



# E-Vehicle Perception in Hyderabad City A Study on Consumer Attitude

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## **ABSTRACT**

This paper's goal is to understand how Hyderabad residents feel about e-vehicles. E-Vehicles are often discussed in the media, and governments throughout the globe are establishing laws to encourage the use of E-Vehicles in an effort to reduce oil dependency, reduce greenhouse gas emissions, and improve air quality. Since metropolitan areas are significant sources of pollution, residents there should be aware of and take steps to limit their own exposure to the potentially lethal substances they produce. In order to ensure environmental sustainability, this research aims to collect opinions, feelings, and perceptions on knowledge of, and propensity to purchase, electric automobiles. This collection of publications spans a number of years, beginning with a 2002 study that laid the groundwork for this field and ending with the most current studies (2019). Here, we conclude that we cannot reject the null hypothesis in chi-square testing, based on our findings. The null hypothesis must be accepted. The null hypothesis states that an electric car is not preferred by the significant other. In other words, buyers don't like electric vehicles. E-vehicles aren't as popular with customers as they used to be. We used a descriptive research approach in our study, which is unique and valuable. Questionnaires were employed to obtain main data. Chi-square test is an analytical method used to assess data efficiently while doing hypothesis testing.

**Keywords** – Hyderabad city, Sentiment analysis, Consumer perception, E-Vehicle.

## **1. INTRODUCTION**

Manufacturers were alarmed by the rise in air pollution in Indian cities. A total of 25 major Indian cities are included in the top 100 most polluted metropolitan regions in the world. There are several factors that contribute to air pollution in metropolitan areas, but the division of transportation is the most important. Discharges from transportation are essential, although the division is quite small. Air pollution has been shown to have a negative effect on human health and the economy, and manufacturers are imagining ways to reduce their impact on the environment.

Several national governments have successfully reworked their innovation development plans to include electric cars, which are seen as a viable transportation option. More importantly, indigenous governments see

the practicality of electric cars in the eradication of air pollution in metropolitan places.

Foreign examples of how to deal with problems and best practises are available. Hybrid automobiles have becoming more popular in China, where cycling and commuting are popular pastimes. Those who live in the UK's major cities, such as London, are reaping the benefits. Other examples include free or reduced costs for the purchase of new electric automobiles in some regions, as well as exemptions from blocking charges.

Electric 3-wheelers have become popular in India, however there is still a lack of power distribution. For city transportation, a wide range of vehicles were available, ranging from two- and four-wheelers to a whole armada. Electrical devices are propelled by a powerful atmospheric approach. Indians Automobile Manufactures (SIAM) yearly custom has frightened vehicle sector with a robust declaration from the Minister of Road Transport and Highways (MoRTH). In any case, defining strategies will need input on the required assistance's scope, ideas for government spending plans, necessary approach tools, and the use of private sector resources.

## 2. **OBJECTIVES**

- To find out how much consumers know about electric automobiles.
- To educate the public about electric automobiles.
- To find out what motivates people to purchase electric cars.
- Learn about the numerous government-sponsored projects in India for electric mobility.

## **LITERATURE REVIEW**

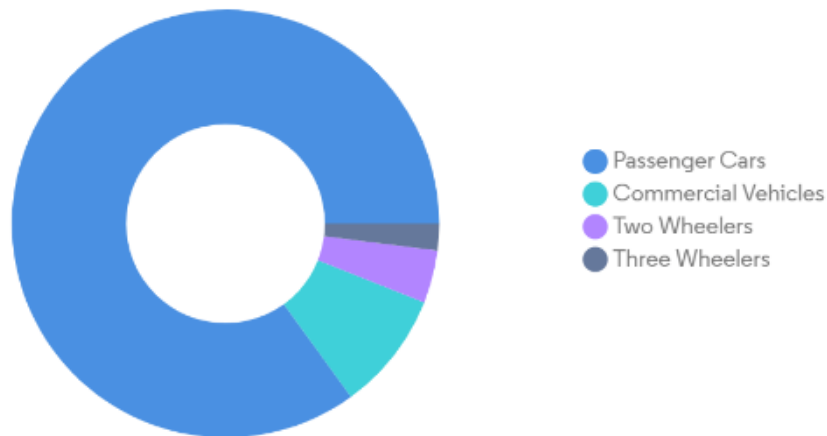
Eco-friendly technologies are being pushed into use by the transportation industry because of environmental pressures. It is widely accepted that electric vehicles (EVs) are environmentally friendly. It is the batteries that are the primary emphasis of this study since they are critical to making electric cars more environmentally friendly, cost-effective, and practical for everyday usage. Electric cars are based on technology that has been around for more than a century. But because of the availability and convenience of use of combustion engines, electric driving was placed on hold. Electric cars are once again gaining popularity due to a variety of (both positive and negative) causes. A cleaner electric car is being pushed by factors such as dwindling oil supplies and a growing consciousness about the environmental impact of traditional combustion engine automobiles. When it comes to towing, electric vehicles can now compete with conventional vehicles thanks to advancements in battery and motor technology. The rollout of electric vehicles may be seen as a measure of safety and security in the face of rising CO2 emissions and the depletion of fossil fuels. In the future, an electric vehicle will be able to travel long distances with ease and efficiency thanks to new technology that is already mature and on the upswing. It's not the first time that this has happened, but it is the first time that it has been done in a more modest way, and it is a learning experience. Using research conducted in 2006 and 2008, we want to shed light on the reasons for this new mode of transportation, as well as the obstacles that electric vehicle drivers faced and the patterns of usage that dictated their mobility and their use of electric cars.

EV adoption studies are summarized, however just a few sample ones are chosen to highlight individual-specific psychological aspects that impact people's desire to embrace electric vehicles. The following are some ways in which our review adds to it: First, we examine a broader variety of influences on Electric Vehicle adoption than only psychological variables; second, we give a complete picture of existing research by aggregating all academic works on the topic.

Demand studies have examined the financial, technological, essential, and political aspects of electric vehicles in order to assist governments and auto manufacturers better understand customer preferences for electric vehicles (Liao et al., 2017). Driving range, recharging time, and ownership expenses have been cited as some of the variables that influence EV buyers. When it comes to purchasing an electric car, there is a great deal of variation in customer preferences.

- In February 2021, the Delhi government announced a subsidy of INR 30,000 for promoting e-rickshaws as last-mile connectivity in Delhi. This, in turn, has led to the proliferation in their demand in the city, further benefiting the market.

### India Electric Vehicle (EV) Market, Revenue Share (%), By Vehicle Type, 2021

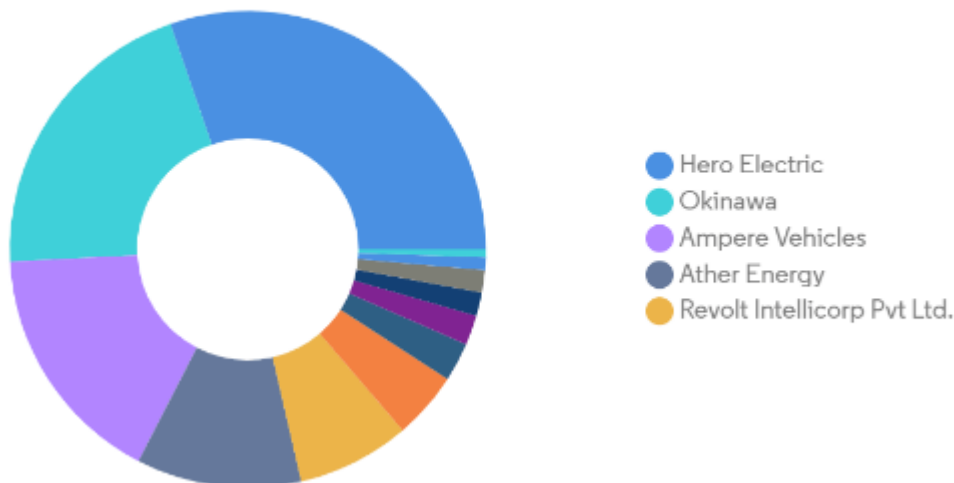


In February 2021, Bounce, a bike rental startup in the country, made an announcement that it was planning to launch its electric scooter in the country. However, the expected launch date has not been declared. Price is expected to be around INR 55,000 and an additional INR 1,450 per month for maintenance, including battery maintenance.

Several local major players in the country are investing heavily to enhance their production capacity of electric two-wheelers in the country to cater to enhancing the demand in the country. For instance,

In February 2021, Ampere Electric made an announcement that it would be investing INR 700 crore in setting up a new electric two-wheeler plant in Tamil Nadu. Thus, with such growing advancements and developments passenger cars segment is expected to witness steady and consistent growth during the forecast period.

### India Two Wheeler Market - Volume Share (%), By Manufacturer, 2021



### 3. METHODOLOGY OF RESEARCH

#### Design of Research:

Primary research and Secondary Research will be descriptive survey research.

#### Sources of Data:

Supplemental resources, such as articles from scholarly journals and books from publishers like Harvard and MIT that may be found on Google Scholar or official government or business websites.

#### Method of Data Collection:

survey through Primary method.

**Population:**

Hyderabad city targets of consumer age group between 18 towards 55.

**Method of Sampling:**

Convenience sampling, quota sampling and Random Sampling,.

**4. RECAPITULATION OF THE DATA ASSESSMENT**

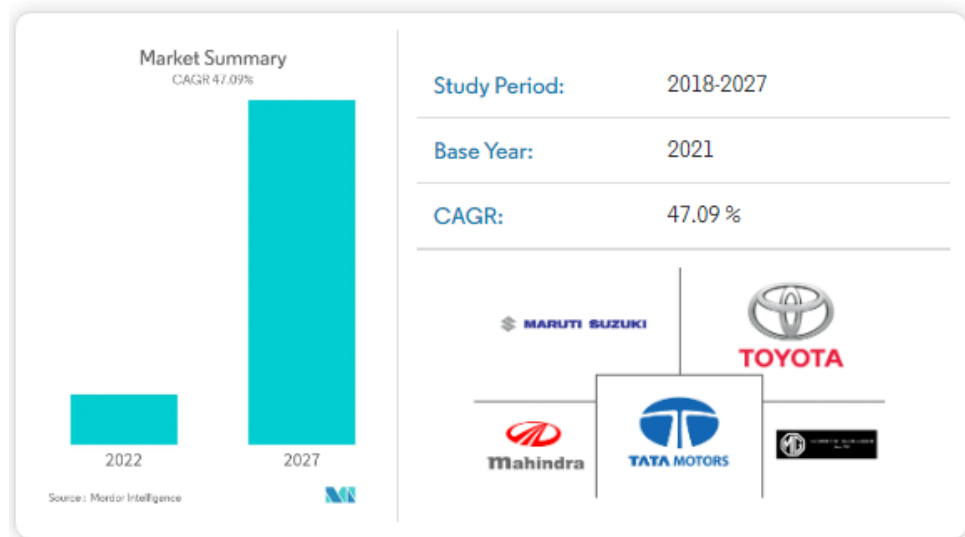
<b>“Gender</b>	<b>Responses</b>
Male	56
Female	42
Other	02
<b>Grand Total</b>	<b>100</b>

<b>Age</b>	<b>Responses</b>
20-30	82
30-40	14
40-50	02
More than 50	02
<b>Grand Total</b>	<b>100</b>

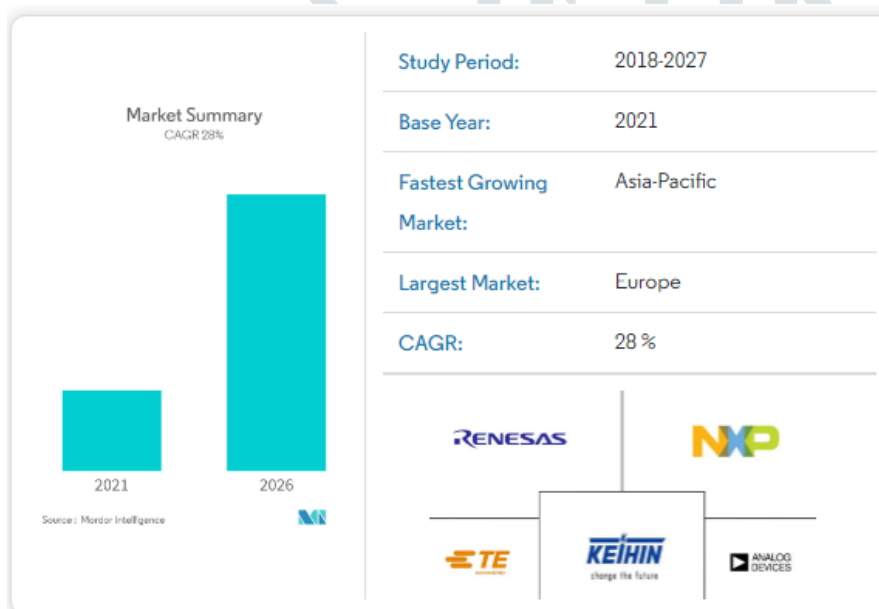
<b>Occupation</b>	<b>Responses</b>
Business	25
Employee	55
Household	06
Student	14
<b>Grand Total</b>	<b>100</b>

<b>Income</b>	<b>Responses</b>
Rs. 3,00,000 - Rs. 5,00,000	62
Rs. 5,00,000 - Rs. 10,00,000	26
More than Rs. 10,00,000	12
<b>Grand Total</b>	<b>100”</b>

## Market snapshot



## Market Snapshot

**TESTING THE IMPLICATIONS OF THE HYPOTHESIS**

We used the Chi-square test in our investigation.

**Chi-square Test**

With the Chi-square test, you may determine whether or not a certain observed distribution is just a result of random variation. "Goodness of fit" is a term used to describe how well observed distributions match those predicted if all variables are independent. The chi-square statistic is determined by the implication level of the data.

**H<sub>0</sub>:** A noteworthy E-vehicle is not more preferable.

**H<sub>1</sub>:** Electrified vehicles are preferred over conventional vehicles since they are more momentous.

Table 1 Calculation of observed data

“Observed (fo)	Maruti Suzuki	Hyundai	Tata	MG	Other	Total
Electric Car	06	16	21	10	13	66
Electric Bike	07	08	07	05	07	34
Total	13	24	28	15	20	100

Table 2 Calculation of Expected data

Expected (fe)	Maruti Suzuki	Hyundai	Tata	MG	Other	Total
Electric Car	8.58	15.84	18.48	9.9	13.2	66
Electric Bike	4.42	8.16	9.52	5.1	6.8	34
Total	13	24	28	15	20	100

Table 3 Calculation of Observed &amp; Expected data

Chi-square	Maruti Suzuki	Hyundai	Tata	MG	Other	Total
Electric Car	0.775804196	0.001616162	0.34363636	0.0010101	0.003030303	1.125097125
Electric Bike	1.505972851	0.003137255	0.66705882	0.0019608	0.005882353	2.184012066
Total						3.309109191

Table 4 Cal. of Df, CV, P-value

Df = (r-1)(c-1)	CV →	9.487729037
Df = 4	P-value →	0.507490283”

### Conclusion:

5. In this case, the Chi-Square value is less than the Critical Value. Thus, we cannot rule out H<sub>0</sub>. OR the p-value is 0.507490283 and the alpha is 0.05. Because the p value is more than 0.05, the results are not statistically significant. As a result, H<sub>0</sub> cannot be ruled out. As a result, it can be said that Significant are not more preferable as an EV.

### 6. VERDICTS

- There are 56 men, 42 women, and 2 others in every 100 persons. This implies that men possess superior wisdom.
- Only working women are knowledgeable about E-vehicles.
- Respondents in their 20s and 30s are the most interested in E-vehicles.
- Respondents are mostly employees and company owners.
- According to our research, almost 80% of people care about the environment.
- According to the results, 66% of individuals prefer an electric automobile, while 34% choose an electric bike or scooty.
- The majority of respondents favour environmental benefits, low noise levels, and new trends when purchasing an E-vehicle.
- According to a survey, 26 percent of people prefer to learn about E-vehicles through the internet, 14 percent from relatives and friends, 11 percent from television, and the rest from newspapers and outdoor advertisements.
- Many people believe that electric vehicles are out of reach for most people's budgets.

- In terms of addressing customer demands, a large majority of respondents believe that electric cars can take the place of conventional vehicles.
- E-vehicles, rather than traditional automobiles, are expected by the majority of customers to bring about improvements in terms of transportation efficiency, comfort, upkeep, and overall durability.
- Sixty-four percent of those surveyed were aware of the government incentives that would be available to those who acquire an E-vehicle in the near future, while just 36 percent were unaware of them.
- Electric cars can save a lot of money for their owners, with 46 percent of respondents neutral, 35 percent agreeing, and 19 percent strongly agreeing.
- According to research, the majority of individuals do not choose electric vehicles.
- Chi-square test fails to reject a null hypothesis when statistical tools are used. The null hypothesis must be accepted. The null hypothesis states that an electric car is not preferred by the significant other. In other words, buyers don't like electric vehicles. E-vehicles aren't as popular with customers as they used to be.

## 7. **PROBLEMATIC DECLARATION**

Our goal is to determine whether consumers' preferences for electric vehicles or other modes of transportation have shifted in the current COvid-19 scenario, where many automakers are seeing sales declines. Alternatively, people may not be aware of the advantages of e-vehicles. We shall endeavour to promote awareness via this investigation.

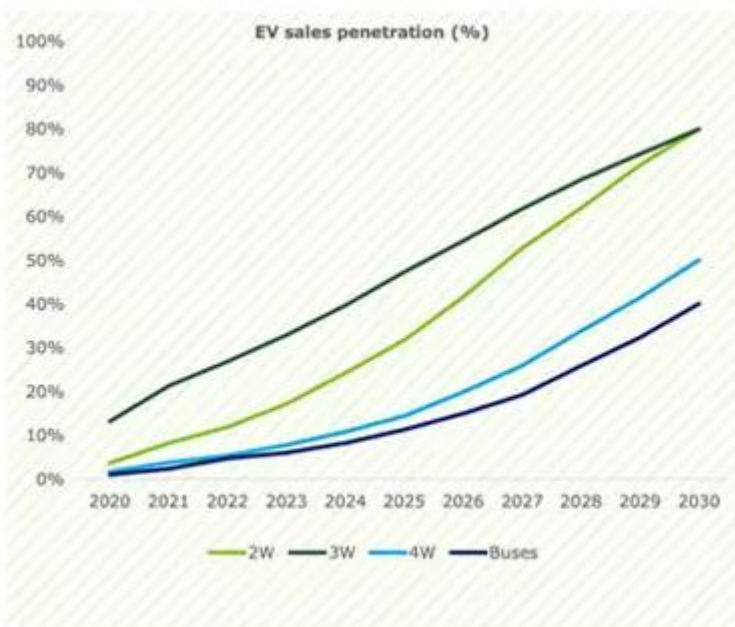
## 8. **STUDY OF LIMITATIONS**

Only data from Hyderabad and Osmania University campuses were obtained, which only represents a tiny percentage of the population.

Additionally, future studies should include larger samples from a wider range of locations, as well as more in-depth analysis.

It's possible that those that fill out the survey online may not be 100% honest while answering the questions.

Figure 2: EV Sales penetration projected by NITI Aayog by 2030



Source: 30 India's Electric Mobility Transformation ([access here](#))

## 9. **CONCLUSION**

Again from chi-square test and the study shown above, we may deduce that the null hypothesis cannot be rejected. The null hypothesis must be accepted. The null hypothesis states that an electric car is not preferred by the significant other. In other words, buyers don't like electric vehicles. E-vehicles aren't as popular with customers as they used to be. We may also assume that consumers prefer an electric automobile over an electric bike or scooty based on the question in the questionnaire. When contemplating the purchase of an electric car, consumers weigh the benefits to the environment, the cost, the noise level, and emerging design trends. Electric automobiles, according to the majority of survey participants, are too costly. In terms of

addressing customer wants, a large majority of respondents believe that electric vehicles can replace traditional automobiles. According to our research, the majority of individuals choose anything other than an electric car.

## **REFERENCES**

1. Lebeau, K., Van Mierlo, J., Lebeau, P., Mairesse, O., & Macharis, C. (2013). Consumer attitudes towards battery electric vehicles: a large-scale survey. *International Journal of Electric and Hybrid Vehicles*, 5(1), 28-41.
2. Høyer, K. G. (2008). The history of alternative fuels in transportation: The case of electric and hybridcars. *Utilities Policy*, 16(2), 63-71.
3. February-2022, ISSN 2249-4510 Volume: 17 / Issue: 1 Publisher: Ignited Minds Journals E-ISSN: 2249-4510, [http://ignited.in/File\\_upload/Download\\_Article/IJITM\\_ISSUE\\_1\\_VOL\\_17\\_305612.pdf](http://ignited.in/File_upload/Download_Article/IJITM_ISSUE_1_VOL_17_305612.pdf) Dr Naveen Prasadula,(2022) Department of Business Management Osmania University A Study on Profitable of Futures with Reference to SBI
4. Work-Life Balance Work of Indian Women in (JETIR) Journal of Emerging Technologies and Innovative Research (Andhra University Visakhapatnam) Dr Moturi Aparna MBA, PHD (2021) (Andhra University Visakhapatnam) (ISSN: 2349-5162)
5. Sharma, Anupam (2020). Covid-19 has had an influence on changing customer behaviour towards internet buying. *Journal of the Academy of Marketing Studies*. 2020, 4(3).
6. Dr Naveen Prasadula. MSC (I.T), MBA, PHD (2021) Department of Business Management Osmania University: Working Employes satisfaction and corporate social responsibility on organizational culture, *Employee Relations* © 2020 IJRAR December 2019, Volume 6, Issue 7 [www.ijrar.org](http://www.ijrar.org) (E-ISSN 2348-1269, P- ISSN 2349-5138)
7. K.Vaeshnavi, Dr Naveen Prasadula, A Study of Derivatives Market in India and its Current Position in Global Financial Derivatives Markets, *IOSR Journal of Economics and Finance* Volume 3, Issue 3. (Mar-Apr. 2021), PP 25-42
8. K.Vaeshnavi (2022) Research scholar in the department of Business management, University College of Commerce and Business management, Satavahana University. Karimnagar, Dr Naveen Prasadula. MSC (I.T), MBA, PHD (2021) Department of Business Management Osmania University: Working Employes satisfaction and corporate social responsibility on organizational culture, *Employee Relations* © 2020 IJRAR December 2019, Volume 6, Issue 7 [www.ijrar.org](http://www.ijrar.org) (E-ISSN 2348-1269, P- ISSN 2349-5138)
9. Dr Naveen Prasadula MSC (I.T), MBA, PHD (2020) A Study of Corona Virus impact on Indian Economy and FDI impact in Indian Economy
10. Dr. Madireddi SSV Srikumar School of Commerce and Management Studies, JAIN University Bangalore, Karnataka, India (2022) DIVIDEND POLICY [http://ijmer.in/issues/volume11/volume11-issue2\(6\).aspx](http://ijmer.in/issues/volume11/volume11-issue2(6).aspx)
11. K. Naveen Kumar, Research Scholar, Rabindranath Tagore University and Assistant Professor, Villa Marie Degree College for Women, Somajiguda, Hyderabad (2022) MERGERS AND ACQUISITIONS IN INDIAN PHARMACEUTICAL INDUSTRY
12. K. Naveen Kumar, Research Scholar, Rabindranath Tagore University (2020). Balancing work and life: Implications for business. *Indian Journal of Industrial Relations*, 41(2), 233–247.
13. K.Vaeshnavi (2022) Research scholar in the department of Business management, University College of Commerce and Business management, Satavahana University. Karimnagar, Dr Naveen Prasadula. MSC (I.T), MBA, PHD (2021) Department of Business Management Osmania: Working Employes satisfaction and corporate social responsibility on organizational culture, *Employee Relations* © 2020 IJRAR December 2019, Volume 6, Issue 7 [www.ijrar.org](http://www.ijrar.org) (E-ISSN 2348-1269, P- ISSN 2349-5138)
14. Dr Naveen Prasadula Department of Business Management Osmania University (2021) Impact of Foreign Direct Investment (FDI) on Indian Economy.
15. Dr Naveen Prasadula,(2022) Department of Business Management Department Osmania University A Study on Profitable of Futures with the Reference to SBI Bank:?" <http://ignited.in/1/a/305612>" February-2022, ISSN 2249-4510 Volume: 17 / Issue: 1 Publisher: Ignited Minds Journals E-ISSN: 2249 4510, [http://ignited.in/File\\_upload/Download\\_Article/IJITM\\_ISSUE\\_1\\_VOL\\_17\\_305612.pdf](http://ignited.in/File_upload/Download_Article/IJITM_ISSUE_1_VOL_17_305612.pdf)
16. Bhalla, P., Ali, I. S., & Nazneen, A. (2018). A study of consumer perception and purchase intention of electricvehicles. *European Journal of Scientific Research*, 149(4), 362-368.
17. Pierre, M., Jemelin, C., & Louvet, N. (2011). Driving an electric vehicle. A sociological analysis on pioneerusers. *Energy Efficiency*, 4(4), 511-522.
18. Egbue, O., & Long, S. (2012). Barriers to widespread adoption of electric vehicles: An analysis of consumer attitudes and perceptions. *Energy policy*, 48, 717-729.
19. Bhalla, P., Ali, I. S., & Nazneen, A. (2018). A study of consumer perception and purchase intention of electricvehicles. *European Journal of Scientific Research*, 149(4), 362-368.
20. Glerum, A., Stankovikj, L., Thémans, M., & Bierlaire, M. (2014). Forecasting the demand for electric vehicles:accounting for attitudes and perceptions. *Transportation Science*, 48(4), 483-499.
21. Adepetu, A., & Keshav, S. (2017). The relative importance of price and driving range on electric vehicle adoption: Los Angeles case study. *Transportation*, 44(2), 353-373.
22. Rezvani, Z., Jansson, J., & Bodin, J. (2015). Advances in consumer electric vehicle adoption research: A review and research agenda. *Transportation research part D: transport and environment*, 34, 122-136.
23. Gong, S., Ardeshiri, A., & Rashidi, T. H. (2020). Impact of government incentives on the market penetration of electric vehicles in Australia. *Transportation Research Part D: Transport and Environment*, 83, 102353.