

ELECTRIC VEHICLES IN INDIA

Sunil Kumar (Research Scholar)

Manan Choudhary (Research Scholar)

Pragada Satyanarayana (Research Scholar)

Abstract

This paper aims to discuss the findings on the Electric Vehicle (EV/EVs) in India a survey conducted to understand the expected behavior of a buyer by the Department of Data Analytics, Christ University, Bangalore. For data collection, 200 questionnaires were distributed, out of which 135 (67.5%) individuals responded. The finding reveals that most of the respondents are from an urban area, and they are either working professionals, students, or business owners. Respondents are environmentally conscious, and they think that there will be a positive impact on the environment.

The awareness of EVs among the respondents is moderate and most of the respondents are somewhat familiar with the progress. This paper aims toward awareness of social media, e-journals/journals, magazines, television, and advertisements, the awareness in rural and urban areas is more or less the same.

More than 60% of respondents have shown interest in buying an EV in the next 5 years. The battery capacity of an electric car is more than 300 km per charge which is more than sufficient to meet the day-to-day requirement. Respondents are willing to pay a premium price for an EV and they expect that the cost of running an EV will be much cheaper than a normal gasoline-powered vehicle of the same category. The major barriers to EVs in India are high capital cost, battery efficiency, and recycling, availability of battery recharging stations, and driving range per charge.

Overall people themselves are the brand ambassador of EVs in India, they are happy with the progress, and they would like to promote the EVs for pollution-free and green India.

Introduction

Change is a part of our life and most of the time, humans work together for a positive change that can benefit society. Talking about the automotive industry one of the biggest transformations that we have experienced in recent times is the introduction of EVs. Let us discuss more benefits. Low maintenance costs that if you buy a car with an IC engine; it will have more mechanical parts and, therefore, more complexities and difficulty in maintenance. EVs are easy and cheaper to maintain because of their simple structure and operations. Low running costs if we look at the Hyundai Kona, it delivers around 450 km in a single charge and therefore the running costs come down to even less than a single rupee per km. This paper isn't it? This is the most important one among all the benefits of buying an EV. No more fuel price hikes, these days fuel prices trouble you a lot. If you buy an EV, you will no longer have to worry about the daily fluctuating petrol and diesel prices. While the government changes the fuel prices depending upon the global prices, you will no longer have to worry because you will not need the fuel anymore if you buy an EV. Convenient charging at home EV- has a major advantage in this case where you can simply plug in your vehicle at your home for 4-5 hours.

It is environment friendly if you are planning to buy an EV, you are doing good for the environment. The earth has healed itself while the world was under lockdown. Buying an EV can reduce your carbon footprint because there will be no emissions at all. EVs are one of the most eco-friendly modes of transport available in the market. You can avail of government incentives also.

Yes, EVs are the only future that we can look up to! Fossil fuels are about to end anytime, and it is not a fair decision to exhaust all the fossil fuels while we live our life. Electricity is also generated from fossil fuels, but we are slowly moving toward renewable sources of energy which is then defined future.

We have solar energy and wind energy which are renewable and don't cause pollution too. EVs are the future and we must get used to them in the present too!

Literature Review

Discussion on the major technical aspects of Electric Vehicles

Electric vehicles were majorly discussed by several people since the government of India has pledged to make India adopt electric vehicles by the year **2030**. One of the major findings stated that the batteries of Electric vehicles are one of the major areas of concern. According to [MDPI](#)- A paper published named ([A Review on Electric Vehicles: Technologies and Challenges](#)) was about the challenges faced and people's opinions on various components of electric vehicles. The research concluded that batteries are the most crucial factors that align with the purchase in India. The research also stated the possible future solution for higher power and storage for a smaller period, which is Graphene, Lithium Air, and Aluminium Air which can be used to improve the battery life process & capabilities it's.

Consumer perspective toward Electric vehicles

Even after relentless provocation towards going electric as a new wave, the adoption number is significantly less. According to a research paper - Advances in consumer electric vehicle adoption research: ([A review and research agenda](#)), the research on consumer perspective based on theoretical framework turns out that, these types of studies,

where several theoretical perspectives are used in furthering the understanding of EV adoption, are promising since they provide a deeper understanding. Another important limitation of the current research concerns consumer knowledge and skills to calculate and compare the financial benefits and costs of EVs and ICEs. The paper further tries to analyze the five different themes based on different papers:-

- Theory of planned behavior and rational choice theory
- Normative theories and environmental attitudes
- Symbols, self-identity, and lifestyle
- Diffusion of innovations and consumer innovativeness
- Consumer emotions

Energy consumption by EV vs ICE

CO2 consumption of common ICE vehicles has created a catastrophe for us. According to a research paper published by ([IPO: Study of the Reality on Electric Vehicle in Indian Scenario](#)) - CO2 for an EV, depends upon not only the power sources but also the battery production. The source of power generation plays a big role in the emission of CO2. According to its research on comparing EV and ICE, on comparing with the time frame for 4-8 years, EV and it takes 6-8 years for an EV to convert to GV(Green-vehicles) so to say environment friendly, restricting life doesn't exceed more than 8 years.

Government policies and aid to Electric vehicles

A journal presented by ([River Publishers- 2018](#)) stated that the government policies implemented such as National Mission For Electric Mobility(NMEM 2020) aiming at full force capabilities for manufacturing electric vehicle technologies and growth security has trembled through the period due to various factors influencing the consumer behavior, battery life, etc, the sales of ICE engines have not allowed the electric models to dominate.

Hybrid technology is yet to be boosted as many diverse factors inefficient to be covered by government policies have massively impacted the global market.

Plug-in Electric Vehicles optimization

A research paper published by [EVS25 Shenzhen, China, Nov 5-9, 2010](#) discussed the optimal solutions for range-anxiety issues and economic conditions by use of wireless charging of electric vehicles with a minimum cost.

It shows how it is possible to technically charge the electric vehicles while running and the onboard battery can be significantly reduced. Wind or other green power can be wheeled through the grid to allow the dynamic battery load to match generation to demand in the rest of the network.

Consumer's perspective in India

The consumer in India has a very steady and rigid margin for change. Government policies do propagate the agenda toward the adoption of electric vehicles but according to the [European Journal of Molecular & Clinical Medicine](#) (ISSN 2515-8260 Volume 7, Issue 8, 2020), a research paper on electric vehicles discusses the scope of Electric vehicles in India and consumers perspective for a deeper analysis. The research showed that infrastructure is one of the most fundamental issues followed by the style and cost of those compared to ICE vehicles. The paper also stressed the depleting fuel and increasing consumption which makes it more relevant and important to discuss.

After reviewing the research papers from various sources we can look for the major loopholes in the government policies, lack of infrastructure, and a lower percentage of consumer awareness and knowledge of electric vehicles. Since this paper aims at analyzing the random groups to know their psyche towards the adoption of electric vehicles and various contributing factors entangled along with these broader assumptions.

Electric vehicle scenario in India

Currently, the EV market is extremely small in India. The sale of electric cars has become dormant at 2000 units per year for the last two years. But there is a vision for 100% electric vehicle sales by 2030 and since we are in 2020, the compound annual growth rate is 28.12%. India's first electric car Reva (Mahindra) was introduced in 2001, and since its launch, it could able to sell a few units. In 2010, Toyota began the Prius hybrid model, followed by the Camry hybrid in 2013. Electric buses and hybrid vehicles have been commenced as a pilot proposal in a few cities.

The Bangalore Municipal Transport Corporation (BMTCL) recently introduced electric transport in a dense corridor in the city. A survey was carried out in Ludhiana city, which demonstrated that 36% of the existing car and two-wheeler owners were enthusiastic about shifting to an electric vehicle. Telangana State Government is also encouraging the use of EVs and announced that the EV owners would not pay any road tax. In 2018, the Telangana State Electricity Regulatory Commission (TSERC) approved a charging tariff of INR 6 for EVs. The TSERC also fixed the cost of service for the entire state at INR 6.04/kWh. Hyderabad metro rail has also signed a partnership with Power Grid Corporation of India Ltd to provide EV charging facilities at metro stations. Hyderabad metro rail will be the first metro rail in the country to have EV charging stations stored and operated by the power grid. Hyderabad Government is also thinking of replacing diesel-run public transport vehicles with electric vehicles. This year, the New Delhi Govt. got approval for setting up 131 numbers of public charging stations in the capital. In November 2018, the Delhi Govt. released a draft policy that is aiming to convert 25% of their vehicles to EVs by offering various incentives and by setting up charging infrastructures in both residential and non-residential areas. This policy is intended to develop a charging point at every 3 km by offering a subsidy of 100% (up to INR 30,000) and waiving the road tax, parking charges, and registration fee for EVs by 2023. On the Mumbai-Pune highway, a private firm named Magenta Power is also working for setting up EV charging infrastructure.

Objectives of the Study

With the help of the study, we tried to understand:

- Orientation towards EVs.
- Awareness of the EVs among respondents.
- Willingness to buy EVs and affordability.
- The drawback of the EVs.
- Overall respondents' responses on a rating scale of 1 to 5.

Methodology

This study has been performed considering respondents from different parts of India, the location of the respondents is divided into rural areas and urban areas. In this study, a survey method was adopted. For the study around 200 questionnaires were sent via Email and WhatsApp to respondents to respond, out of those we collected 135 responses. The objective of the study is to understand the orientation towards EVs in India, awareness of EVs, willingness to buy an EV, at present what are the drawback of EVs, etc.

The study aimed to target business owners, service professionals, homemakers, and students. The questionnaire used in the study is embedded in appendix #1. Each question from the questionnaire is treated as a characteristic for the analysis and the options associated with a question are considered as valid values of that characteristic. All the questions are saved in a table format and used for the analysis after the required modification for analysis. The analysis of data presented in the subsequent sections is based on the responses received from the respondents.

Demographics Information

The demographic profile of the respondents reveals sex, age, location, education, and income which is summarized below in Figure 1

Demographic Information

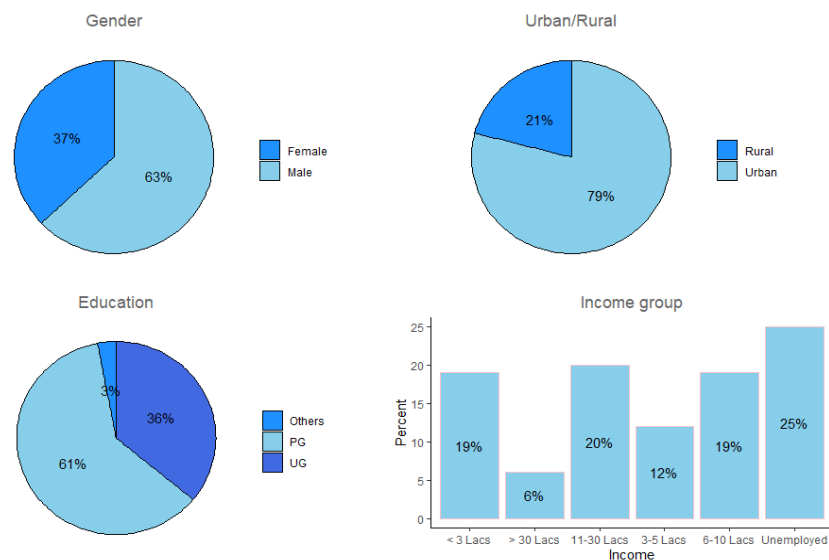


Figure 1: Demographic information of the respondent

Out of the total respondents, 63% are male and the rest 37% are female. Of the male respondents, 63% are service professionals and 11% are business owners and the rest 26% are students. Similarly, out of total female respondents, 36% are service professionals, 4% are business owners, 28% are homemakers and the rest 32% are students.

The percentage of the unemployed respondents is 25% and 19% of the respondents earn less than 3 lac per annum. Therefore, around 45% of the respondents out of the total samples collected are unemployed or earning less than 3 lacs per annum.

Most of the respondents are from urban areas (79%) and the rest 21% come from rural areas. Out of total respondents from an urban area, 52% are service professionals, 10% are business owners and the rest 32% are either students or homemakers. On the other hand, 55% of the total respondents from rural areas are service professionals and the rest 45% of the respondents are either students or homemakers.

Out of the total respondent, 36% of respondents who belong to urban areas earn more than 6 lacs per and whereas here 8% out of the total respondents who belong to rural areas earn more the 6 lacs per annum.

Hence, we can say that most of the respondents are from an urban area and most of them are working professionals and business owners. Most of the respondents are well qualified, only 3% out of the total respondents have not completed higher education. From the sample, we can observe that 45% of the respondents are either a student or earning less than 3 lacs per annum.

Orientation towards EVs

The survey shows that most of the respondents are environmentally conscious and expect a positive impact on the environment. Out of 135 respondents, 95% of respondents are environmentally conscious and the rest 5% think they are not.

With this backdrop, when we asked respondents whether EVs are environment-friendly vehicles, 85% of respondents had a positive view and 14% of respondents are not sure. However, only 1% of respondents say no.

Figure: 2: Shows the matrices considered to analyze respondent's orientation toward the Evs some time

Orientation towards EVs

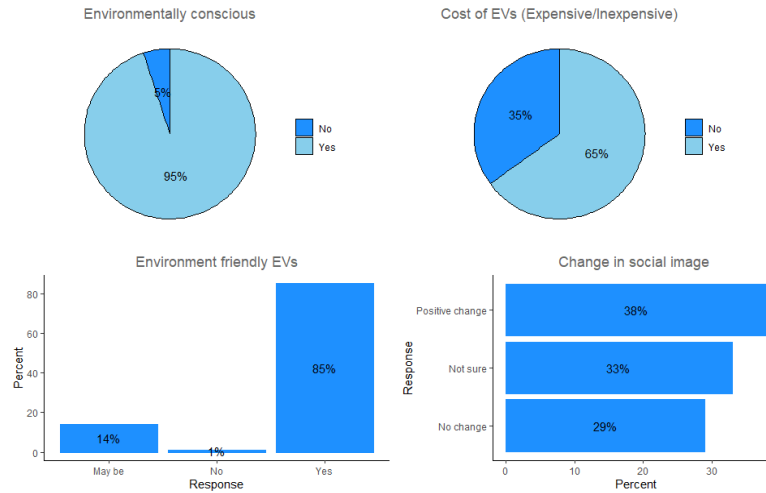


Figure: 2 Respondent's orientations towards EVs

Currently, there are several electric cars on sale in India. Of these, the Strom Motors R3 is the cheapest EV while the Audi RS e-Tron GT is the most expensive electric car in India. Upcoming electric cars in India include Renault Zoe, Mahindra eKUV100, and Tata Tiago EV among others. Table 1 shows at present available EVs in India and the price list:

Model	Ex-Showroom price
Audi RS e-Tron GT	INR 2.04 Cr*
Audi e-Tron GT	INR 1.79 Cr*
Tata Tigor EV	INR 11.99-13.14 Lacs*
Audi e-Tron	INR 99.99 Lacs – 1.23 Cr*
Tata Nixon EV	INR 13.99-16.85 Lacs
MG ZS EV	INR 20.88 Lacs
Hyundai Kona	INR 23.71 Lacs

Table 1: Electric Cars Price List 2021

Further, we can see from Figure 2 that 65% of the respondents think that the price of EVs in India is more expensive than the other gasoline-powered vehicles in their segment or categories whereas 35% of respondents think that the price of EVs would not be significantly higher than other gasoline-powered cars. We also tried to understand whether owning an EV would change the social reputation of an individual in the initial years of the EV era. There is no clear mandate from the respondents where 38% of respondents say it will have a positive change, 29% of respondents say no change and the rest 33% of respondents are not sure.

Hypothesis testing

We suspected that the people who believe their image will be influenced by having an EV, hence, chose to buy an EV in the coming years. To test our hypothesis, we performed the Fisher's test using R. Fisher's exact test examines the relationship between the two dimensions of the table (classification into rows vs. classification into columns). The null hypothesis is that these two classifications are not different.

The test was performed at a 95% confidence interval with the hypothesis be: H_0 : There is no association between the people who believe their image will be influenced and their choice for EV

H_1 : There is an association between the people who believe their image will be influenced and their choice for EV

Influence	As soon as possible	No Intention of Buying electric vehicles	Next 5 Years	Next 10 Years
No Change/Nothing Major in Self-Image	14	8	30	30
Positive Image Change	14	0	28	8

Table 2: Contingency table between who believe their image will be influenced and choice of EV

The test result shows, a p-value = 0.00202, hence, we reject the null hypothesis and accepted the alternative hypothesis. Therefore, we can say that there is an association between the people who believe their image will be influenced and their choice of EV

To this end, we can conclude that most of the respondents are environmentally conscious, and they think that EVs will have a positive impact on tackling climate change-related issues. More than 60% of respondents think that there will be no change in their social reputation and there is a generic view that the price of the EVs would be high initially.

Awareness of EVs among the respondents

EV uptake in India needs a dedicated focus on a public outreach that will be critical to resolving doubts, addressing grievances, engaging in continuous consultations, building trust, and strengthening its resolve.

The Delhi government took a step in the right direction by launching the Switch Delhi campaign. The campaign targets specific vehicle segments corporates, youth, etc. to sensitize them to the benefits of EVs and how the Delhi EV policy has provisions for each of these segments to increase these zero-emission uptake vehicles. The eight-week campaign's outcome can be good learning for Delhi and the rest of the country.

Awareness of the EVs

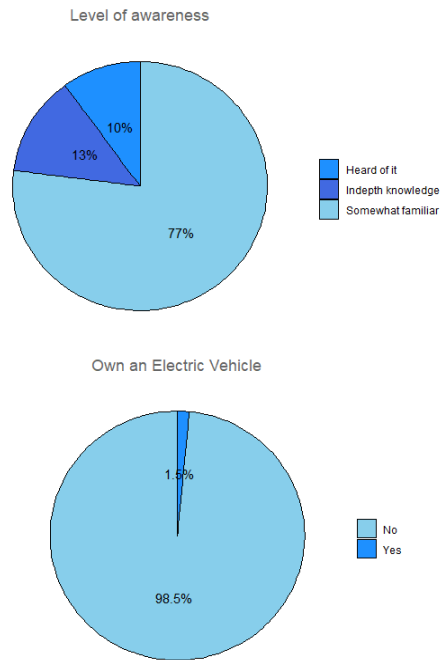


Figure 3: Awareness level and the EV users

Figure 3 show the level of awareness of EVs among the respondents and out of 135 respondents how many of them are EV user.

Statistics show that only 13% of respondents have an in-depth understanding of the EVs, 10% of the respondents have heard of them and 77% of the respondents are somewhat familiar with the EV.

Table 2 is a matrix showing the awareness of EVs among the respondents from rural and urban areas. The awareness level in rural and urban areas is more or less the same.

Awareness Matrix (Urban/Rural)				
Awareness Matrix	A respondent from Rural Area		A respondent from Urban Area	
	# Respondent	Percent (%)	# Respondent	Percent (%)
In-depth	5	17%	12	11.32%
Head of it	3	10%	11	10.38%
Somewhat familiar	21	72%	83	78.30%
Total	29	100%	106	100.00%

Table 3: Awareness matrix of Urban and Rural area

Figure 4 shows that electronic media is the major source of information in creating awareness of EVs among people, out of all the electronic media, social media is taking the lead where 22% of the respondents say they got to know about the EVs using social media. Next, comes Journals/Magazine (including e-journals and magazines).

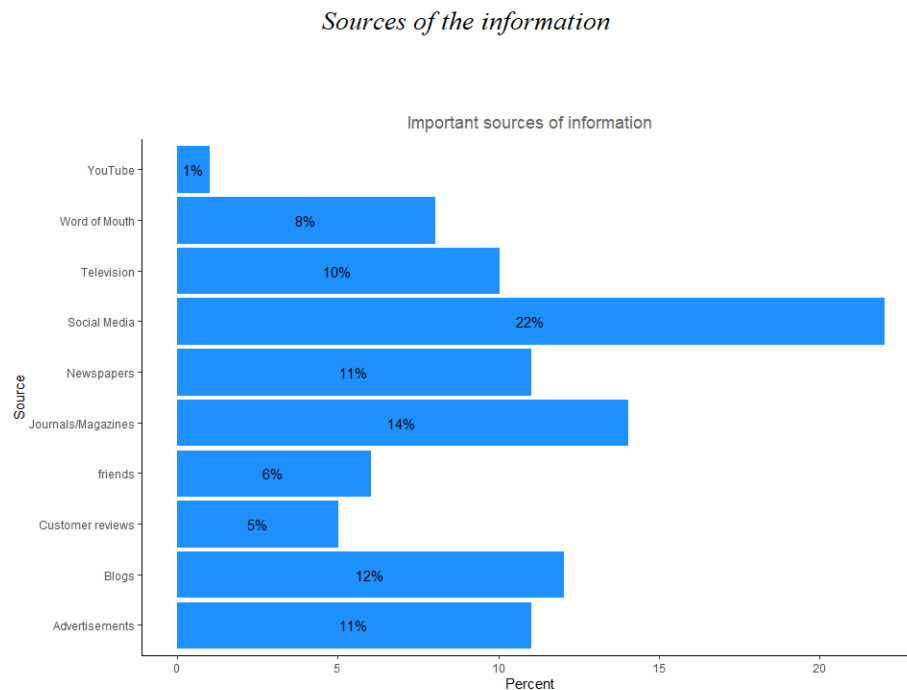


Figure 4: Sources of awareness

From the above analysis, we can say that awareness of EVs among the respondents are moderate and most of the respondents are somewhat familiar with the progress of EVs in India. The main source of awareness is social media, journals and magazines, television, and advertisements. The awareness in the rural areas and urban areas is no different.

Willingness to buy EV and affordability

The increased attention on electric vehicles is large because of two factors:

- To combat the rising threat of air pollution, and
- Reduce India's over-dependence on crude oil imports.

As the market is becoming more competitive, it is imperative to think about what it will take to make the price-conscious Indian buyer switch to an electric vehicle. The three major questions that remain in most buyers' minds are purchase price parity with fossil-fuel vehicles; benefits in operational and maintenance cost; and finally, range or the availability of adequate charging infrastructure.

With this backdrop, the survey matrices depicted in Figure 5, 21% of respondents are keen to buy an EV as soon as possible, 44% of respondents have shown interest in buying /her next vehicle as an EV in 5 years and 28% of respondents have also shown interest in buying an EV in next 10 years. Overall, 93% of the respondents are inclined to buy an EV in the coming years. This clearly shows the individual's inclination toward buying an EV.

Next, we asked the respondents on average how many kilometers do you drive/ride in a day. 39% of respondents said that they drive less than 20 km in a day and 16% of respondents drive between 20-40 km in a day. Hence, we can say that around 55% of the respondents drive less than 60 km meters a day.

Table 3 shows the battery capacity by car available in India, column distance per charge shows that all cars (except Mahindra e-Verito) cover more than 300 km per charge, and the time to recharge the battery is significantly low. Hence, these are cars are suitable for individuals driving less than 100 km per day.

Model	Battery Capacity	Distance per charge	Recharge Time
Tata Nexon EV	30.2kWh	312 km	0-80% charge in 60 mins
MG ZS EV	44.5kWh	340 km	Fast Charging in 50 mins
Hyundai Kona	39.2kWh	452km	Fast Charging in 57 mins
Mahindra e-Verito	21.2kWh	140km	Fast Charging 1 hr. 45 mins

Table 4: Battery capacity of the cars available in India

Going back to the Figure 5, as far as mass adoption of the EV is a concern, 26% of respondents think that people would like to buy electric cars more than other vehicles of the same category, and 27% of respondents think that people would like to buy electric bikes/scooters more than other vehicles of the same class. On the public transportation side, 23% of respondents think the bus would be sold more than another vehicle.

Figure 6 depicts the respondent's responses on the cost of the EVs, 37% of respondents say that they would like to pay 10% extra or above the price of a similar gasoline-powered vehicle, and 21 respondents are ready to pay 20% extra or above the price of the similar gasoline-powered vehicle. Surprisingly, 33% of respondents are not willing to extra prices for an EV of a similar category.

Willingness to buy, usage and adoption of EVs

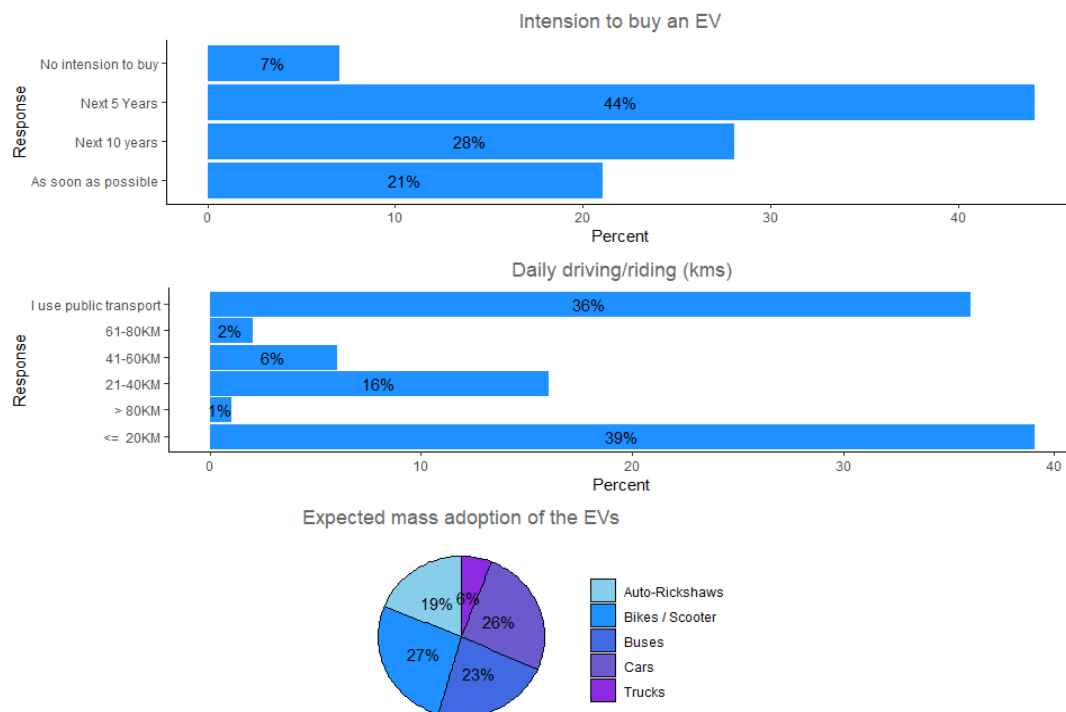


Figure 5: Intension to buy an EV, daily driving (in km), and expected mass adoption of the EVs

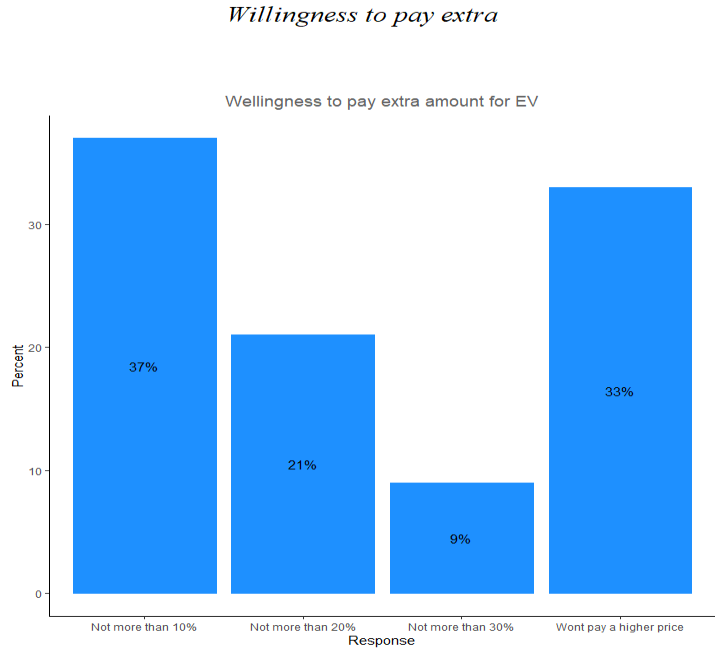


Figure 6: Willingness to pay extra amount for EV

In nutshell, we can say that around 65% of respondents have shown intention of buying an EV in the next 5 years. Around 66% of respondents drive 60 km per day on average, if we consider the available EVs in India the distance per charge is more than 300 km which is sufficient to meet day-to-day requirements.

Out of the total respondent, 67% of respondent is ready to pay the premium price for an EV considering EV will reduce the cost of running in the future.

Barriers for EVs

Figure 7 shows the current barriers to the EVs in India are broadly divided into 4 categories and each category further expanded into related issues.

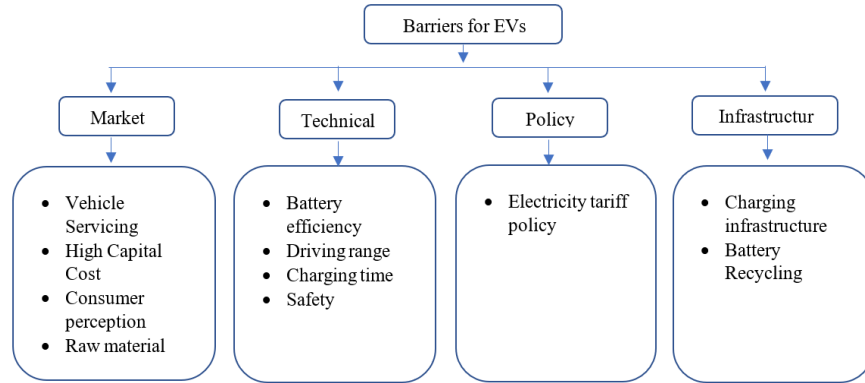


Figure 7: Barriers to EVs in India

The consumer is accustomed to a 5-minute refueling process at a gas station but is now required to plug in their vehicle at a charging station for approximately an hour for a full charge. In 2018, India had about 650 charging stations compared to 456,000 charging points available in China. The most fundamental requirement for the development of charging infrastructure is an expansion in the city's power grid as the recharging of EVs is accompanied by a considerable increase in the grid load. Another factor to be considered is the difference between recharging at peak load hours and non-peak hours.

EVs generally cost considerably higher than a typical gasoline-powered vehicle. The high cost of lithium batteries takes a chunk of this overall cost. However, in the long term, the consumer can save a fortune on refueling costs as recharging a vehicle is way cheaper than petrol/diesel. Other ownership costs, such as vehicle maintenance and resale value, also add to consumer inhibitions in the purchase of EVs.

A significant deterrent to the purchase of EVs is their comparatively shorter driving range, which is the shorter distance traveled on a full charge as compared to a gasoline-powered vehicle's distance on a full tank. This makes EVs inconvenient for traveling vast distances as the batteries will require repeated recharging. Thus, the typical driving pattern also plays a significant role in the purchasing decision process.

All the big players in the automobile sector are slowly shifting their focus to EVs, and most of them are still in the design process of their respective EV models. EVs involve several new components and techniques of manufacturing that are currently being explored by Indian manufacturers.

Keeping all the points mentioned above in mind, we designed our questionnaire and expected a similar response from the respondents. Referring to Figure 8, the respondents have clearly emphasized the critical issues discussed above. Out of 135 respondents, 77% of respondents have shown their concern over the availability of battery recharging stations, and 65% of respondents have highlighted that the battery damage issue will be a major concern for running an EV for some time.

Respondents also worried about the limited driving range of the EVs, 55% of respondents have voiced this concern in our survey. Also, 40% of respondents think that the price of the EVs would be a key concern initially for a buyer.

Key considerations and drawbacks in buying an EV

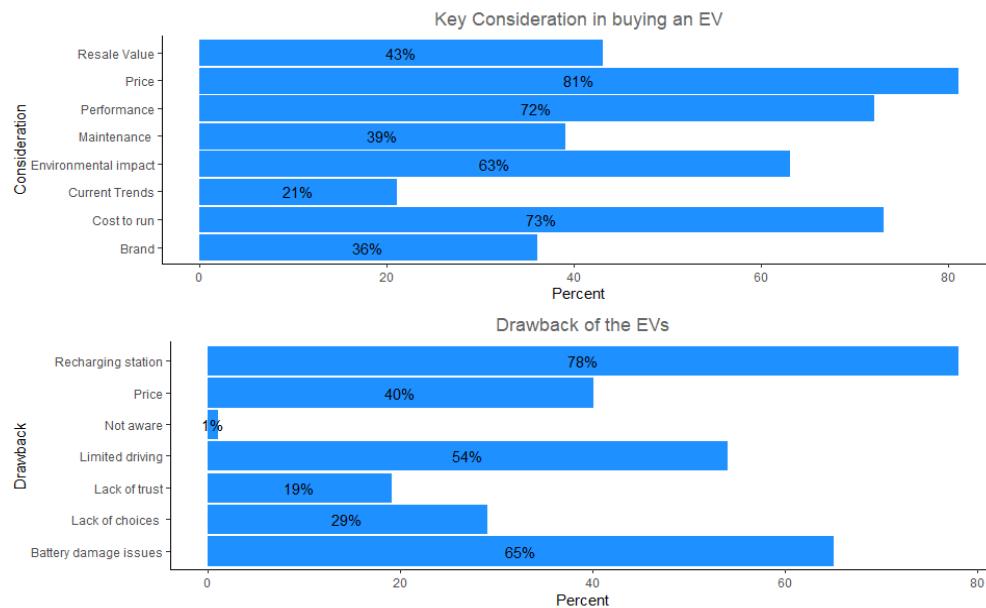


Figure 8: Key considerations and drawbacks

We also tried to understand the key factors that a buyer would like to consider before buying an EV.

There can be several factors to be considered at the time of buying an EV, however, we tried to list down a few. Referring to Figure 8, 81% of respondents say that the price of the EV would be the major key consideration while buying an EV. As far as the cost of running an EV is concerned, 73% of respondents would like to vet the cost of running an EV before buying it. Moreover, 72% of respondents are also considering the performance of an EV as a key factor in comparison to a gasoline-powered vehicle. Prioritizing the positive effect of an EV on the environment, 63% of respondents said they would like to consider the impact of the EVs on the environment.

Here we would like to conclude that the major barriers to EVs in India are high capital cost, battery efficiency and recycling, battery recharging stations, and driving range per charge.

Overall respondents' responses on a rating scale of 1 to 5

In the end, we tried to understand the overall response from our respondents on EVs in India (Refer to Figure 9).

We asked the respondents to rate the EVs in India on a rating scale from 1 to 5 where 1 is the lowest rating and 5 is the highest rating. The respondents seem optimistic about the EVs in India where 47% of respondents rated 4 out of 5, 24% respondents rated 5 out of 5 and 25% rated 3.

Further, we asked respondents would you promote EVs in India, and 88% of respondents said, 'yes' and 10% of respondents said 'no' whereof 2% of respondents said, "won't matter anyway".

Overall respondents' response on EVs

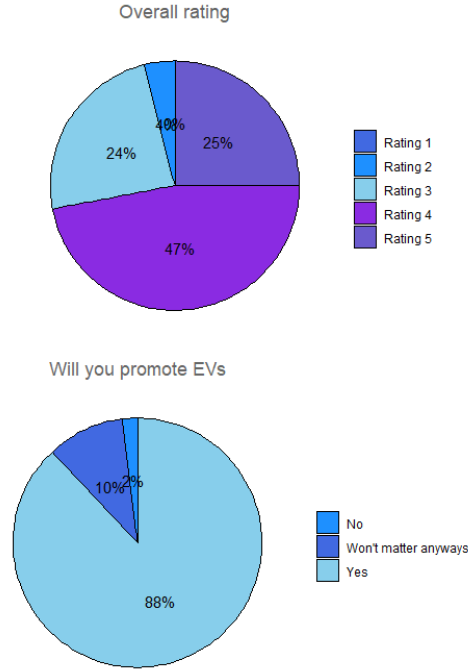


Figure 9: Overall response from the survey

Hypothesis testing

From the analysis we show that 95% of the respondents are environmentally conscious, hence, we are convinced that the rating provided to EVs in India depends on whether the person is environmentally conscious or not. To test our hypothesis, we performed the Fisher's test again at a confidence interval of 95% with the hypothesis as below:

H_0 : There is no association between opinion of people on environmental consciousness and their ratings on EVs in India

H_1 : There is an association between opinion of people on environmental consciousness and their ratings on EVs in India

Environmental Consciousness/Ratings on electric vehicle	Rating 2	Rating 3	Rating 4	Rating 5
Yes	3	29	61	32
No	2	3	1	1

Table 5: Contingency table between environmental consciousness and rating on EV

The test result shows a p-value < 0.05 , hence, we reject the null hypothesis and accepted the alternative hypothesis. Therefore, we can say that there is a significant difference in opinion of people on environmental consciousness and rating of electric vehicles.

To this end we can conclude that people themselves are the brand ambassador of EVs in India, they are happy with the progress, and they would like to promote the EVs in India for a pollution-free and green India.

Conclusion

In the end, we would like to conclude that most of the respondents are from an urban area and most of them are working professionals and business owners. The respondents are well qualified, only 3% out of the total respondents have not completed higher education, and 45% of the respondents are either a student or earning less than 3 lacs per annum.

Most of the respondents are environmentally conscious, and they think that EVs will have a positive impact on tackling climate change-related issues. More than 60% of respondents think that there will be no change in their social reputation and there is a generic view that the price of the EVs would be high initially.

The awareness of EVs among the respondents is moderate and most of the respondents are somewhat familiar with the progress of EVs in India. The main source of awareness is social media, journals and magazines, television, and advertisements. The awareness in the rural areas and urban areas is no different.

Out of total respondents, around 65% of respondents have shown intention of buying an EV in the next 5 years. Around 66% of respondents drive 60 km per day on average, if we consider the available EVs in India the distance per charge is more than 300 km which is sufficient to meet day-to-day requirements. On the other hand, 67% of respondents are ready to pay the premium price for an EV considering EV will reduce the cost of running in the future.

The major barriers to EVs in India are high capital cost, battery efficiency and recycling, battery recharging stations, and driving range per charge.

Overall people themselves are the brand ambassador of EVs in India, they are happy with the progress, and they would like to promote the EVs in India for a pollution-free and green India.

Appendix

1. Questionnaire used for the survey (attached below).



Questionnaire - EVs
in India.pdf

2. Dataset used for the analysis



Electric Vehicles In
India.csv (3).zip

3. Links to articles referred and leveraged

- [What do people think about electric vehicles? An initial study of the opinions of car purchasers in Poland - ScienceDirect](#)
- [View: Indians will plug into electric vehicles—if these barriers are knocked down first \(indiatimes.com\)](#)

- [electric vehicles: Why the future of electric vehicles appears bright in India - The Economic Times \(indiatimes.com\)](https://www.indiatimes.com)
- <https://www.sciencedirect.com/science/article/pii/S2666691X21000130>
- <https://inc42.com/features/what-are-the-challenges-for-the-ev-market-in-india/>

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- https://lucris.lub.lu.se/ws/files/19769346/1_s2.0_S1361920914001515_main.pdf. Advances in consumer electric vehicle adoption research A review and research agenda. Author: Rezvani, Zeinab; Jansson, Johan; Bodin, Jan. Published in Transportation Research, Part D: Transport and Environment
- https://www.researchgate.net/publication/349526351_Study_of_the_Reality_on_Electric_Vehicle_in_Indian_Scenario. Study of the Reality on Electric Vehicle in Indian Scenario. Authors : Bappaditya Kar, Tarun Kanti Pal, Suvanjan Bhattacharyya. Journal: IOP publication.
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