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A Project Report on

Consumer Perception Towards Electric Vehicles

Submitted By:

Dipanjan Acharya (2K19/UMBA/12)

Shubham Tyagi (2K19/UMBA/21)

Suhans Bansal (2K19/UMBA/22)

Under the Guidance of

Dr. Jagvinder Singh

Assistant Professor (USME, DTU)

In Partial Fulfillment of the Requirements for the Degree of

Master of Business Administration (MBA)

University School of Management and Entrepreneurship

Delhi Technological University

Vivek Vihar Phase 2, Block E, Delhi-110095

May 2021

CERTIFICATE

This is to certify that the Major Research Project Report titled "**Consumer Perception towards Electric Vehicles**" is the bonafide work of "**Dipanjan Acharya** (2K19/UMBA/12), **Shubham Tyagi** (2K19/UMBA/21) and **Suhans Bansal** (2K19/UMBA/22)" batch of MBA 2019-2021 and submitted to University School of Management and Entrepreneurship (USME), East Delhi Campus, Delhi Technological University (DTU), Delhi in partial fulfillment of the requirement for the award of the degree of **Masters of Business Administration.** The project is carried out under my supervision and to the best of my knowledge and the piece of work is original and the student has submitted no part of this project to any other Institute/University earlier.

Signature of Guide

Dr. Jagvinder Singh
(Assistant Professor)

Signature of HOD (USME)

Prof. Amit Mookerjee

Seal of HOD

Date:
Place: Delhi

DECLARATION

We hereby declare that the Major Research Project Report titled "**Consumer Perception towards Electric Vehicles**" submitted by us to the University School of Management and Entrepreneurship (USME), East Delhi Campus, Delhi Technological University (DTU), Delhi in partial fulfillment of the requirement for the award of the degree of Master in Business Administration (MBA) is a record of bonafide project work carried out by us under the guidance of Asst. Prof. Dr. Jagvinder Singh and mentor Mr. Shubham Singhania (PhD Scholar, USME, DTU). The information and data given in the report is authentic to the best of our knowledge. We have put in efforts to complete this project successfully.

We were in regular contact with our project guide and mentor and have discussed contents of Project.

We further declare that the work reported is not being submitted to any other University for award of any other Degree, Diploma and Fellowship program.

Signature of the Candidate	Signature of the Candidate	Signature of the Candidate
Name: **Dipanjan Acharya**	Name: **Shubham Tyagi**	Name: **Suhans Bansal**
Roll No.: **2K19/UMBA/12**	Roll No.: **2K19/UMBA/21**	Roll No.: **2K19/UMBA/22**

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Our humble acknowledgment also goes to entire USME, DTU faculty members and our families for great support and care throughout the 2 years of MBA course and for motivating us to be on track.

Sincerely,

Dipanjan Acharya

Shubham Tyagi

Suhans Bansal

Place: Delhi

Date:

EXECUTIVE SUMMARY

The auto business at the worldwide level goes to travel to a 360-degree shift from Internal Combustion (IC) motorized vehicles to zero-contamination outflow vehicles thanks to severe arrangements and guidelines by Governments overall on account of decaying air quality and ozone-depleting substance discharges (Nimesh, Sharma, Reddy, Goswami, 2020). India is proactively looking for financially sound answers for the most critical issue of very poor air quality in many urban areas even though India is attempting to minimize its high reliance on oil imports. The state has currently reported an intensive shift to an all electricity worked fleet by 2030, which needs consideration and activity via car producers, sellers (counting battery makers), vendors, and utility players on a close-by and worldwide level.

This report hopes to reply from a scientist's perspective by giving a profound jump into the investigation of consumers' perception towards electric vehicles. It additionally investigates the fate of electrical vehicle appropriation across different numerous portions in India. It is verified that if consumers are happy with their experience of the product, they tend to market it to other people. Informal exchange (word of mouth) and consumer loyalty assume a significant part of chosen sector's insight about an item.

Because of the absence of rechargeability of the batteries of the electrical vehicles in the 60s, the innovative work and also the focus of the auto industry throughout the world moved towards vehicles running on petroleum products. In recent few years, electric vehicles acquired an excellent deal of fascination over conventional vehicles controlled by petroleum products as seen by Tesla Roadster maneuvering into the Indian Electric Vehicle market. Thanks to expanded mindfulness among individuals identifying with nature's contamination caused due to the conventional vehicles, a shift towards Electric Vehicles will be seen, however slowly. Numerous organizations like General Motors (GM), Tata Motors, Honda, Tesla, and Toyota have begun large-scale manufacturing of electrical and hybrid vehicles to require out the problems connected with completely fueled gas motorized vehicles.

A delayed start within the Electric Vehicle (EV) selection since the last recent two years has shown a surprising increment. A massive change has been observed in the Electric Vehicle (EV) Industry throughout the planet with various nations having to show intent to have maximum electric vehicles, yet no significant change had been found within the Indian EV

market. One amongst the many reasons behind this can be an absence of a framework for electric vehicles in India.

The results revealed a variety of research approaches that have been used to investigate find the different factors which persuade consumers while purchasing an electric vehicle. The reported approaches include factor analysis through principal component analysis from the survey, graphical representations and providing suggestions as per our findings from the analysis.

Contents

1. INTRODUCTION

The Indian auto industry is one of the largest developing business sectors in the world and donates exceptionally to the nation's manufacturing offices (Arokiaraj David, 2014). Not just this, the auto business in India is additionally expected to pull up the portion of assembling in India's GDP to 25% by 2022 from 15% right now, with the creation of Electric Vehicles being new all the rage (P. Sankar, 2011).

However, Indian Electric Vehicle (EV) industry has been recently introduced when contrasted with the other global markets like the American, Chinese, and European (Hokyung Shim, 2019). In any case, a face change is certainly expected for India's Electric Vehicle (EV) industry with significant push given by the government (Neel Kamal, Bineeta Sinha, 2018, Olabode Agunbiade, Peter Siyan, 2020).

India is on of the (second) most populated countries on the planet having a count of 1.33 billion people and its population is increasing at the pace of 1.1% year on year (Aaron O'Neill, 2021). Going on like this, it is relied upon to turn into the country with the biggest populace on the planet in the following 20 years (Anna Malova, 2020). Moreover, the appearance of industrialization and commercialization has prodded work openings and brought about spreading urbanization. With this fast urbanization, India is relied upon to see 500 million individuals living in its urban communities by 2030 (Yuanqing Wang, Liu Yang, Sun Sheng Han, Chao Li, TV Ramachandra, 2017). This, combined with current and projected monetary patterns, is probably going to prompt rising livelihoods in Indian families, subsequently increment the demand for versatility. The car business in India is the world's fourth-biggest and is required to turn into the third biggest by 2021 (Yuanqing Wang, Liu Yang, Sun Sheng Han, Chao Li, TV Ramachandra, 2017, Kathrin Dudenhöffer, Rahul Arora, Alizée Diverrez, Axel Enslen, Patrick Jochem, 2014)

The industry represents 7.1% of India's Gross Domestic Product (GDP) and the Automotive Mission Plan 2016-2026 of the Government of India means to raise this to 12% (P. Sankaran, Dr C. Gounasegaran, 2011). The Indian car industry (counting segment fabricating) is required to develop at an accumulated yearly development pace of 5.9% and arrive at INR 16.16-18.18 trillion (US$251.4-282.8 billion) by 2026, consequently turning into the quickest developing industry in the country (Sajjad Ahmad Parry, A.M. Kadakol, 2016).

As per the National Electric Mobility Mission Plan (NEMMP) 2020 report, the Indian car market is governed by bikes, which represent 75% of the total number of vehicles sold in the country (Vivek Ogra, 2018). And the passenger vehicle segment is overwhelmed by the little vehicle segment and there is an improved probability for numbers to go up essentially by 2030. This data has been supported by the Society of Indian Automobile Manufacturers (SIAM) report (Vivek Ogra, 2018).

The NEMMP 2020 (Vivek Ogra, 2018) was announced by the Central Government in the year of 2013 to help assembling of Hybrid and Electric Vehicles (H&EV) in India and means to accomplish the creation of 7 million electric vehicles by 2020 (Vivek Ogra, 2018). This activity has been supplemented by the Central Government creating demand-side motivations through its Faster Adoption & Manufacturing of Hybrid and Electric Vehicles in India (FAME) scheme. The private auto players have adapted to situation and also have investing resources into R & D offices and establishing extra assembling units for the Electric Vehicles (Vivek Ogra, 2018). And with the Government choosing to subsidize up to 60% of R&D costs for the development of native ease electric innovation, worldwide auto players are putting intensely in R&D in electric vehicle advances in India (Prashant Salwan, 2011).

Recent Trends

With India at the core of a change and along with various components adding up to this, it presents the ideal opportunities for a few insights that will give India a chance to look for creative arrangements, accomplish huge development, as well as construct more grounded networks (Vivek Ogra, 2018). Enormous organizations are helping the Government to tackle complicated changes driven by 5 megatrends, involving quick urbanization, changing in worldwide monetary force, environmental change, shortage of assets, segment & sociological change, finally innovative leap forwards. The before said patterns are upsetting the economy, industry, and society in general (Vivek Ogra, 2018). They are relied upon to have a significant effect on the worldwide financial and business landscape, and no general public, association, or individual will be excluded from the impact of these megatrends (Vivek Ogra, 2018). Accordingly, it is significant for us to understand how to react and adjust to the progressions they will achieve (P. Sankaran, Dr C. Gounasegaran, 2011).

Source: Authors' Creation

2. Electric Vehicle (EV) INDUSTRY IN INDIA

While numerous nations have included Electric Vehicles (EVs) as a component of transportation strategy, their reactions have shifted by their phase of financial development, energy asset enrichments, mechanical capacities, and political prioritization of reactions to environmental change. In India, a specific situation that is helpful for a reasonable portability worldview has set out freedom for speed up the reception of Electric Vehicles (EVs) over Internal Combustion Engine (ICE) vehicles (David Roszczypala, Christophe Batard, Frédéric Poitiers, Nicolas Ginot, 2020). These reasons include (i) relatively plenty of consumable sustainable energy resources, (ii) a high accessibility of trained labour & innovation in assembling and Information and Technological programming, (iii) a foundation and buyer progress that bears the cost of freedoms to apply innovations to jump phases of development and (iv) a widespread ethos that acknowledges, advances allocation of resources and assets for the general normal great.

The above-mentioned conditions force India to seek after an Electric Vehicle (EV) strategy that deliberately guarantees that Indian Electric Vehicle (EV) program stays up at a worldwide scale while enormous countries appear to make huge strides on moving towards electric vehicles. India's development possibilities make the potential for developing authority in Electric Vehicle (EV) in specific segments. The approach will support away what begins with India-explicit qualities and activities for its auto-sector, working towards worldwide relevance and applications (Yue Cao, Omprakash Kaiwartya, Yuan Zhuang, Naveed Ahmad, Yan Sun, 2019). The vital goals of the Electric Vehicle (EV) strategy are (i) reduce essential oil utilization in transportation, (ii) facilitate consumer selection of electric vehicle and clean energy vehicles, (iii) inspire cutting-edge innovation in India by acquiring, alteration, and innovative work, (iv) enhance movement of common man (v) create an Electric Vehicle (EV) producing limit that is of worldwide scale and intensity, (vi) and facilitate work development in a sunrise area (niti.gov.in).

According to Autopunditz, electric 2-Wheelers add up to 97% of electric vehicle deals in Indian market (Team Auto Punditz, 2020). Electric Vehicle (EV) is in extremely incipient phase in Indian marketplace, also the public authority is gradually centering toward upgrading the Electric Vehicle infiltration in the subcontinent (Team Auto Punditz, 2020). We featured how the Indian government has revised the GST on Electric Vehicles from 12% to 5% in 2019 (Team Auto Punditz, 2020). However; because of the absence of sufficient

electric foundation, the Electric Vehicle (EV) deals have not been noteworthy (Team Auto Punditz, 2020). Around 1.74 cr units of 2 Wheelers (gas-fueled) were marketed in India for Fiscal Year (FY) 2019-20 (Team Auto Punditz, 2020). However, just 1.52 Lakhs units of Electric 2 Wheelers were sold at a similar moment (K. Dudenhöffer, R. Arora, A. Diverrez, A. Ensslen, P. Jochem, 2014). We trust the boost from the public authority and additionally leap forward in fuel-cell innovation will help out bring down the expenses of Electric Vehicles (EVs) even further and hence increment its volumes (Team Auto Punditz, 2020).

Electric Vehicle Sales India			
Segment	**FY 2019-20**	**FY 2018-19**	**FY20 v/s FY19**
Two Wheelers	1,52,000	1,26,000	21%
Passenger Vehicles	3,400	3,600	-6%
Buses	600	400	50%
TOTAL	**1,56,000**	**1,30,000**	**20%**

Source: SMEV, Autopundtiz

The Electric Cars Sales really tumbled somewhere around 6%. Just 3,400 Electric Passenger vehicles were sold in the Fiscal Year (FY) 20 v/s 3,600 units in the Fiscal Year (FY) 19 (Team Auto Punditz, 2020). Electric Buses saw a decent leap of 50% Year on Year (YoY) and sold around 600 units in last year. This was additionally because of the push from the government to increase electric transports in their fleet (Team Auto Punditz, 2020).

2.1 Drivers for Growth of Electric Vehicles in India

Policy Objectives

Master plans for most urban communities in India target 60-80 per cent public vehicle ridership by 2025-2030 (Center for Science and Environment).

Market size

India is the second biggest bike market (80 million in the year 2010) in the world following China (k-learn.adb.org) and two-wheelers continue the lead choice for most of the population in 2035 (k-learn.adb.org, UNEP, DTU, and IIM-A).

Ecological

13 out of 20 urban communities on this planet along with the most noteworthy air-contamination are from India. Low level of carbon situation along with 'most elevated' Electric Vehicle (EV) infiltration shows a 50% drop in Particulate Matter 2.5 by 2035 (k-learn.adb.org, UNEP, DTU, and IIM-A).

Partnered Openings

As the Indian Government is focusing on 100 Giga Watt of solar power by 2022, electric vehicles (EV) can enhance dependability as well as usage of inexhaustible sources acting as storage capacity (k-learn.adb.org).

2.2 Hinderances to Growth of Electric Vehicles (EV) in India

Firstly, **India lacks in Lithium-ion stores** that can help a huge local market for EV and non-availability of policies for encouraging the development of supply, assembling, as well as reusing of fuel cells. Secondly, **the country's energy blend** is overwhelmed via non-renewable energy sources – low carbon benefits need to be accounted for, the electricity supply is not accessible around all the cities, towns, and villages. Other various factors affecting are **safety insights of electric vehicles** and **high taxation and low costs of petroleum products** (k-learn.adb.org).

3. LITERATURE REVIEW

The auto industry, and the auto segments trade, is amongst one of the quickest developing industries of India (www.mdpi.com). An all-around improved transport network assumes crucial part in the growth of a nation, particularly in an emerging economy like India (www.mdpi.com). The auto industry is one of the vital supporters of the GDP due to its solid progress and connections with numerous central participants (www.globsyn.edu.in). The industry has been recognized as one amongst the facilitators of economic development in the country (Napier University on 2017-07-29).

Generally, petroleum fractions have been intimately associated with electric automobiles being fruitful just in a couple of specialty markets (niti.gov.in). However, throughout the past 10 years, an assortment of conditions has contrived to make an opportunity for the electric versatility to go into the mass market (niti.gov.in). Some of those factors include:

Climatical change: The possibility of a swift worldwide high temperature rise has made the requirement of a decrease in utilization of petroleum derivatives as well as related emanations. India is focused on reducing its GHG discharge concentration by a 33% to 35% per cent under 2005 standards by the year 2030 (niti.gov.in).

Innovations in renewable energy: Across the most recent decade, innovations in wind and sun-powered energy age innovations have radically diminished expense and created the chance for perfect, low-carbon levels, and economical lattices (niti.gov.in). India intends to add 175 Giga Watts of new and renewable energy limit by 2020 and to accomplish 40% of its energy age from non-renewable resources by that very year (niti.gov.in).

Swift development: Economic growth, particularly in rising economies, is generating an influx of development as rustic populaces shift (niti.gov.in) to metropolitan areas eyeing for work. Though urbanization is a substantial (UNUN on 2021-01-18) part of the interaction of monetary development, it likewise focuses on the energy and transportation foundation heading to contamination (Niti Ayogg). Aa per a new report by WHO, our nation is home to 14 out of 20 the most contaminated urban areas on the planet (Niti Ayogg). Electric vehicles (EVs) may enhance that situation by decreasing nearby groupings of poisons in urban communities (Niti Ayogg).

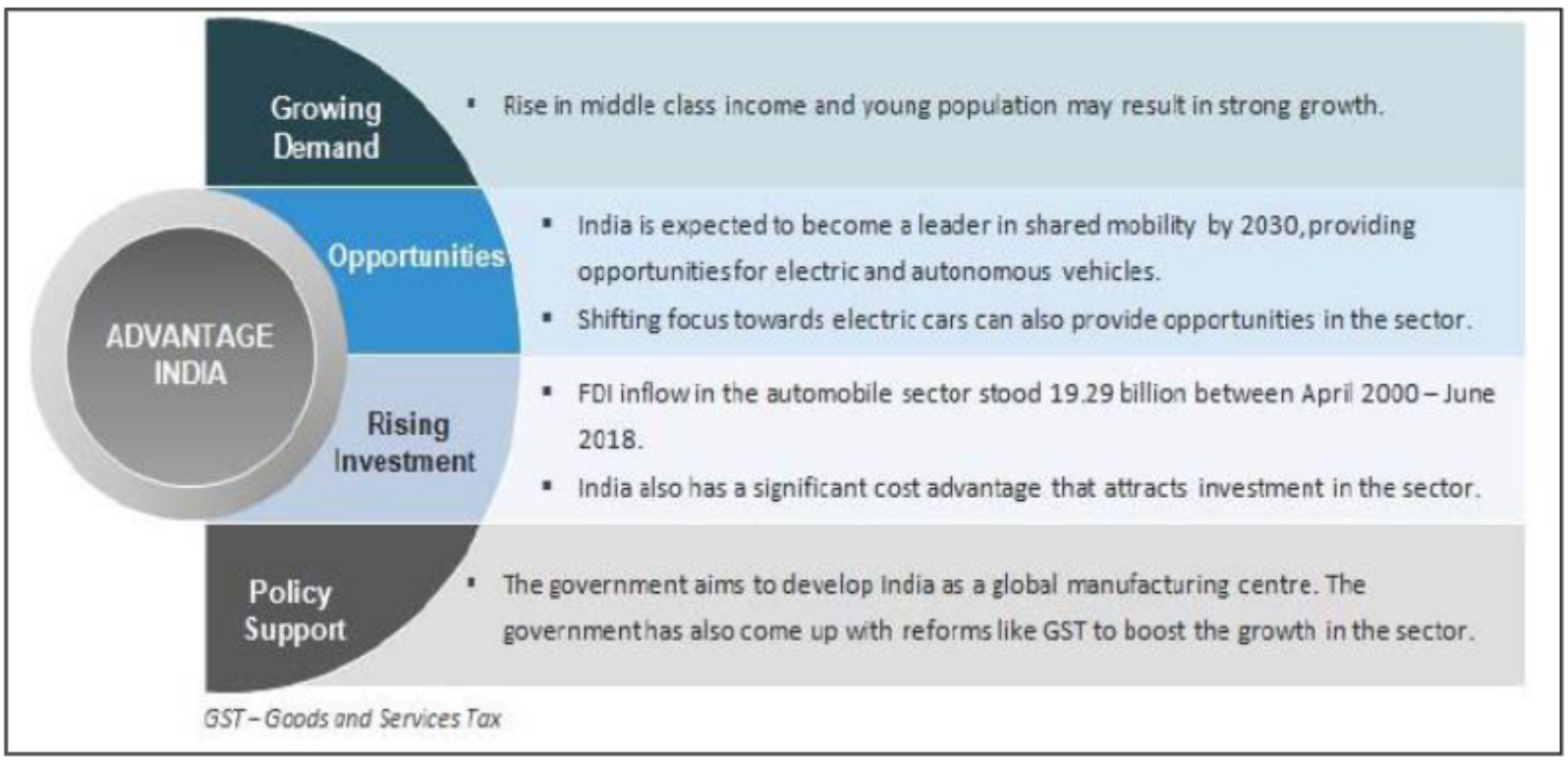
Data gain and evaluation: With the ascent of GPS-empowered cell phones and related space of versatility in applications, portability has gone through a computerized innovation (Niti Ayogg). For Electric Vehicles (EVs) dependent on reduced movable expenditures to balance

out moderately elevated static expenses, this enhanced use is a fundamental element of achieving absolute costs of proprietary compared with internal burning automobiles (UNUN on 2021-01-18).

Battery Chemistry: Innovations in battery have driven better energy intensities, faster charging, and reduced battery deformation due to charging. Combined along with development of motors with a higher power rating and unwavering quality, these enhancements in battery chemistry have reduced expenditures and enhanced the performance and ability of electric vehicles (UNUN on 2021-01-18).

Energy security: The petrol, diesel, and CNG anticipated to power an Internal Combustion Engine (ICE) centered portability structure involves a broad costly production system that is prone to disturbance from environment, global events, and various factors (UNUN on 2021-01-18). India requires to trade in oil to cover more than 80% of its energy needs. That percentage is set to grow as a rapidly urbanizing population demands further noteworthy intra-town and inter-town portability (UNUN on 2021-01-18).

3.1 Indian Automobile Industry at a Glance



Source: Indian Brand Equity [i] India Brand Equity– Automotive Sector- accessed Dec 1st, 2018

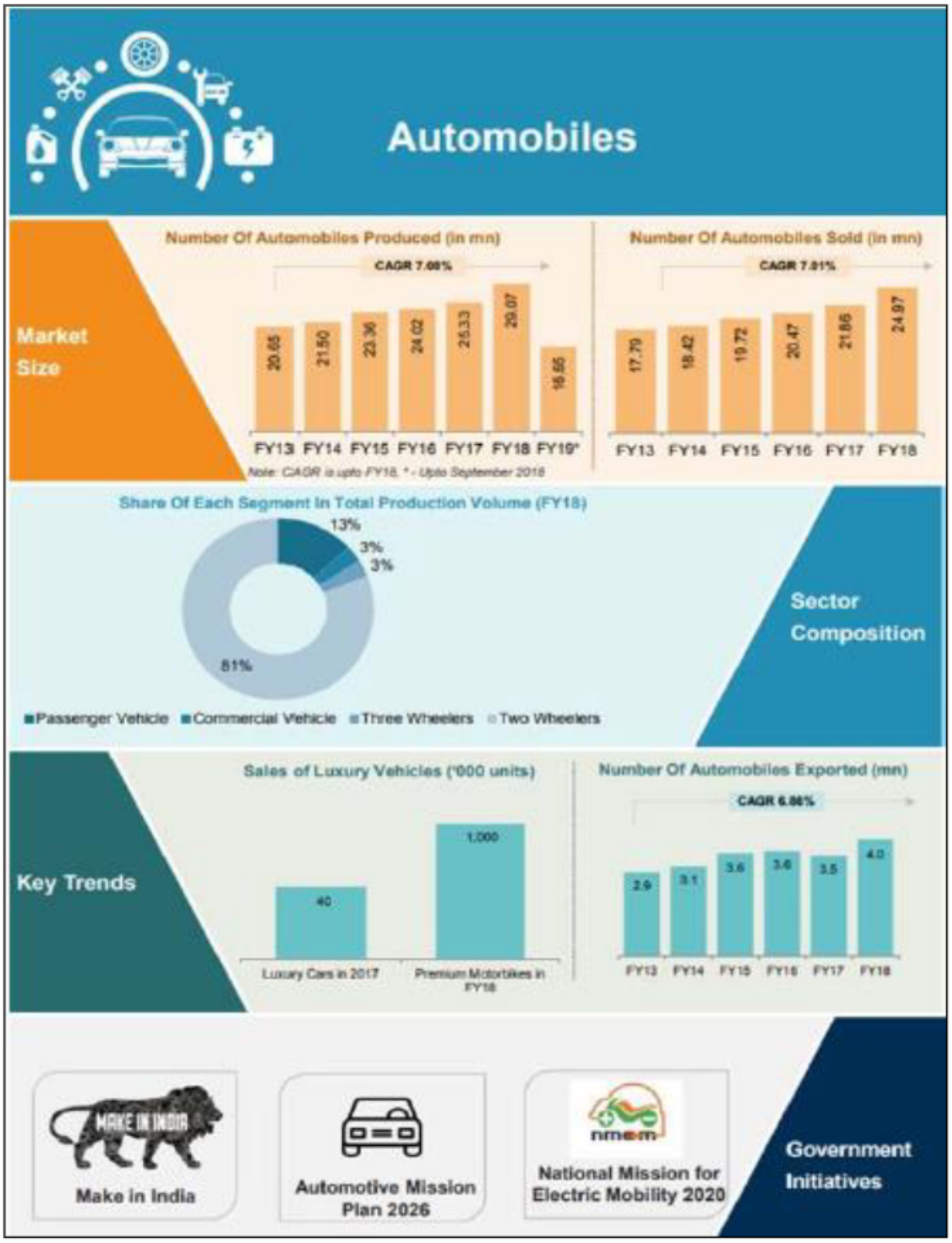


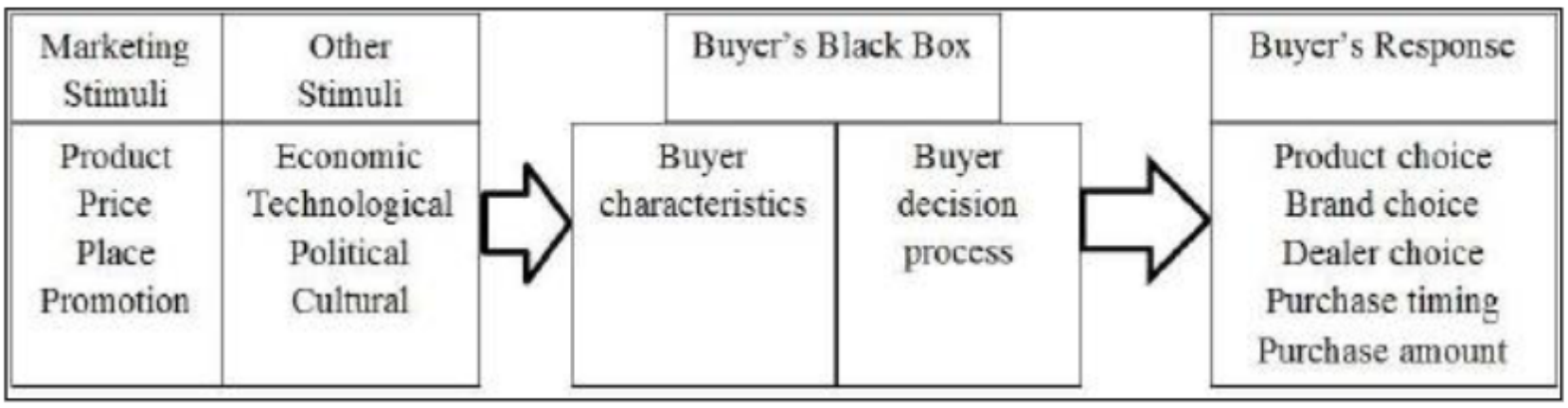
Figure: Automobile Industry at a Glance

3.2 Broad Classification of Consumer Behavior

Social Parameters	Economical Parameters	Political Parameters	Product & Technology Parameters	Demographic Parameters	Geographic Parameters	Psychographic Parameters
Road Infrastructure	Monthly Income	Government budget planning	Fuel Efficiency	Source of Income	Region	Activities
Road Safety	Disposable Income	Government Policies – such as vehicle Life (Max 15 years)	Exteriors – Overall look, color, shape, feature lines, head lamp & tail lamp	Gender	Size / Area	Interests
Lifestyle	Loan Interest	Government taxation & duty structure	Interiors such as Plush interiors, exotic colors, legroom, seat design, arm rest, music system	Height, Weight, Complexion	Population density	Opinions
Competition in the market (options available)	Easy Loan Availability		Vehicle performance- Pickup, mileage, acceleration, max speed, torque, Engine Capacity	Education	Climate	Attitudes
	Age		Driving Comfort	Occupation	Off-Road, On-road	Values
	Fuel Price		Product Quality – Durability, reliability,	Age		
	Product Price					

Source: Vikram Shende, IJSRP, Vol. 4, Is. 2, Feb. 2014 1

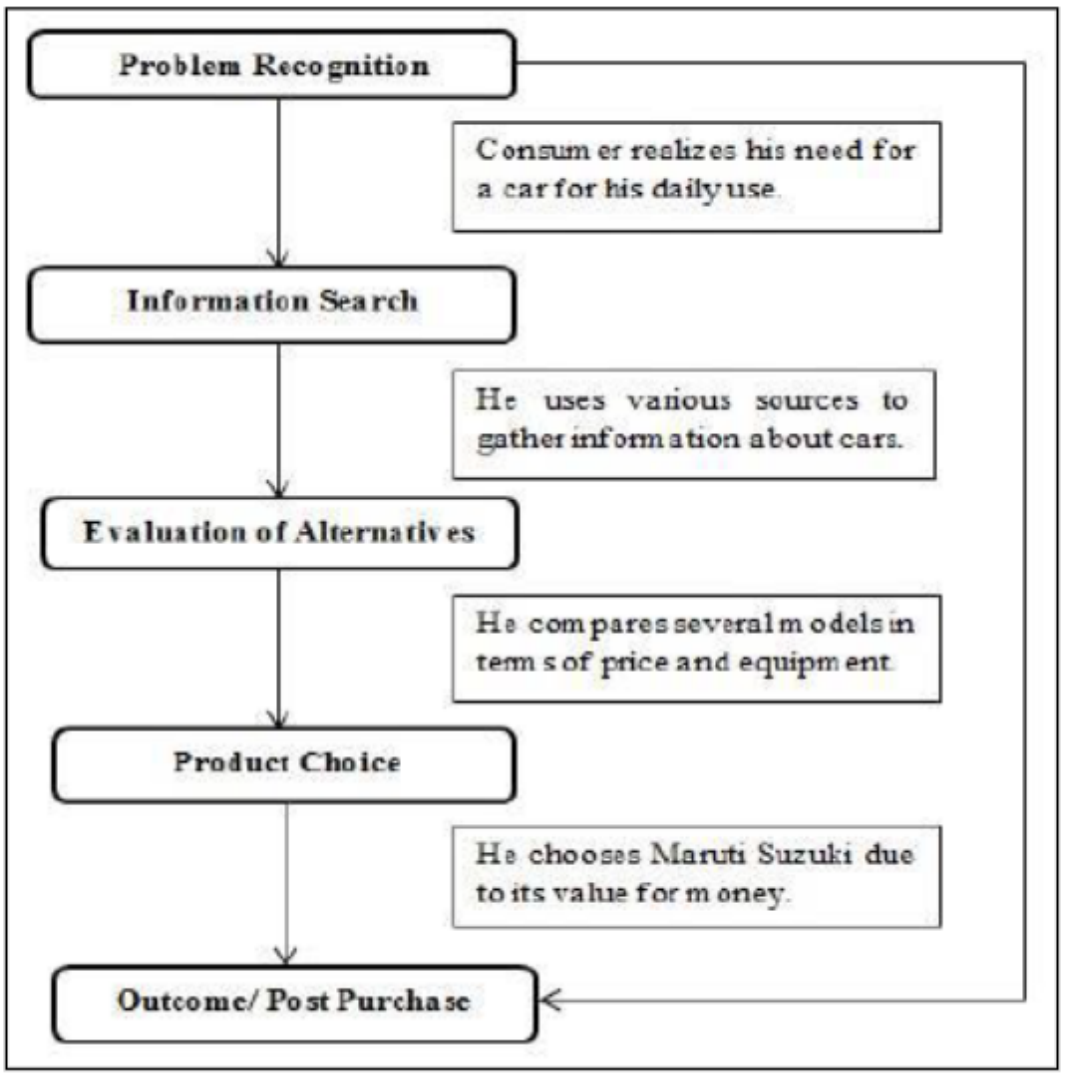
3.3 Kotler's Model of Buying Behavior



Source: Kotler, P. (2011). Marketing Management, 11th edition

3.4 Purchase Decisions Model by Solomon

The customer dynamic cycle is the interaction by which shoppers become mindful of and distinguish their requirements; gather information on the most proficient method to best tackle these necessities; evaluate possible accessible alternatives; settle on a purchasing choice and evaluate their buy. In request to understand the components influencing buy choice of the Indian and understand its conduct, we allude to the buy.



Source: Michael R. Solomon (2003). Consumer Behavior, 6th edition, pp 199-202

3.5 Reasons for the Change to Electric Vehicle

A huge amount of carmakers, for example, Toyota, Tata, and Lexus wandered into the Electric Vehicle domain (IJSR). Also, automakers like Tesla have established an incredible connection in the electric vehicle production by introducing models like Roadster and Model-X. Through and through, along with the appearance of Electric vehicles to the marketplace, the suitability of customary petrol-controlled automobiles are being referred to (IJSR). The natural and financial advantages of electric vehicles guarantee to be a vastly improved

decision. Moreover, electric vehicles utilize natural agreeable and cleaner wellsprings of energy reducing fossil fuel byproducts and completely electric vehicles guarantee no tailpipe emanation by any means.

According to an investigation by the Union of the Concerned Scientists, battery operated vehicles lessen ozone-depleting substances by over 25% contrasted with gasoline-controlled automobiles. Fueling these battery-operated vehicles with inexhaustible resources like hydroelectric, wind, and sun-based force and electric automobiles can reduce ozone harming substance emanation radically (IJSR). Technological development brings about an increase in the battery to 110% of effort by 2020-2025 and can bring about a cost decrease by 40 - 45% (IJSR). Battery Operated Automobiles offer a decrease in price in terms of better user experience and generally speaking upkeep cost of the vehicle. Additionally, costs of petrol are varying in India ever since the selection. Interestingly energy costs are constant when contrasted with oil. Thus, battery operated are a lot less expensive for shoppers and offer static expenses of driving (IJSR).

3.6 Creating Economically Feasible Electric Vehicles (EVs)

The limiting factor of batteries on driving reach might be tended to by developing an environment of quick charging or swapping of batteries (S.P. Jain Institute of Management and Research, Mumbai on 2021-03-26). This can be achieved by creating requisite infrastructure, conceivably even every kilometer, in thick territories. Subsequently, an important question arises concerning what kind of procedure can make Electric Vehicles (EVs), particularly little vehicles, economically feasible (Niti Ayog). The general technique should address two key factors affecting the expenses of Electric Vehicles (EVs): battery costs and any fiscal approaches that either increase the expenses of an Internal Combustion Engine (ICE) vehicle or decrease the expenses of an Electric Vehicle (EV) (Niti Ayog).

Battery Swapping Algorithm

We are resolved to form an algorithm of obtainment of charged batteries to our customers on nominal charges while taking piece more exorbitant costs with those customers who aren't using our vehicle however using our administrations of batteries. Under this algorithm, a client can look at an application about the accessibility of charged batteries to approach vendors which will have integration with our business.

Working over technical aspects like Battery Booster or Power Bank

It's additionally under pipeline to work over certain conceivable outcomes of one or the other designing or procuring such sort of technical aspects of power bank as compared to of power bank for little electronic devices (like Smartphone, blue-tooth and so on). This will hugely help in increasing the dependability over electric contraptions if all boundaries may satisfy the prerequisites (like cost, size etc.).

Installation of Recharging Stations

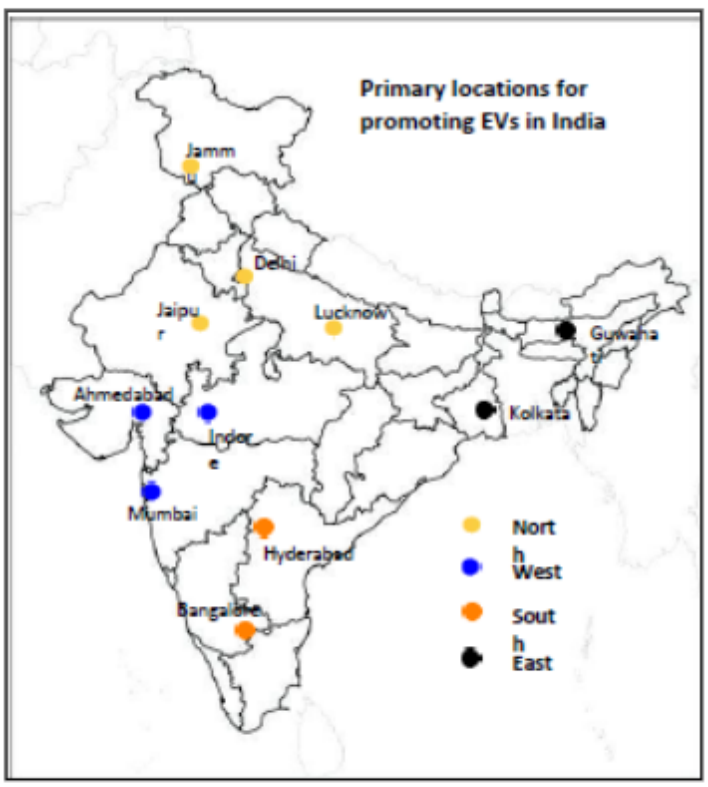
Without a doubt, it is the most dependable approach to increase the deals of electric vehicles as charging station is only same as petroleum stations so it's very sensible to say that more the charging stations more the chance of increase in deals.

Upsurge in Production of Batteries in our Country

As we realize that, approx. 40% of the costs of electric vehicles do change according to the expense of batteries in this way, an upsurge in the production of batteries will most likely assist in reducing the costs along with decreasing reliance on different nations for the buying of batteries.

Work is needed to be done on the Design aspect of Electric Vehicles

For increasing mileage of electric vehicles, different inputs are needed to care for the like mass of the body, friction between tire and street as it prompts an energy reduction, and so forth along these lines, our vision is to work over it too.



Source: Ministry of power

4. RESEARCH METHODOLOGY

This section intends to grasp the methodology for finding facts which builds a structure of assessment and reassessment of primary and secondary investigation. Methods and approaches applied throughout the initial study to reach findings, which are proscribed and result in a logical way to support the research study.

4.1 Objective of the Research

Primary Objective

To deduce consumer Perception and behavior towards electric vehicles in the Indian context.

Secondary Objective

To illustrate what are the different factors that affect the consumers to choose a vehicle or will convince a consumer to purchase an electrically operated vehicle in coming future.

To examine what are the different factors that limit the consumers to choose electric vehicles.

Motivation for the Study

With the headway in innovation and reform in present times, there is a tremendous boost of innovation in the global auto industry. The auto industry is presently transferring further on innovation and the greatest advancement is the initiation of electric vehicles (EV). Indian firms are concentrating on the development and growth of electric vehicle. The electric vehicle industry of India is in its nascent stage. Additionally, in this cut-throat era, there is incredible tension on these organizations to expand potency & adequacy. Consequently, by conducting this study, we will want to impart our findings to businesses which will help them understanding customer Perception which would additionally help them in designing their marketing strategies, promotion, and sales.

4.2 Research Process

A research method comprises of phases (VU) or runs that steer the research from its beginning into the concluding report, advocacies, & final measures (VU). The study procedure gives a precise, organized passageway to the investigation & guarantees every single characters of the research project are compatible with one another (VU).

The objective of this segment is to describe the research procedure and techniques that have been utilized for the success of the project objectives. This study includes exploratory research through the use of the "Survey Method". Primary Data and Secondary Data were used for analysis.

4.3 Primary Data

The quantitative research method that has been used in this research and the study is done by gathering primary data from the population (Nana Adu-Pipim Boaduo, 2011). A structured questionnaire was designed for respondents using the Google Form platform. The survey questionnaire was divided into several parts- Demographic Information, awareness about electric vehicles, different vehicle buying factors by consumers, etc. The primary data will be used to examine the factors and how these are relevant to the respondent.

Data Collection Instrument

For collecting the primary data "Questionnaire" is to be taken as the research instrument. The questionnaire has become more popular, comprehensive, and cost-effective method for collecting data. A questionnaire comprises of a set of questions posed to respondents for their answers. Questionnaires are containing both open-ended and close-ended questions. The report has been made using the Primary data that was collected via Google form.

4.4 Secondary Data

These are the research information that has already been produced. These can be company data, such as existing sales data etc. These data are sourced from books, journals, websites etc.

5. SAMPLING DESIGN

This includes the size of the sample and the technique that we used for selecting the different items for the sample. A sample design is a specific plan for achieving a sample from a given population. It refers to the procedure that the researcher adopts in selecting items for the sample (Authors' own thoughts).

Sample Design: Non-Probability Sampling

Sampling Techniques: Convenient Sampling and Snowball Sampling

Sampling Tool: Structured Question

Sampling Area and Unit of Study: Delhi/ NCR

5.1 Determination of the Sample Size

This section is to find the numbers samples on which the research study has to be conducted. We conducted a pilot survey for determining the sample size. For this, we chose the method of Sample Size Determination for Population Proportion.

From the questionnaire, we took the criteria whether a consumer is interested in Electric Vehicles or not. This was an important criterion since the entire research was dependent on it to find the consumer perception towards Electric Vehicle and that the expected results are observed.

Calculation

$$Z = \frac{(\bar{X} - \mu)}{\frac{\sigma}{\sqrt{n}}}$$

$$\sqrt{n} = \frac{Z_\alpha * \sigma}{\bar{X} - \mu}$$

$$n = \frac{[Z_\alpha * \sigma]^2}{[\bar{X} - \mu]^2}$$

$$n = (Z_\alpha{}^2 * \sigma^2) / (\bar{X} - \mu)^2$$

$$\boldsymbol{n = \frac{[\sigma_P * (1 - \sigma_P) * (Z_\alpha)^2]}{E^2}}$$

Where:

$Population\ size\ of\ Pilot\ Survey = 10$

$\boldsymbol{\sigma_P} = Proportion\ of\ Population\ who\ said\ Yes\ for\ the\ Question = 9/10$

$\boldsymbol{1 - \sigma_P} = Proportion\ of\ Population\ who\ said\ No\ for\ the\ Question = 1/10$

$\boldsymbol{Z_\alpha^2} = Level\ of\ Significance \rightarrow 90\%$

$\boldsymbol{\sigma^2} = \sigma_P * (1 - \sigma_P) = Standard\ deviation\ of\ Population\ Proportion$

$\boldsymbol{Z_\alpha} = Z\ score\ at\ 90\%\ confidence\ level$

$\boldsymbol{Z_{90}} = 1.645\ \ (From\ Z\ Score\ Table\ Refere\ Annexure)$

$\boldsymbol{E^2} = Sampling\ Error\ or\ Pricision\ Level$

Putting the values in the above equation,

$$n = \frac{(1.645^2 * 0.10 * 0.90)}{0.05^2}$$

$$\boldsymbol{n = 97.4169 \sim 97}$$

Thus, we took sample size as **97** for conducting our study.

6. DATA ANALYSIS AND INTERPRETATION

The questionnaire was devised to gather primary data to obtain new knowledge to determine consumer's perception towards the electric vehicle and the various factors which influence them to purchase a vehicle. The investigation of the data was done through holistic way using Factor Analysis and determining the various statistics associated with factor analysis like KMO and Bartlett's Test, Eigenvalues which displays the total variance explained by each factor etc. The extraction method is Principal Component Analysis (PCA) using IBM SPSS Statistics V.21 tool.

The data collected from the customer are transcript to the worksheet and analyzed by tools for visual representation like pie charts and graphs from which inferences were drawn. Established on the concepts of consumer behavior findings of the research were driven and recommendations are made.

6.1 Graphs

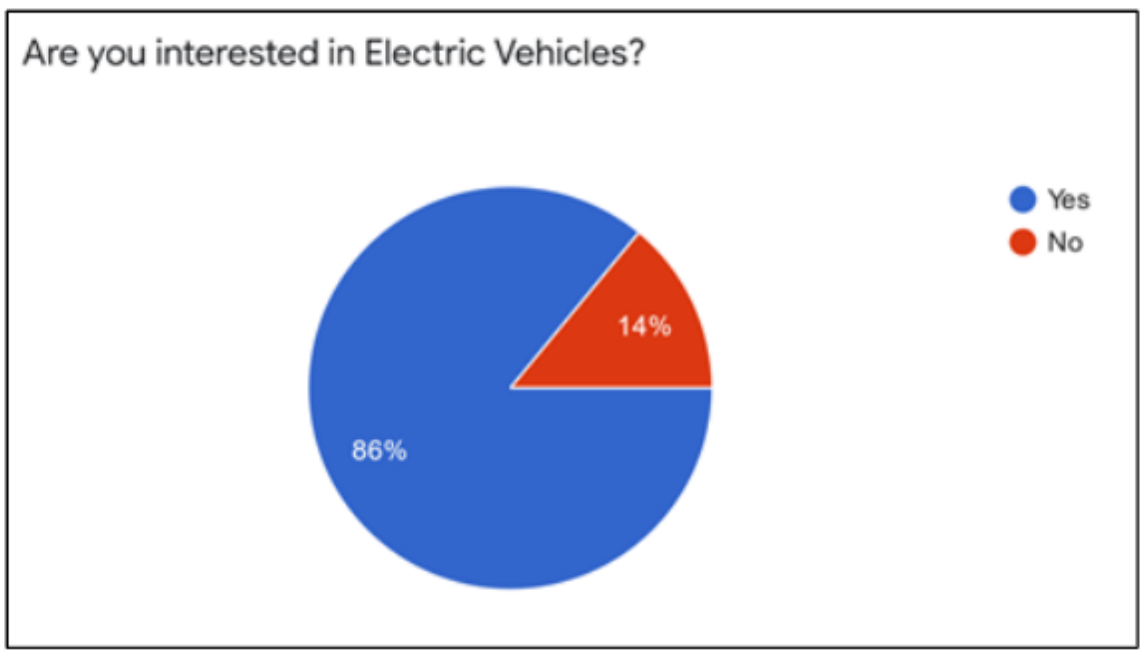


Fig: 6.1 (a)

Inference: Out of the surveyed people, 14% were interested in talking more / owning the Electric Vehicles and continued with the suvey. This question also formed a basis for our sample size determination from the data gathered through pilot survey. **(Refer 5.1)**

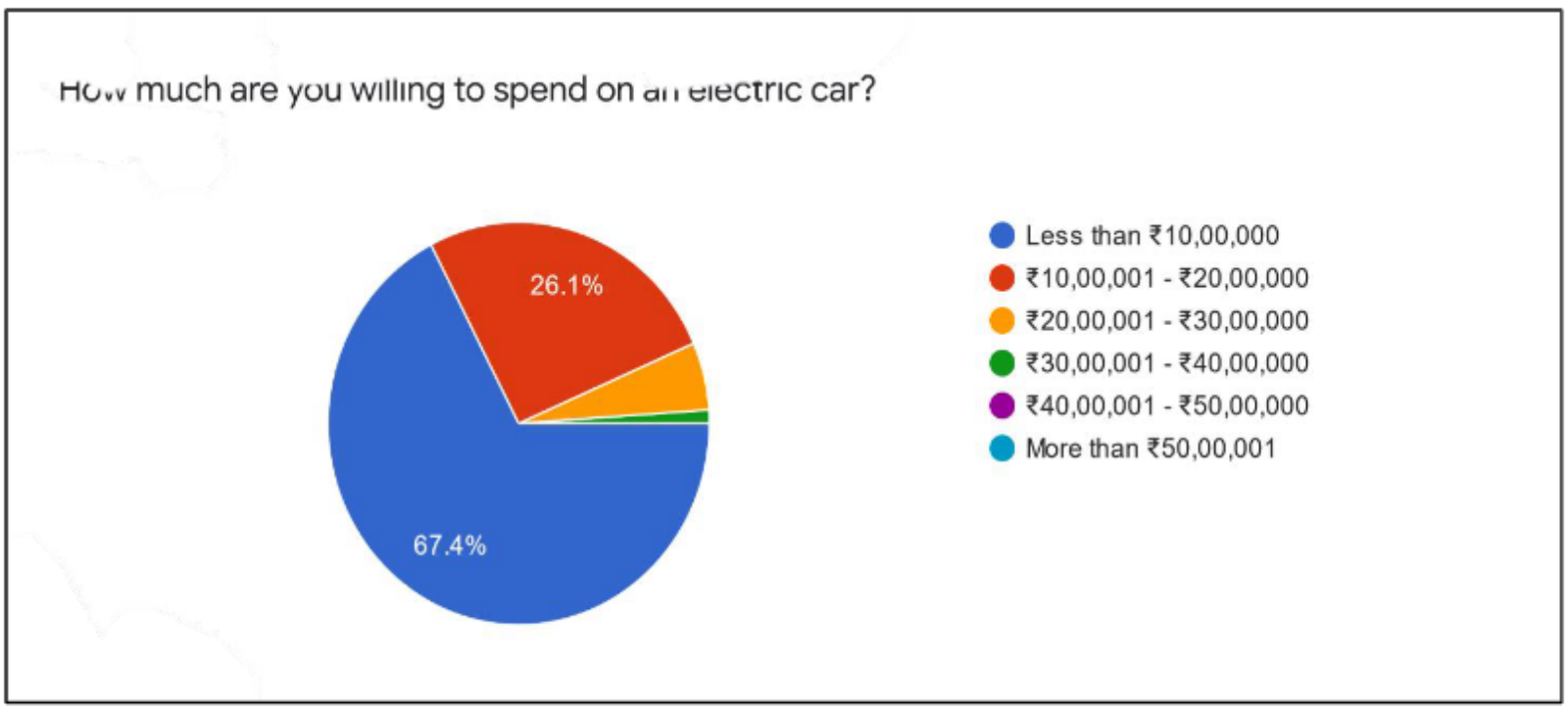


Fig: 6.1 (b)

Inference: It is clearly observed that majority want an electric vehicle which can be bought under ₹10,00,000/-, followed by the people who are willing to shed out ₹10,00,001 - ₹20,00,000/- for an electric vehicle. Hence it will be great for the manufacturig companies to launch electric vehicle under ₹10 Lakhs with maximum ceilling of pricing to ₹20 Lakhs.

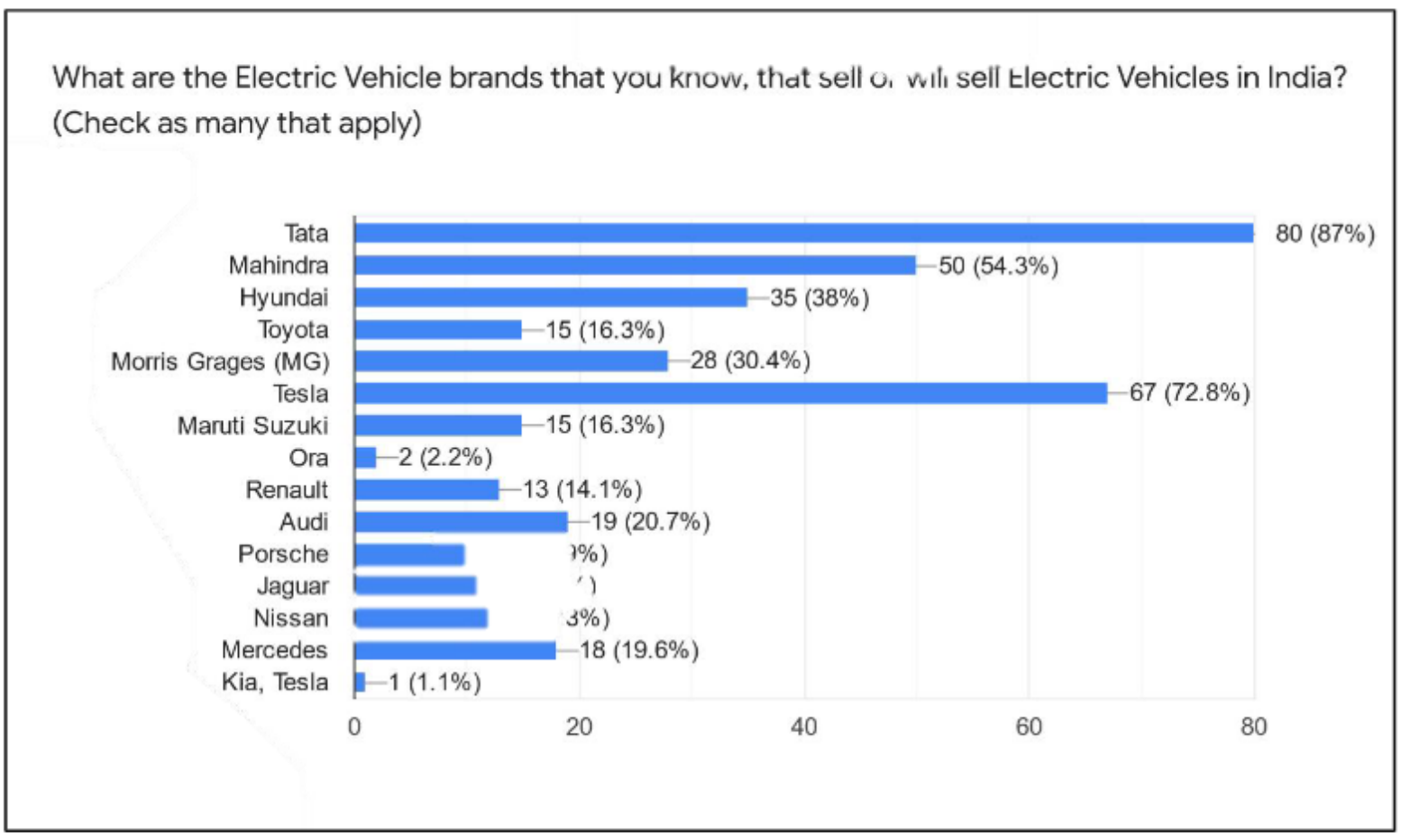


Fig: 6.1 (c)

Inference: The graph above shows the customers' brand knowledge on which all brands have launched / will be launching electric vehicle, especially in India. Majority are aware about Tata motors followed by Tesla and Mahindra. This clearly depicts that while selecting an electric vehicle; Tata Motors can be a primer choice of the customers and thus promote indigenously built electric vehicles.

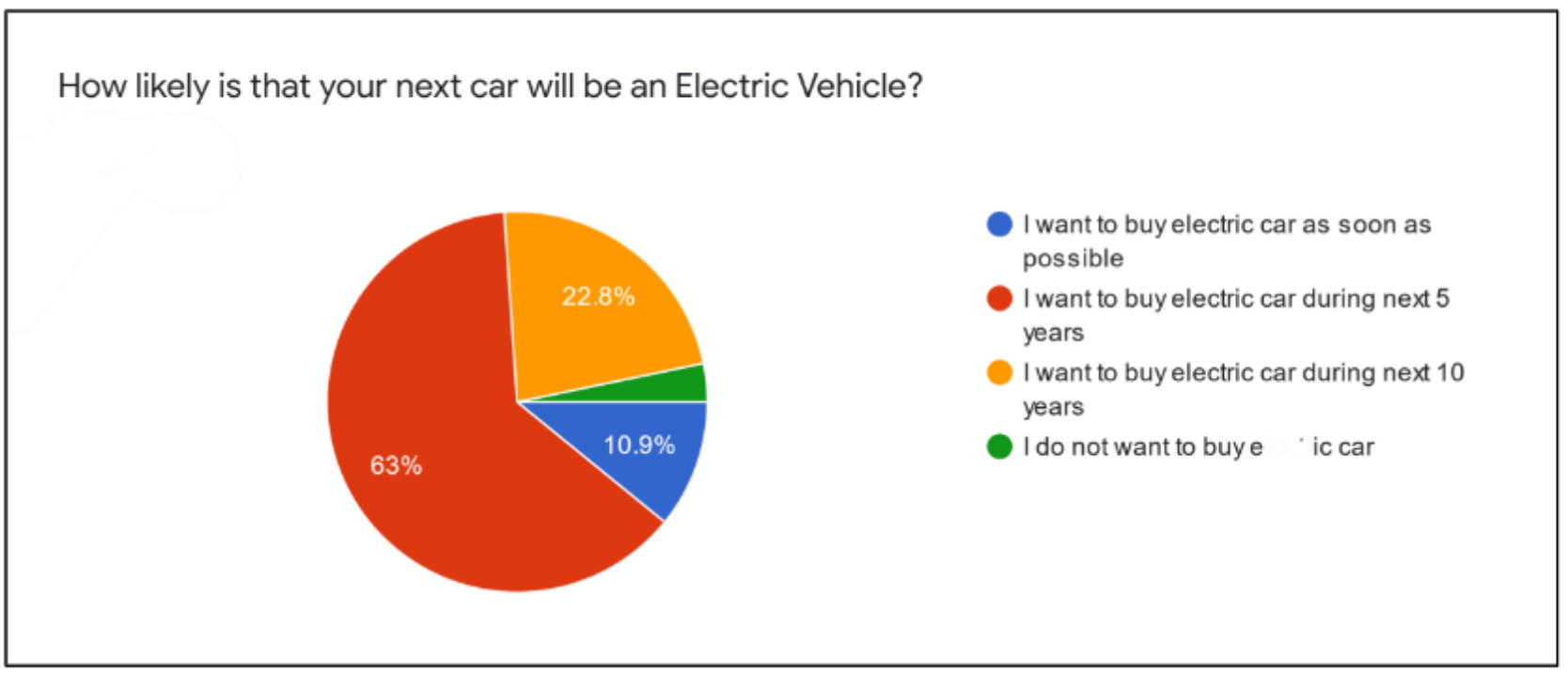


Fig: 6.1 (d)

Inference: Majority of the people who were surveyed think, in near 5 years there will be an electric vehicle which will be checking off all the boxes of their needs and wants successfully. This means majority of the people who were surveyed think that today there isn't an Electric Vehicle (EV) which can fulfill their majority of the needs and wants but they are optimistic that within next 5 years there will be one.

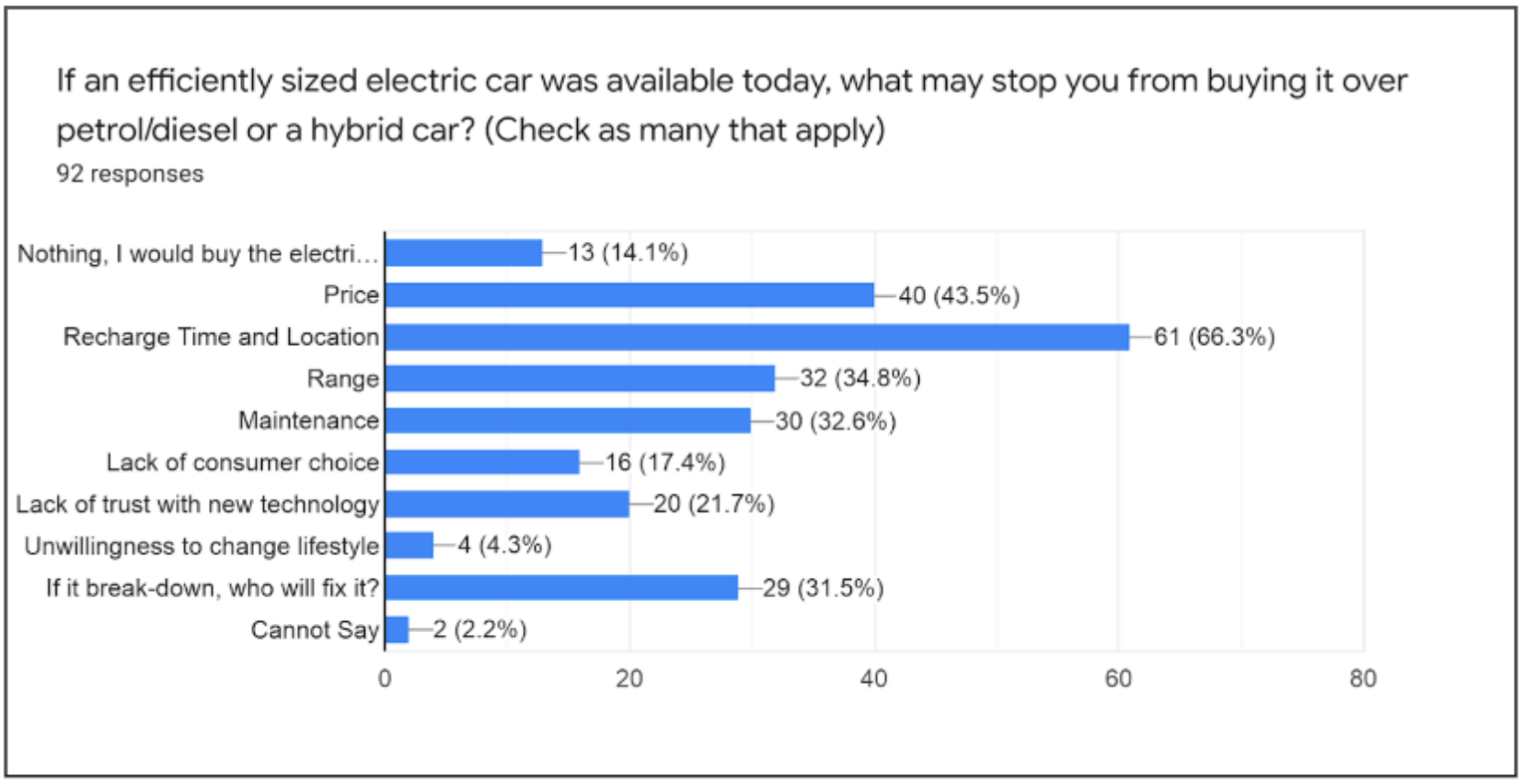


Fig: 6.1 (e)

Inference: From the different factors which were mentioned in the questionnaire, recharge time and recharge station location are the point of concern for most of the respondents. Other close factors are road assistance after breakdown, price and mileage of Electric Vehicle (EV). Hence, before introducing any electric vehicle these factors should be taken into consideration otherwise there will be reluctance from consumers towards purchase of Electric Vehicle (EV).

6.2 Factor Analysis

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.781
Bartlett's Test of Sphericity	Approx. Chi-Square	864.183
	df	210
	Sig.	.000

Source: Authors' Computation

Communalities

	Initial	Extraction
Physical Appearance	1.000	.713
Price	1.000	.787
Size	1.000	.656
Fuel Efficiency	1.000	.574
Maintenance	1.000	.653
Brand	1.000	.431
Technological Features	1.000	.658
Cheap Car Insurance	1.000	.799
Resale Value	1.000	.765
Safety	1.000	.760
Charging Points	1.000	.793
Colour	1.000	.688
Ride Comfort	1.000	.788
Sitting Capacity	1.000	.609
Warranty	1.000	.681
Hatchback	1.000	.716
SUV	1.000	.706
Sedan	1.000	.721
Mini SUV	1.000	.749
Promotional Offers (Adv. Campaigns Discounts etc)	1.000	.568
One-Time Charge Range	1.000	.656

Extraction Method: Principal Component Analysis.

Source: Authors' Computation

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	6.868	32.706	32.706	6.868	32.706
2	2.784	13.256	45.962	2.784	13.256
3	1.534	7.306	53.269	1.534	7.306
4	1.198	5.705	58.974	1.198	5.705
5	1.065	5.070	64.044	1.065	5.070
6	1.022	4.868	68.911	1.022	4.868
7	.951	4.527	73.438		
8	.729	3.471	76.910		
9	.707	3.369	80.278		
10	.604	2.875	83.154		
11	.557	2.653	85.806		
12	.499	2.375	88.181		
13	.449	2.139	90.320		
14	.424	2.018	92.338		
15	.348	1.658	93.996		
16	.288	1.371	95.367		
17	.269	1.279	96.645		
18	.233	1.111	97.757		
19	.198	.941	98.698		
20	.153	.730	99.428		
21	.120	.572	100.000		

Source: Authors' Computation

10 **Total Variance Explained**

Component	Extraction Sums of Squared Loadings	Rotation Sums of Squared Loadings		
	Cumulative %	Total	% of Variance	Cumulative %
1	32.706	3.132	14.914	14.914
2	45.962	2.859	13.615	28.529
3	53.269	2.827	13.460	41.989
4	58.974	2.352	11.200	53.189
5	64.044	1.927	9.177	62.366
6	68.911	1.374	6.545	68.911
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

Source: Authors' Computation

Component Matrix[a]

	Component					
	1	2	3	4	5	6
Physical Appearance	0.448	0.077	0.302	0.605	-0.003	-0.222
Price	0.495	-0.441	0.194	0.343	0.416	0.139
Size	0.69	-0.09	0.071	0.179	-0.182	0.319
Fuel Efficiency	0.459	-0.259	0.165	-0.289	0.142	0.407
Maintenance	0.542	-0.355	0.008	0.189	0.357	0.265
Brand	0.46	0.362	-0.043	0.212	0.015	-0.204
Technological Features	0.591	0.052	0.145	0.183	-0.354	0.355
Cheap Car Insurance	0.612	-0.066	-0.645	-0.01	0.048	-0.032
Resale Value	0.621	-0.122	-0.469	0.151	0.176	-0.301
Safety	0.667	-0.359	0.138	-0.208	0.098	-0.338
Charging Points	0.567	-0.476	0.266	-0.202	-0.075	-0.357
Colour	0.427	0.621	-0.102	0.289	-0.106	0.117
Ride Comfort	0.732	-0.173	0.151	-0.158	-0.416	-0.02
Sitting Capacity	0.751	-0.026	0.027	-0.008	-0.208	0.01
Warranty	0.606	-0.182	-0.515	-0.01	-0.122	0.033
Hatchback	0.604	0.341	-0.101	-0.379	0.237	0.159
SUV	0.459	0.591	0.279	-0.024	-0.125	-0.23
Sedan	0.423	0.663	0.114	-0.269	0.083	0.101
Mini SUV	0.297	0.636	0.205	-0.031	0.459	-0.051
Promotional Offers (Adv. Campaigns Discounts etc)	0.644	0.265	-0.254	-0.127	-0.025	-0.036
One-Time Charge Range	0.668	-0.212	0.344	-0.188	0.064	-0.088

Extraction Method: Principal Component Analysis.[a]

a. 6 components extracted.

Source: Authors' Computation

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
Physical Appearance	0.125	0.173	0.008	0.227	0.248	**0.744**
Price	-0.077	0.264	0.108	0.108	**0.801**	0.217
Size	0.122	0.188	0.235	**0.655**	0.332	0.109
Fuel Efficiency	0.136	0.306	0.037	0.324	0.455	-0.385
Maintenance	0.006	0.181	0.257	0.189	**0.72**	0.023
Brand	0.412	0.072	0.275	0.127	-0.01	0.406
Technological Features	0.153	0.104	0.102	**0.756**	0.158	0.13
Cheap Car Insurance	0.106	0.085	**0.862**	0.139	0.13	-0.031
Resale Value	0.084	0.242	**0.771**	-0.039	0.204	0.247
Safety	0.08	**0.78**	0.29	0.046	0.236	0.061
Charging Points	-0.09	**0.851**	0.14	0.12	0.146	0.074
Colour	**0.547**	-0.258	0.237	0.375	-0.053	0.349
Ride Comfort	0.09	**0.601**	0.235	**0.602**	-0.011	0.026
Sitting Capacity	0.223	0.406	0.343	0.498	0.116	0.125
Warranty	-0.02	0.164	**0.741**	0.301	0.105	-0.05
Hatchback	**0.679**	0.173	0.33	0.153	0.162	-0.258
SUV	**0.664**	0.226	-0.02	0.222	-0.22	0.341
Sedan	**0.82**	0.032	0.043	0.192	-0.078	-0.057
Mini SUV	**0.814**	-0.034	-0.054	-0.15	0.168	0.177
Promotional Offers (Adv. Campaigns Discounts etc)	0.455	0.176	**0.517**	0.248	-0.006	0.023
One-Time Charge Range	0.223	**0.672**	0.064	0.243	0.303	0.024

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Source: Authors' Computation

Component Transformation Matrix

Component	1	2	3	4	5	6
1	.403	.493	.494	.471	.321	.164
2	.801	-.417	-.073	.021	-.380	.187
3	.162	.403	-.851	.150	.167	.193
4	-.263	-.410	.023	.148	.296	.808
5	.316	-.078	.026	-.656	.678	-.066
6	.028	-.497	-.162	.551	.422	-.494

Source: Authors' Computation

6.3 Findings and Interpretations of Factor Analysis

KMO and Bartlett's Tests were used to check the usefulness of the factor analysis. Kaiser-Meyer-Olkin Measure of Sampling Adequacy shows the percentage of variation in our variables that might be due to certain hidden factors. The higher the value of KMO i.e., closer to 1, indicates the usefulness of the factor analysis and vice versa if the value is less than 0.5. in our case, the value > 0.5 i.e., **0.781**, hence we will apply factor analysis. Bartlett's Test of

Sphericity tests the hypothesis that our correlation matrix is an identity matrix and also indicated our variables are unrelated. The significance value of Bartlett's Test of Sphericity less than 0.05 shows that the factor analysis is useful for our data. In our case the value came out to be 0.000 which is < 0.05, therefore after getting the confirmation from the two tests, we went ahead with factor analysis (KMO and Bartlett's Test, SPSS Statistics, IBM).

Talking about the Eigenvalues of the different components which are **> 1,** this reflected that those components were suitable for further analysis.

In the Rotated Component Matrix table, the highlighted values of the components are > 0.5; hence those values form the respective components. We have used Rotated Component Matrix Table with Varimax along with Kaiser Normalization, because of the comparison between Component Matrix and Rotated Component Matrix Tables. Before rotation, most of the variables were loaded highly into the First Component & others really did not get a look into. However, after rotation things have been clarified considerably. Hence, Rotated Component Matrix has been used for the analysis and interpretation (Rotated Factor Matrix, SPSS Statistics, IBM).

Factors forming component 1 came out to be Color, Hatchback, SUV, Sedan and Mini SUV and therefore was named as **Type and Colour.**

Factors forming component 2 came out to be Safety, Charging Points, Ride Comfort and One-Time Charge Range and therefore was named as **Ride Comfort/Safety.**

Factors forming component 3 came out to be Cheap Car Insurance, Resale Value, Warranty, and Promotional Offers (Adv. Campaigns Discounts etc.) and therefore was named as **Monetary and Promo Offers.**

Similarly, **Component 4** is comprised of Size, Technological Features and Ride Comfort and therefore was named as **Features and Dimension.**

Component 5 is comprised of Price and Maintenance and therefore was named as **Consumer Expenditure.**

And Component 6 is comprised of Physical Appearance. Because there was only 1 factor per component for the component – 6, so it was named after its factor only i.e., **Physical Appearance**, this talks about the importance of physical looks of an Electric Vehicle (EV)

which can be either attractive or repulsive to a customer while buying an Electric Vehicle (EV).

The factor analysis provided us with an insight into what factors are responsible for Consumer Perception towards Electric Vehicles and what are the major factors which the companies need to focus upon while selling their Electric Vehicles (EVs).

7. FINDINGS AND RECOMMENDATIONS

7.1 Findings

The intent of this report was to find out factors that influence consumer while purchasing vehicles and their perception towards an Electric Vehicle. Based on the survey conducted investigation and interpretation of the information gained during the assessment following findings are recorded.

The majority of the respondents belong to Gen Y or Millennials who are either students or working professionals. The young generations have changed their mindset that is moving from conventional vehicles to electric vehicles going in a sustainably.

It is clearly observable that most of the consumer are aware of Electric Vehicles (97.2%) and the majority are interested to know or want to purchase a battery operated vehicles in future.

Most consumers have a budget of less than ₹10,00,000. Hence, new car manufacturers should launch their Electric vehicles with this price range so as to target this segment of the population.

The majority of the customers previously did not have a personal electric vehicle. There are high chances that if car manufacturers provide the best features with good demo and also give some attractive schemes, they can attract more and more customer.

A good portion of the population believes there is technology today to make an affordable electric car that can fit their needs (Budgets, Family Size, etc.)

People believe that Electric cars can prevent global warming, saves money for the owner. Also buying an electric car will have positive effect on their image.

Few important factors which customers think are very crucial while buying an electric vehicle – Price, Fuel Efficiency, Maintenance, Safety, Charging stations and One Time charge range.

7.2 Recommendations

Right time:

Import will play a major role for Electric Vehicle (EV) OEMs in India in the next 5-7 years. Currently it is the most favorable time for foreign companies to come to India and analyze the basic component needs of Electric Vehicles (EVs) and create an action plan accordingly.

Scope for Few Sectors:

The segments which will have growing demands are: **Aluminum industry** – mostly aluminium are used in electric vehicle than conventional vehicle (25% – 27%).

Electronics industry - The power electronics demand in Electric Vehicles (EVs) is expected to register a growth of 17.2% CAGR during period 2018 – 2023 (IIMB, 2018).

Early birds – Electric Vehicle (EV) components :

Most of the automotive component manufacturers have either started research for Electric Vehicle (EV) components or are manufacturing components related to Electric Vehicles (EVs) (particularly for electric 2W & 3W).

BS-VI to felicitate Electric Vehicle (EV) move:

The highest judiciary in India has directed the government to roll out BS-VI norms from April 2020. Since BS-VI will incur a huge cost in the form of up-gradation of infrastructure so move onwards Electric Vehicles (EVs) will attract OEMs

Clever decisions by the government :

GST, demonetization, and other reforms – increased the tax contribution of the people. This increased tax will strengthen the economic structure. Once the economy gets stable, full-fledged Electric Vehicle (EV) promotions will start. According to the Economic Survey 2017-18, the base of the indirect taxpayer has improved significantly by greater than 50% after the application of GST. Tax collections for the financial year 2017-18 are 17.1 per cent greater than the net collections for Fiscal Year (FY) 2016-17 (economictimes).

8. CONCLUSION

Consumer behavior comprises of all individual behavior that goes into producing before and post-purchase decisions. An organization can flourish in the competitive market only after recognizing the difficult consumer behavior. A knowledge of the buyer enables a marketer to make marketing decisions that are compatible with its consumer needs.

The framework has been made to find out the consumer preference of consideration to buy an Electric Vehicle in India. On the basis on the literature review (LR) we have pinned down factors that lead to change the consumer's perception to think about electric vehicles. The answers from the subjects were taken and the various factors were analyzed.

The different factors for which customer preference for buying an electric vehicle are Type and Colour, Ride Comfort/Safety, Monetary and Promo Offers, Features and Dimension, Consumer Expenditure and Physical Appearance

9. FUTURE SCOPE OF STUDY

As the report mentions there is a high prospect for electrically operated vehicles in the Indian automobile sector. So, scope and role of brand perception of consumer towards electrically operated vehicles can be another possible area of research.

Another potential field of study can be the role of advertisements and promotions of the brands for marketing the E vehicle.

One of the limitations might be that since this is a market study hence there can be various factor which can change consumers' attitude towards battery operated vehicles. The future study can be extending the study on other elements of consumer purchasing behavior towards cars to prove the exact reason.

A larger study can be done with a greater number of respondents and a wide span of the area to obtain more generalized results, new analytical possibilities. With many foreign players entering the market a study can be done to know its impact on consumers. Recent controversies have impacted the consumers' preferences of electrically operated vehicles was due to the lack of infrastructure. Our research was conducted from the consumer's opinion, but its scope can also be increased by focusing on retailers' opinions also.

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ANNEXURES

Questionnaire

1. Name

_____

2. Age

Mark only one oval.

- ◯ 18-24 years old.
- ◯ 25-34 years old.
- ◯ 35-44 years old.
- ◯ 45-54 years old.
- ◯ 55-64 years old
- ◯ 65-74 years old
- ◯ 75 years or older

3. Gender

Mark only one oval.

- ◯ Female
- ◯ Male
- ◯ Prefer not to say
- ◯ Other: _____

4. Which of the following categories best describes your employment status?

Mark only one oval.

- ◯ Student
- ◯ Working Professional
- ◯ Self - Employed
- ◯ Retired
- ◯ Other: _____

5. What is your approximate yearly income/ Household Income?

Mark only one oval.

- ◯ Less than ₹2,00,000
- ◯ ₹2,00,000 – ₹5,00,000
- ◯ ₹5,00,000 – ₹10,00,000
- ◯ ₹11,00,000 – ₹17,00,000
- ◯ ₹18,00,000 – ₹25,00,000
- ◯ More than ₹25,00,000
- ◯ Prefer Not to Say

Skip to question 6

Awareness and Liking

6. Are you aware of Electric Vehicles? *

Mark only one oval.

- ◯ Yes *Skip to question 8*
- ◯ No

7. Are you interested in Electric Vehicles? *

Mark only one oval.

- ◯ Yes *Skip to question 8*
- ◯ No

Skip to question 8

Consumer Preferences Towards Electric Vehicles

8. How much are you willing to spend on an electric car? *

Mark only one oval.

- ◯ Less than ₹10,00,000
- ◯ ₹10,00,001 - ₹20,00,000
- ◯ ₹20,00,001 - ₹30,00,000
- ◯ ₹30,00,001 - ₹40,00,000
- ◯ ₹40,00,001 - ₹50,00,000
- ◯ More than ₹50,00,001

9. Have you ever personally owned an electric car? *

Mark only one oval.

- ◯ Yes
- ◯ No

10. Have you ever personally driven an electric car? *

Mark only one oval.

- ◯ Yes
- ◯ No

11. What are the Electric Vehicle brands that you know, that sell or will sell Electric Vehicles in India? (Check as many that apply) *

Check all that apply.

- [ ] Tata
- [ ] Mahindra
- [ ] Hyundai
- [ ] Toyota
- [ ] Morris Grages (MG)
- [ ] Tesla
- [ ] Maruti Suzuki
- [ ] Ora
- [ ] Renault
- [ ] Audi
- [ ] Porsche
- [ ] Jaguar
- [ ] Nissan
- [ ] Mercedes

Other: [ ] _____

12. Do you believe there is technology today to make an affordable electric car to fit your needs (Budgets, Family Size, etc.)? *

Mark only one oval.

- ( ) Yes, it is available today
- ( ) No, but it will be available within the next 2 years
- ( ) No, but it will be available within the next 5 years
- ( ) It will never be available
- ( ) Cannot Say

13. If an efficiently sized electric car was available today, what may stop you from buying it over petrol/diesel or a hybrid car? (Check as many that apply) *

Check all that apply.

- [ ] Nothing, I would buy the electric car
- [ ] Price
- [ ] Recharge Time and Location
- [ ] Range
- [ ] Maintenance
- [ ] Lack of consumer choice
- [ ] Lack of trust with new technology
- [ ] Unwillingness to change lifestyle
- [ ] If it break-down, who will fix it?
- [ ] Cannot Say

14. How much do you agree with the following statements? *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Electric cars can prevent global warming					
Electric cars can replace regular cars in terms of satisfying consumer needs					
Electric cars can save a lot of money to the owner					
Electric cars are very expensive					
Maintenance Infrastructure is well developed					

15. On a scale of 5 please rank, How influential are/would the following factors when purchasing an electric car? (Where 5 - Very Influential, 4 - Influential, 3 - Neutral, 2 - Somewhat Insignificant, 1 - Insignificant) *

Mark only one oval per row.

	5	4	3	2	1
Physical Appearance	◯	◯	◯	◯	◯
Price	◯	◯	◯	◯	◯
Size	◯	◯	◯	◯	◯
Fuel Efficiency	◯	◯	◯	◯	◯
Maintenance	◯	◯	◯	◯	◯
Brand	◯	◯	◯	◯	◯
Technological features	◯	◯	◯	◯	◯
Cheap Car insurance	◯	◯	◯	◯	◯
resale value	◯	◯	◯	◯	◯
Safety	◯	◯	◯	◯	◯
Charging points	◯	◯	◯	◯	◯
Colour	◯	◯	◯	◯	◯
Ride Comfort	◯	◯	◯	◯	◯
Sitting Capacity	◯	◯	◯	◯	◯
Warranty	◯	◯	◯	◯	◯
Hatchback	◯	◯	◯	◯	◯
SUV	◯	◯	◯	◯	◯
Sedan	◯	◯	◯	◯	◯
Mini - SUV	◯	◯	◯	◯	◯
Promotional Offers (Adv Campaigns, Discounts etc.)	◯	◯	◯	◯	◯
One-Time Charge Range	◯	◯	◯	◯	◯

16. How likely is that your next car will be an Electric Vehicle? *

Mark only one oval.

- ◯ I want to buy electric car as soon as possible
- ◯ I want to buy electric car during next 5 years
- ◯ I want to buy electric car during next 10 years
- ◯ I do not want to buy electric car

17. To what extent do you agree with the following statements? *

Mark only one oval per row.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Buying electric car will have positive effect on my image					
Buying electric car will show my beliefs and what I stand for					
Buying electric car does not have any influence on my self-image					