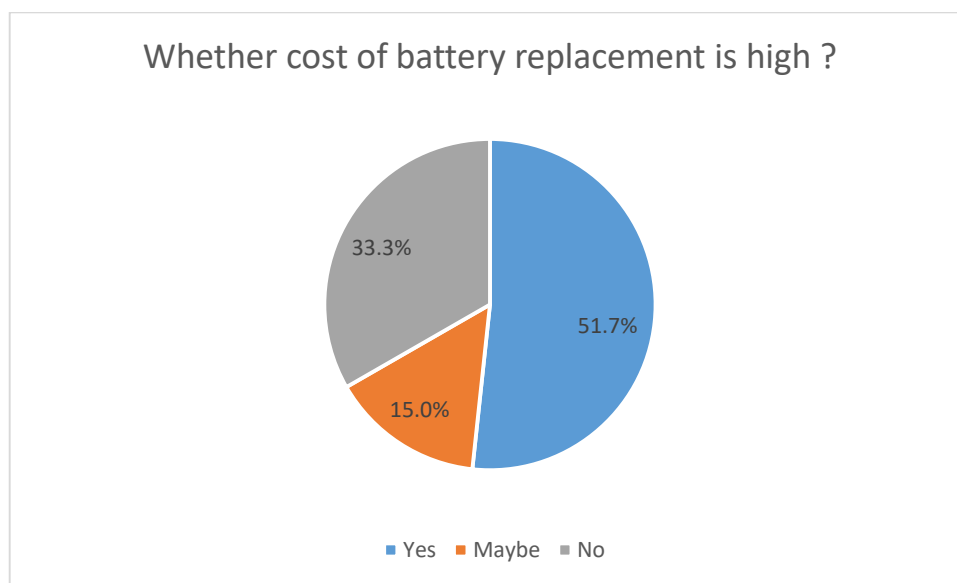
Majority of the respondents (56.7%) have agreed that the initial cost of electric vehicles is high while 3.3% of the respondents have disagreed and the remaining(40%) being neutral.

4.17 Whether Cost of battery replacement is high ?

Table 4.17

Options	Responses	Percentage
Yes	31	51.7%
Maybe	9	15%
No	20	33.3%
Total	60	100%

Figure 4.17



Interpretation

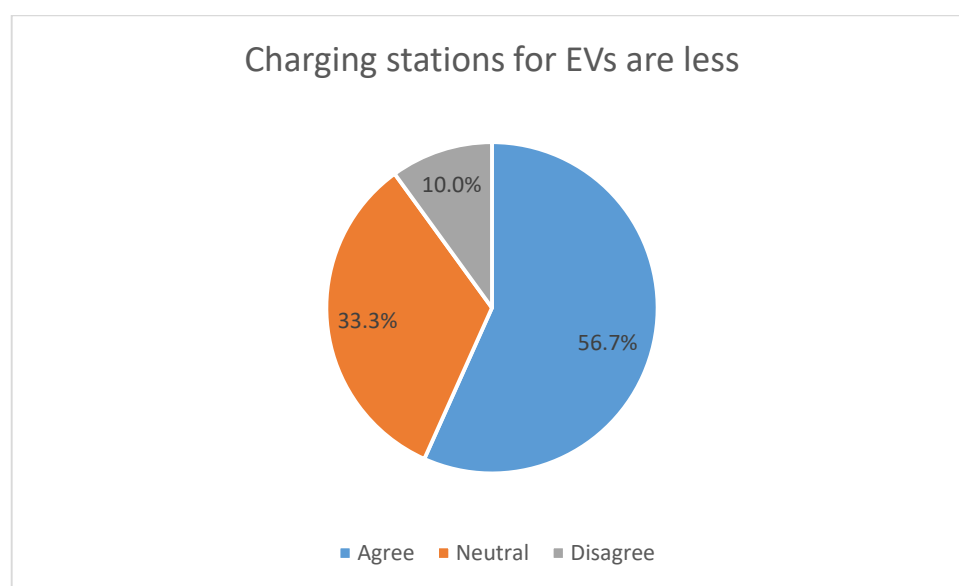
Table 4.17 and figure 4.17 shows whether the cost of battery replacement for electric vehicle is high. Out of 60 respondents 51.7% responded that the cost is high while 15% have responded maybe it is high or low and the remaining (33.3%) have responded that the cost of battery replacement is low.

4.18 Charging stations for electric vehicles are less

Table 4.18

Options	Responses	Percentage
Agree	34	56.7%
Neutral	20	33.3%
Disagree	6	10%
Total	60	100%

Figure 4.18



Interpretation

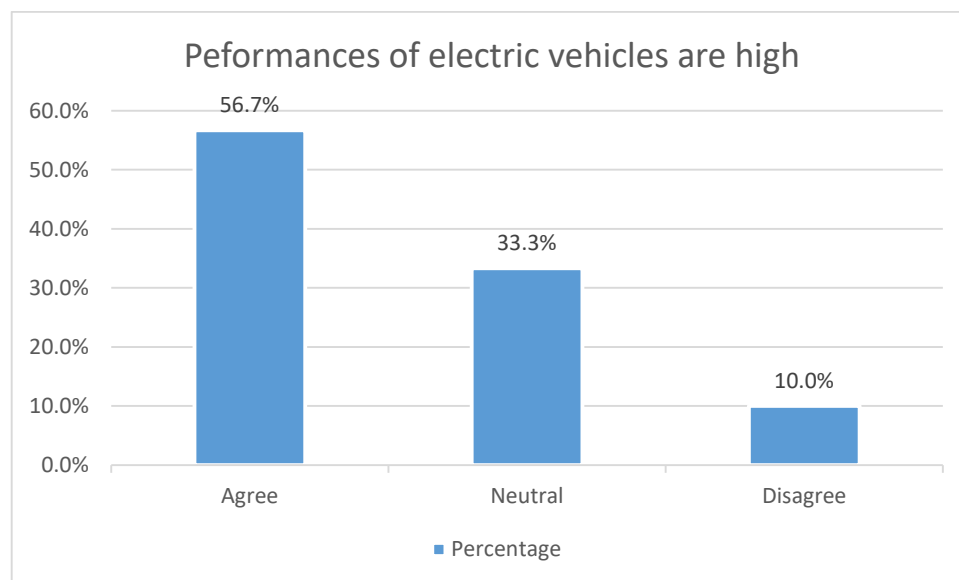
Majority of the respondents (56.7%) are of the opinion that the number of charging stations for electric vehicles are less. 33.3% of the respondents have neutral opinion about the charging station of the electric vehicles. 10% of the respondents disagree that the number of charging stations for EV's are less.

4.19 Performance of electric vehicles are high

Table 4.19

Options	Responses	Percentage
Agree	34	56.7%
Neutral	20	33.3%
Disagree	6	10%
Total	60	100%

Figure 4.19



Interpretation

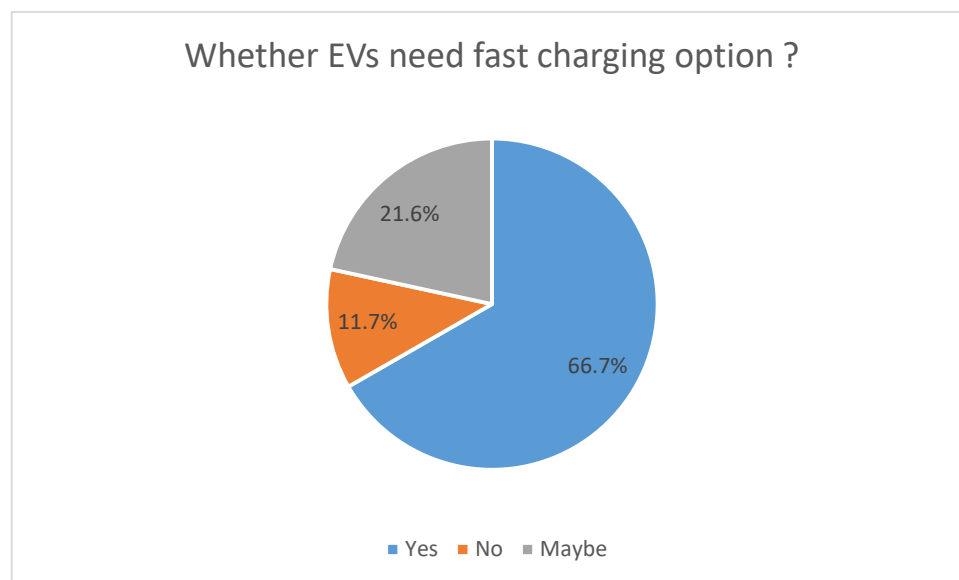
Table 4.19 and figure 4.19 shows the respondents' opinion about whether the performance of electric vehicles is high as compared to other vehicles. 56.7% of the respondents have agreed, 33.3% have neutral opinion and remaining 10% disagree that the performance of EV's are high.

4.20 Whether EVs need fast charging option ?

Table 4.20

Options	Responses	Percentage
Yes	40	66.7%
No	7	11.7%
Maybe	13	21.6%
Total	60	100%

Figure 4.20



Interpretation

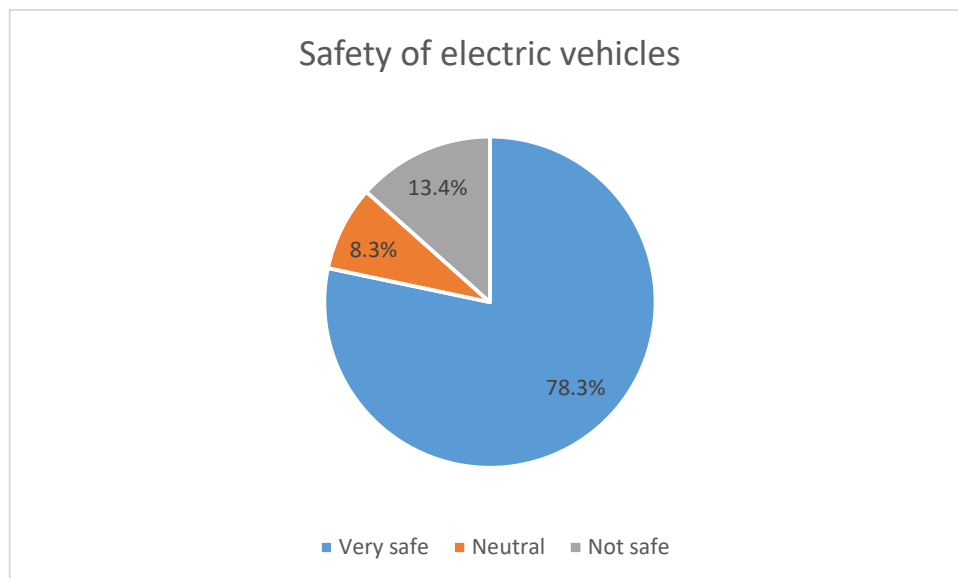
Majority of the respondents (66.7%) have an opinion that there should be fast charging option for EVs and 11.7% of the respondents do not have any opinion and 21.6% of the respondents have an opinion that there is a possibility that EV requires fast charging option.

4.21 Safety of electric vehicles

Table 4.21

Options	Responses	Percentage
Very safe	47	78.3 %
Neutral	8	8.3 %
Not safe	5	13.4 %
Total	60	100 %

Figure 4.21



Interpretation

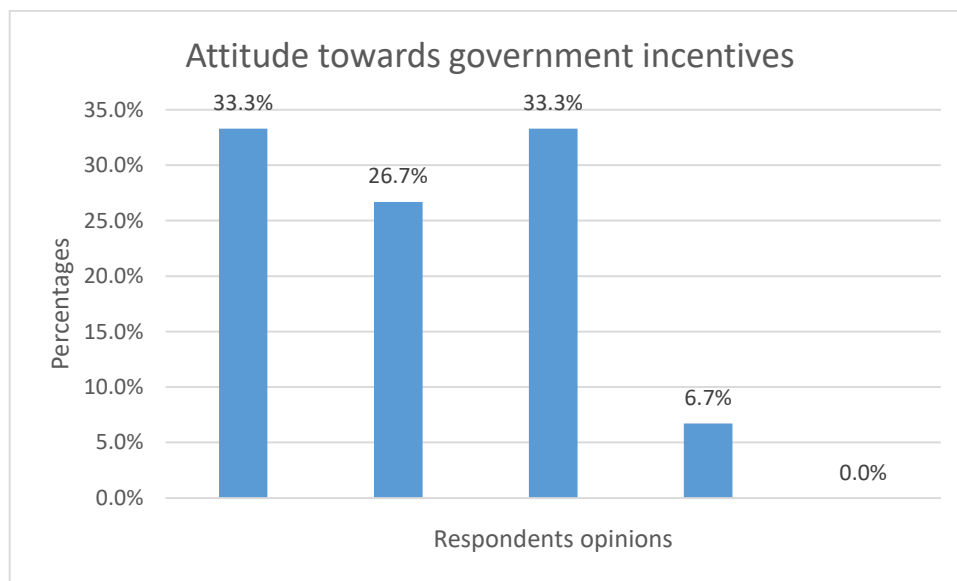
Table 4.21 and Figure 4.21 shows the respondent's opinions about the safety of electric vehicles. 78.3% of the respondents have a positive attitude about the safety of EV, 13.4% have negative responses while 8.3% have neutral opinions.

4.22 Attitude towards government incentives

Table 4.22

Options	Respondents	Percentage
Agree	20	33.3%
Strongly agree	16	26.7%
Neutral	20	33.3%
Disagree	4	6.7%
Strongly disagree	0	0%
Total	60	100%

Figure 4.22



Interpretation

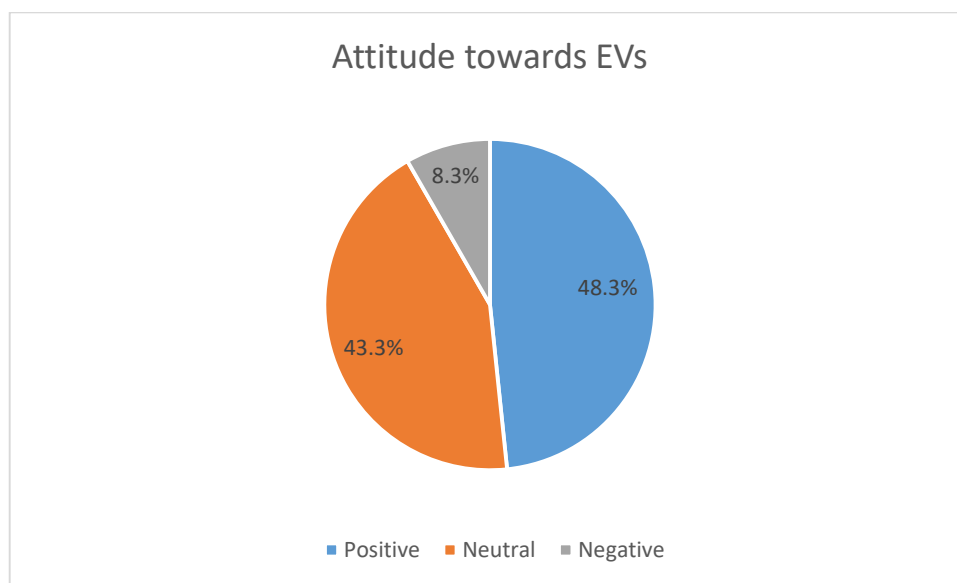
Out of 60 respondents, 33.3% of the respondents have agreed that the government should give incentives for buying EVs while other 33.3% of the respondents have neutral opinions. 26.7% of the respondents strongly agreed with that statement and the remaining 6.7% of the respondents disagreed that the government should give incentives towards EVs.

4.23 Attitude towards Electric vehicles

Table 4.23

Options	Responses	Percentage
Positive	29	48.3%
Neutral	26	43.3%
Negative	5	8.4%
Total	60	100%

Figure 4.23



Interpretation

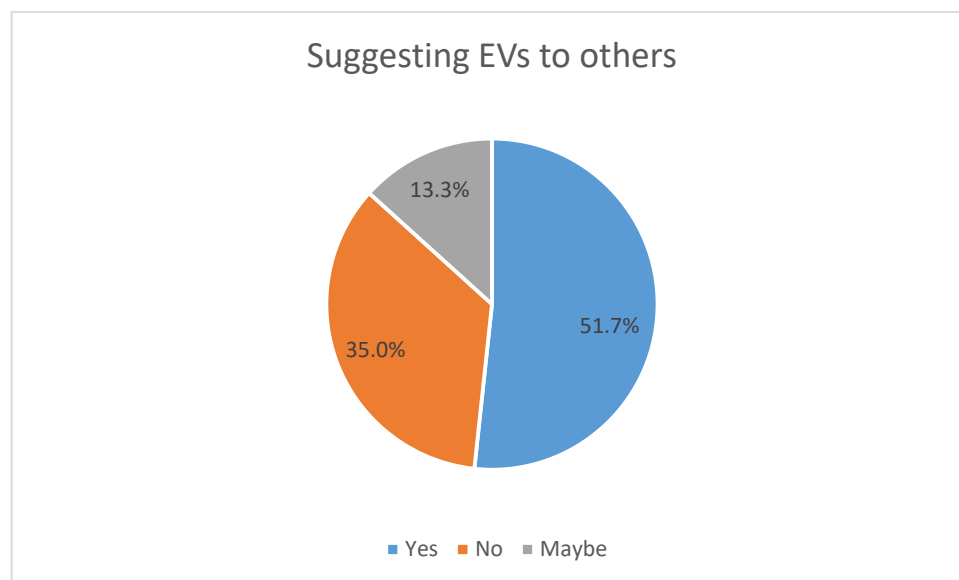
The majority of the respondents (48.3%) have positive attitude towards electric vehicles , 43.3% of the respondents have a neutral opinion and the remaining 8.4% have negative opinion about EVs.

4.24 Suggesting electric vehicles to others

Table 4.24

Options	Responses	Percentages
Yes	31	51.7%
No	8	35%
Maybe	21	13.3%
Total	60	100%

Figure 4.24



Interpretation

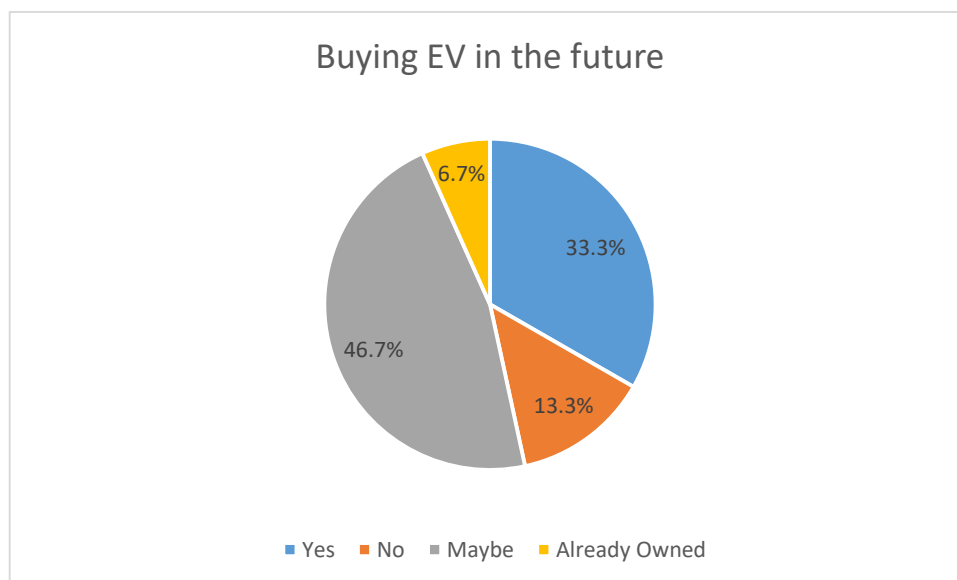
The majority of the respondents (51.7%) will suggest electric vehicles to others and 13.3% of the respondents may have a possibility that they will suggest electric vehicles to others while 35% of the respondents will not suggest EVs to others.

4.25 Buying EV in the future

Table 4.25

Options	Responses	Percentage
Yes	20	33.3%
No	8	13.3%
Maybe	28	46.7%
Already Owned	4	6.7%
Total	60	100%

Figure 4.25



Interpretation

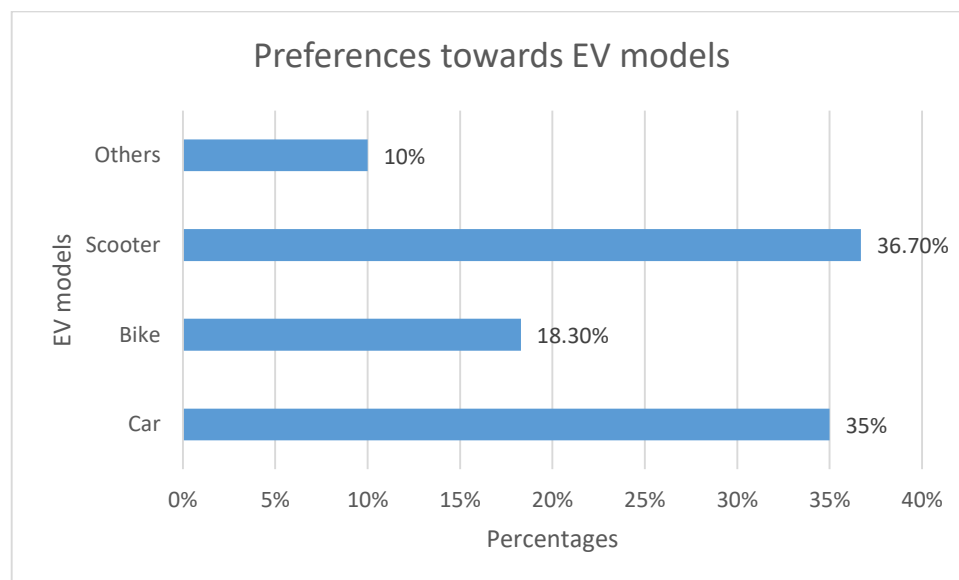
Majority of the respondents (46.7%) have a possibility that they will buy an electric vehicle in the future. 33.3% of the respondents will buy an electric vehicle and 13.3% of the respondents will not buy electric vehicles while 6.7% of the respondents already owns an EV.

4.26 Preference towards EV model

Table 4.26

Preferences	Responses	Percentages
Car	21	35%
Bike	11	18.3%
Scooter	22	36.7%
Others	6	10%
Total	60	100%

Figure 4.26



Interpretation

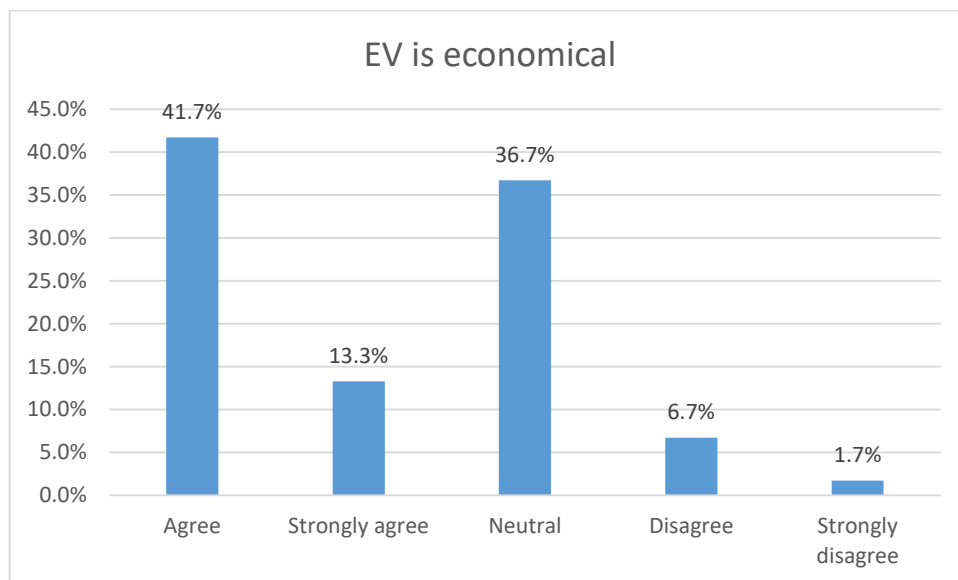
36.7% of the respondents prefer to use electric scooters , 35% of the respondents prefer to use cars if its electric model is available , 18.3% of the respondents prefers to use electric bikes while only 10% prefer to use others.

4.27 Electric vehicles are economical as compared to petrol/diesel vehicles

Table 4.27

Options	Responses	Percentages
Agree	25	41.7%
Strongly agree	8	13.3%
Neutral	22	36.7%
Disagree	4	6.7%
Strongly disagree	1	1.6%
Total	60	100%

Figure 4.27



Interpretation

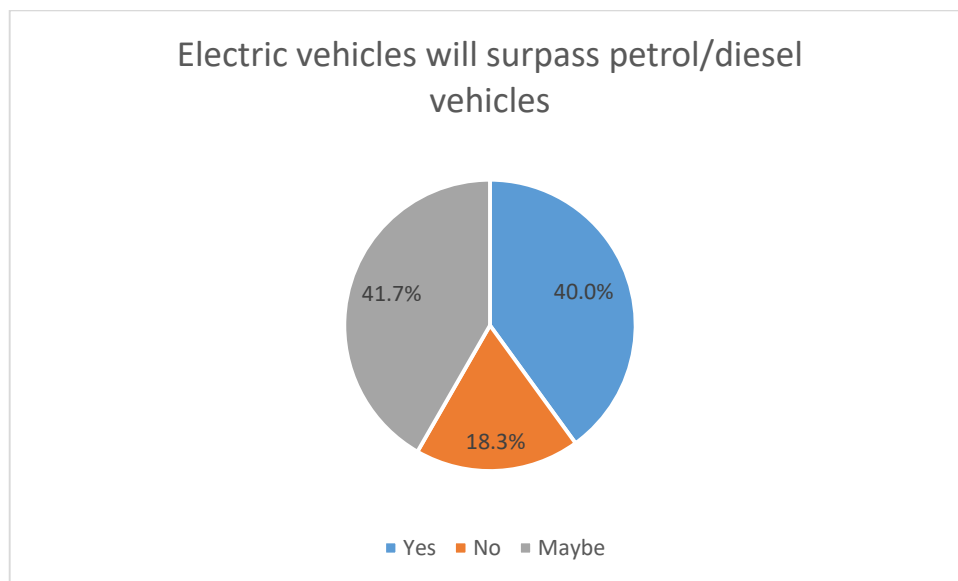
Majority of the respondents have agreed that EVs are economical as compared to other vehicles, 13.3% of the respondents have strongly agreed with that statement, 36.7% of the respondents have neutral opinion while 6.7% of the respondents have disagreed that EVs are economical and only 1.6% of the respondent have strongly disagreed with that statement.

4.28 Electric vehicles will surpass petrol or diesel vehicles

Table 4.28

Options	Response	Percentage
Yes	24	40%
No	11	18.3%
Maybe	25	41.7%
Total	60	100%

Figure 4.28



Interpretation

Out of 60 respondents, 40% of the respondents have agreed that electric vehicles will surpass petrol/diesel vehicles in the future, 41.7% of the respondents have agreed that there is a possibility that electric vehicles will surpass petrol/diesel vehicles in the future and 18.3% of the respondents are of the opinion that electric vehicles will not surpass petrol/diesel vehicles in the future.

CHAPTER-5

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS

1. According to the survey we have come to know that the majority of the data was collected from the age group of 18-20.
2. Majority of the respondents were graduates.
3. Majority of the respondents have no occupation as they were undergraduates.
4. It is found that the majority of respondents' monthly income is less than Rs.5000
5. Majority of the respondents' vehicle is car.
6. Most of the respondents' use petrol as fuel for their vehicles.
7. Most of the respondents' own vehicles from companies other than Ola , Tata, and Ather.
8. While examining the preference for choosing the company, 36.7% of the respondents choose the 'others' option.
9. In the case of sources of awareness about electric vehicles 41.7% of respondents choose other than TV, newspapers, and magazine.
10. Majority of respondents' are of the opinion that EV's are useful to youth
11. Majority have a neutral opinion with regards to whether the expenses for the youth covers the cost of EV.
12. Around 68% of respondents' agree that EV's can reduce pollution to a certain extent.
13. Majority of the respondents have neutral opinion about electric vehicles being expensive.
14. Most of the respondents choose EV because there is no usage of fuels.
15. Most of respondents' are not ready to buy EV because Ev's are not fully developed.
16. Majority agree to the opinion that the initial cost for EV's are high.
17. Majority of the respondents' agreed that the cost of battery replacement for EV's are high.

18. The less number of charging stations are less is a major problem for many respondents.
19. Majority of the respondents agreed that the performance for EV's are high.
20. Majority of the respondents need fast charging option for EV's.
21. Majority have a strong opinion on the safety of electric vehicles.
22. Majority of the respondents agree that government should provide incentives to buy Electric vehicles.
23. Majority of the respondents have a positive attitude towards electric vehicles.
24. Majority of the respondents are willing to recommend electric vehicles to others.
25. Majority of the respondents maybe buying an electric vehicle in future.
26. Majority of the respondents prefer scooter as electric vehicle.
27. Most of the respondents agree that electric vehicles are economical as compared to petrol/diesel vehicles.
28. Most of the respondents are of the opinion that electric vehicles will surpass petrol or diesel vehicles.

SUGGESTIONS

- The government should provide incentives and subsidies for buying electric vehicles.
- Reducing tax prices can attract customers to a certain extent for purchasing electric vehicles.
- The government should provide more fast charging portals in and around the country in order to promote usage of Electric Vehicles.
- Government should initiate awareness programs and campaigns about the safety of Electric vehicles.
- For reducing environmental pollution, reducing greenhouse gases etc... People should give more importance to electric vehicles.
- Promoting electric vehicles also help the government to say goodbye to crude oil and its high price.

CONCLUSION

There is a need for energy transition in automobiles in India due to the depletion of fossil resources and the ongoing increase in fuel prices. The government is pushing EVs and providing subsidies for their purchase as a proactive measure to reduce pollution levels. Government has loosened FDI regulations in order to increase output. In India, several new brands are introducing electric vehicles. Building the necessary infrastructure and fostering a supportive atmosphere for EVs should be a joint effort between the government and industry. The respondents are prepared to switch from conventional to eco-friendly vehicles since they are conscious of the state of the world's climate. Cost must be taken into consideration while buying an EV.

If the necessary infrastructure is in place, respondents are willing to consider EVs as a potential future purchase. The initial purchase price, a dearth of charging stations, and the length of time needed to recharge the battery are impeding efforts to increase consumer confidence.

WEBSITES

www.jetir.org/papers/JETIR2108555.pdf

<https://www.cardekho.com/electric-cars>

<https://e-amrit.niti.gov.in/types-of-electric-vehicles>

<https://evreporter.com/electric-vehicles-101>

<https://www.smev.in/ev-industry>

https://en.wikipedia.org/wiki/Electric_vehicle

NEWSPAPERS

- The Hindu
- The Indian Express
- The Times Of India
- The Economic Times

QUESTIONNAIRE

1. Name:

2. Age:

- i. 18 – 20
- ii. 21 – 25
- iii. 25 and above

3. Level of education:

- i. High School
- ii. Graduate
- iii. Postgraduate

4. Occupation

- i. Public Sector
- ii. Private Sector
- iii. Business

5. Monthly Income

- i. 5000 – 10,000
- ii. 10,000 – 50,000
- iii. More than 50,000

6. Do you have any of the following vehicles?

- i. Scooter
- ii. Bike
- iii. Car
- iv. All of them above

7. Which Fuel is used in your vehicle?

- i. Petrol
- ii. Diesel
- iii. CNG
- iv. Others

8. Which company vehicle are you using?

- i. Ola
- ii. TATA
- iii. Ather
- iv. Others

9. Why do you prefer that company?

- i. Cost Efficient
- ii. Eco-friendly
- iii. Safe
- iv. Others

10. How did you come to know about Electric Vehicles?

- i. Television
- ii. Newspaper
- iii. Magazine
- iv. Others

11. Is Electric Vehicle useful to youth?

- i. Yes
- ii. No

12. Do the expenses for the youth cover the cost of EVs?

- i. Agree
- ii. Neutral
- iii. Disagree

13. Whether Electric vehicles can reduce pollution to a certain extent?

- i. Agree
- ii. Neutral
- iii. Disagree

14. Are Electric vehicles costly?

- i. Agree
- ii. Neutral
- iii. Disagree

15. What factors encourage you to consider buying EV?

- i. Eco-friendly
- ii. No usage of fuels

iii. Others

16. What factors discourage you to consider buying EV?

- i. Ev's are not fully developed
- ii. Poor charging infrastructure
- iii. Unawareness of maintenance
- iv. Others

17. Is an Electric vehicle's initial cost high?

- i. Agree
- ii. Neutral
- iii. Disagree

18. Whether the cost of battery replacement for EVs are high?

- i. Yes
- ii. Maybe
- iii. No

19. Is the number of charging stations for electric vehicles less?

- i. Agree
- ii. Neutral
- iii. Disagree

20. Whether performance of Electric vehicles high?

- i. Agree
- ii. Neutral
- iii. Disagree

21. Do Electric Vehicles need fast charging options?

- i. Agree
- ii. Neutral
- iii. Disagree

22. How safe is EV?

- i. Agree
- ii. Neutral

iii. Disagree

23. Government should provide incentives for Electric vehicles.

- i. Agree
- ii. Neutral
- iii. Disagree

24. What is your attitude toward Electric Vehicles?

- i. Positive
- ii. Neutral
- iii. Negative

25. . Do you suggest Electric Vehicles to others?

- i. Yes
- ii. No

26. Are you planning to buy an Electric Vehicle in the future?

- i. Yes
- ii. Maybe
- iii. Already owned
- iv. No

27. Which of the following would you prefer the most in Electric Vehicles?

- i. Car
- ii. Bike
- iii. Scooter
- iv. Others

28. Is Electric vehicles economical as compared to petrol/diesel vehicles?

- i. Agree
- ii. Strongly Agree
- iii. Neutral
- iv. Disagree
- v. Strongly Disagree

29. Do you think Electric Vehicles will surpass petrol or diesel vehicles?

- i. Yes

- ii. No
- iii. Maybe