

Electric Vehicle Segmentation

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Github link :

https://github.com/Iamthulasiraman/Electric_vehicle_Segmentation

1. Introduction:

The electric vehicle (EV) market in India has witnessed significant growth and development in recent years, driven by a combination of government initiatives, increasing environmental awareness, and technological advancements. This report aims to provide an overview of the current state of the EV market in India, including market trends, challenges, and future prospects.

2. Market Overview:

The EV market in India has experienced rapid growth, with both domestic and international manufacturers introducing a wide range of electric vehicles across various segments, including two-wheelers, three-wheelers, passenger cars, and commercial vehicles. The market has been primarily driven by government incentives and policies aimed at promoting electric mobility and reducing vehicular emissions.

3.Key Market Trends:

Increasing Adoption of Electric Two-Wheelers:

Electric two-wheelers have emerged as the dominant segment in the Indian EV market, owing to their affordability, low operating costs, and suitability for urban commuting. Several startups and established players have launched electric scooters and motorcycles catering to the diverse needs of consumers.

Government Incentives and Subsidies:

The Indian government has introduced various incentives and subsidies to promote the manufacturing and adoption of electric vehicles. These include subsidies on vehicle purchases, tax incentives, and exemptions, as well as incentives for manufacturers to set up EV manufacturing facilities in the country.

Expansion of Charging Infrastructure:

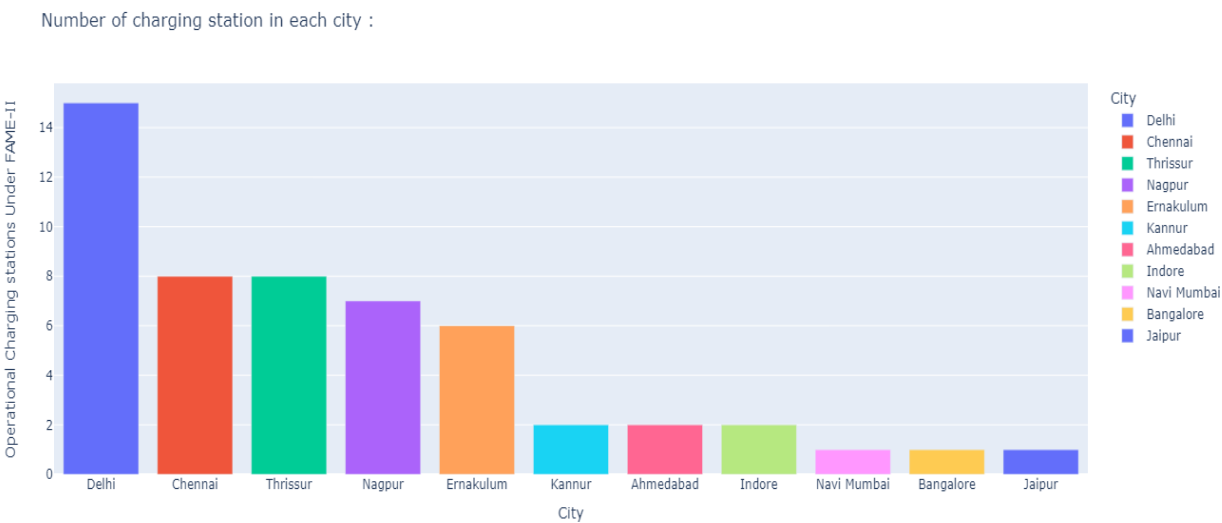
The expansion of charging infrastructure remains a critical factor in promoting the widespread adoption of EVs. Both public and private players are investing in the development of charging stations across major cities and highways to address range anxiety and encourage EV adoption.

4. Challenges:

Despite the significant progress, the EV market in India faces several challenges that need to be addressed for sustained growth:

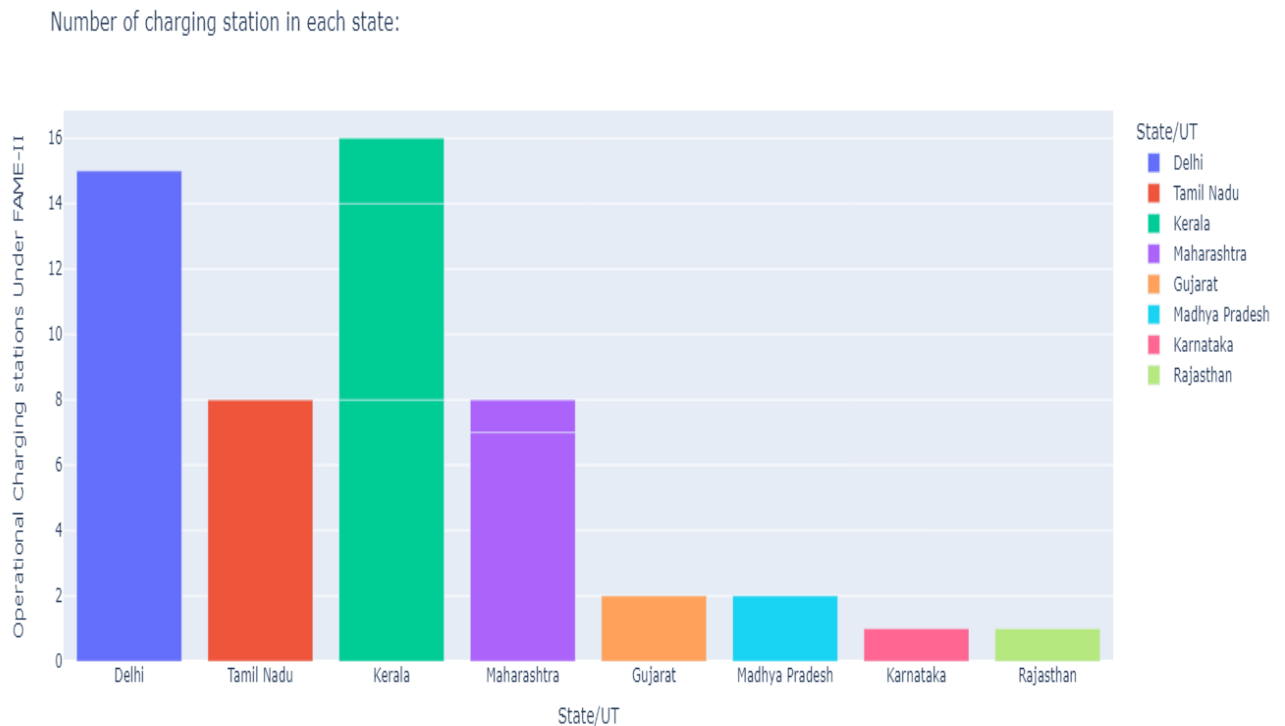
4.1 Limited Charging Infrastructure:

The availability of charging infrastructure, especially in rural and semi-urban areas, remains limited, hindering widespread adoption of EVs.



City wise comparison :

- Capital city Delhi has more number of charging stations
- Then Chennai and thrissur has the second more number of charging stations
- nagpur has the third more number of charging stations



State wise comparison:

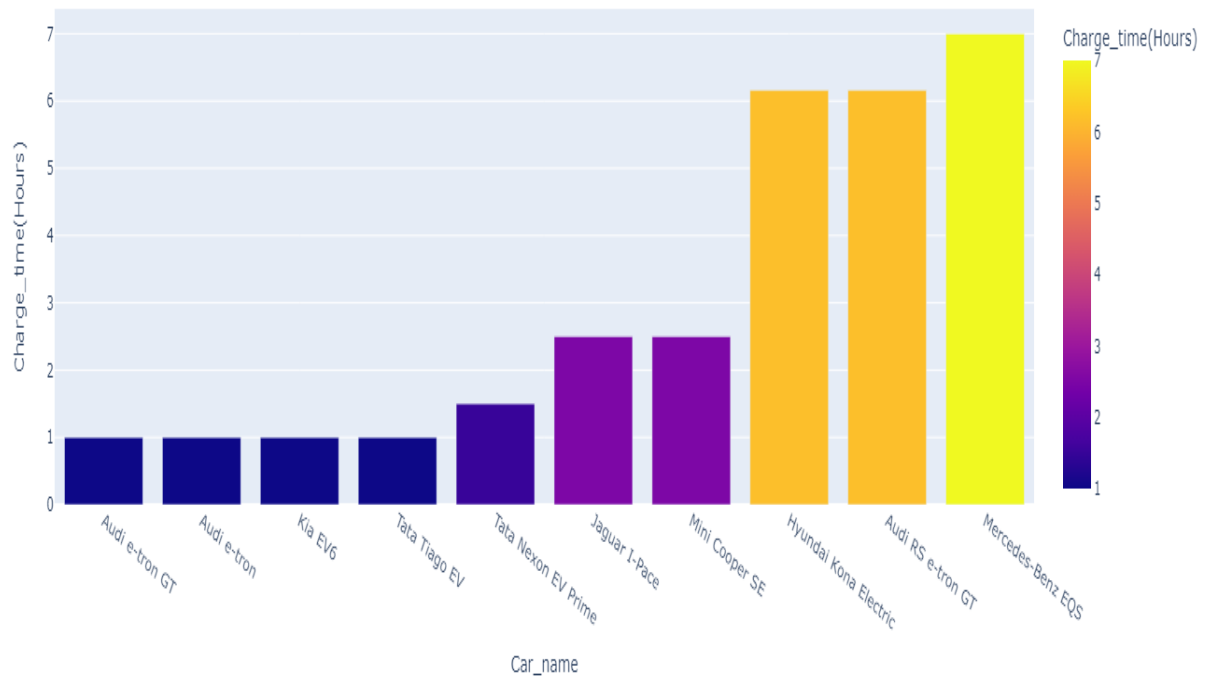
- kerala has more number of charging stations
- Delhi has second more number of charging stations

South Indian states like Kerala ,and Tamil nadu has more charging stations in india compare to other states.

EV's with less Charging Time :

- **Audi e-trone GT , Audi e-tron , Kia Ev6, TATA Tiago EV** is the EV which takes less time for charging, it takes just One hour for charging

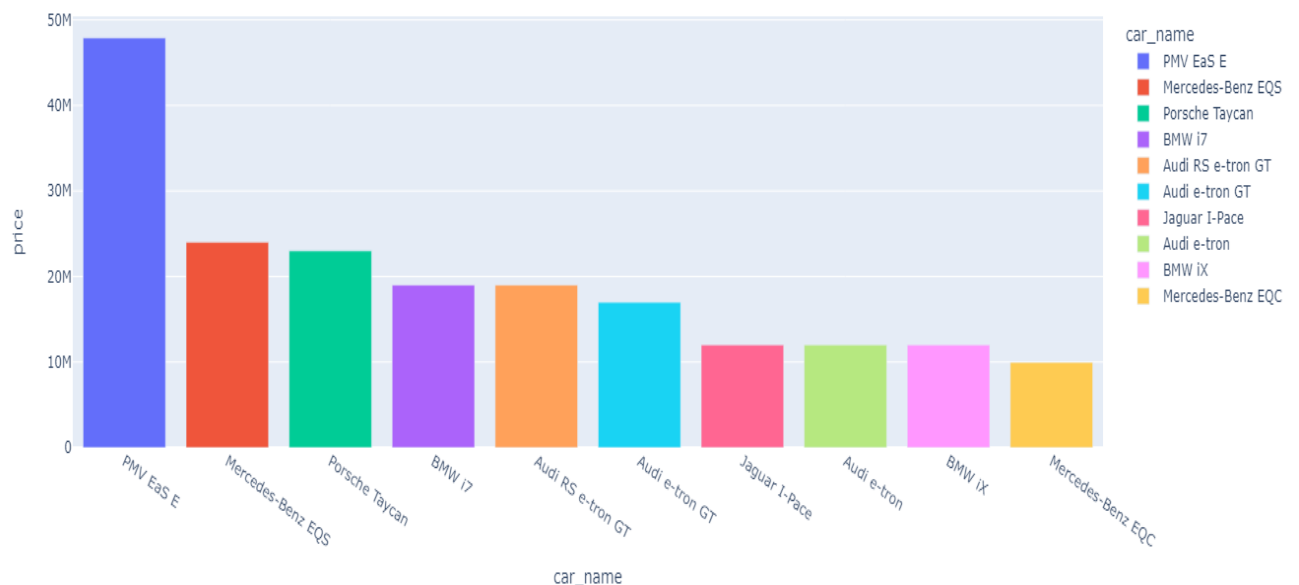
top 10 cars taking less time for Charging



4.2 High Initial Cost:

The high upfront cost of electric vehicles remains a major barrier to adoption for many consumers, especially in price-sensitive segments such as two-wheelers and three-wheelers.

top 10 costliest Ev Cars



Four wheeler EV are costliest one among the electric vehicle but they will give better performance and safety compare to other types of electric vehicles

PMV Ease E is the costliest electric vehicle followed by Mercedes – Benz EQS.

Top 5 Ev based on their features and with Low Price

- Strom Motors R3
- MG Comet EV
- Mahindra E Verito
- Tata Tiago EV
- Citroen eC3

5. Behavioural segmentation:

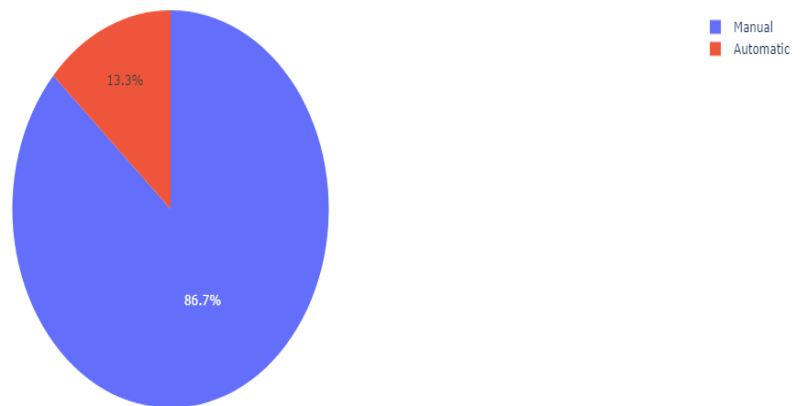
Customers used to buy the cars based on the design , comfort , Performance, Fuel_Economy, Value for Money, and Rating of the car.

- 88% people choose Electric vehicle based on Comfort
- 86% people choose Electric vehicle based on Performance and Fuel Economy
- 76% people choose Electric vehicle because it is value Value for Money
- 84% people given maximum rating for Electric vehicle

Design is purely based on the companies Perspective, so it we didn't consider it for analysis

Customers are most likely to buy cars with Automatic Transmission Than Manual Transmission

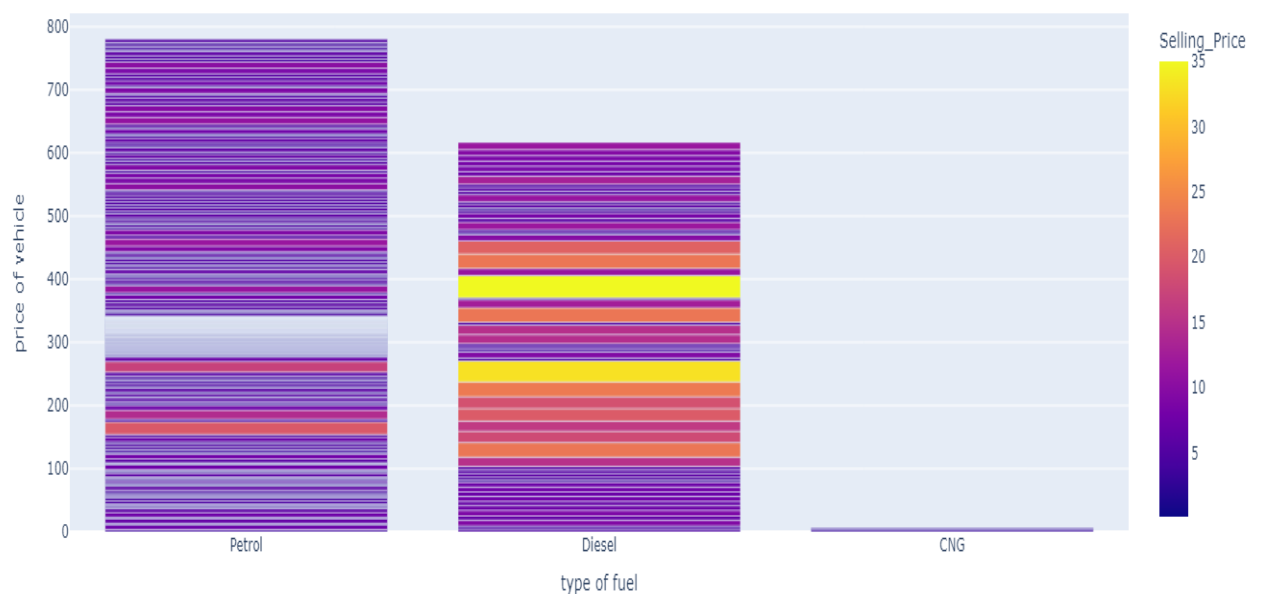
type of transmission

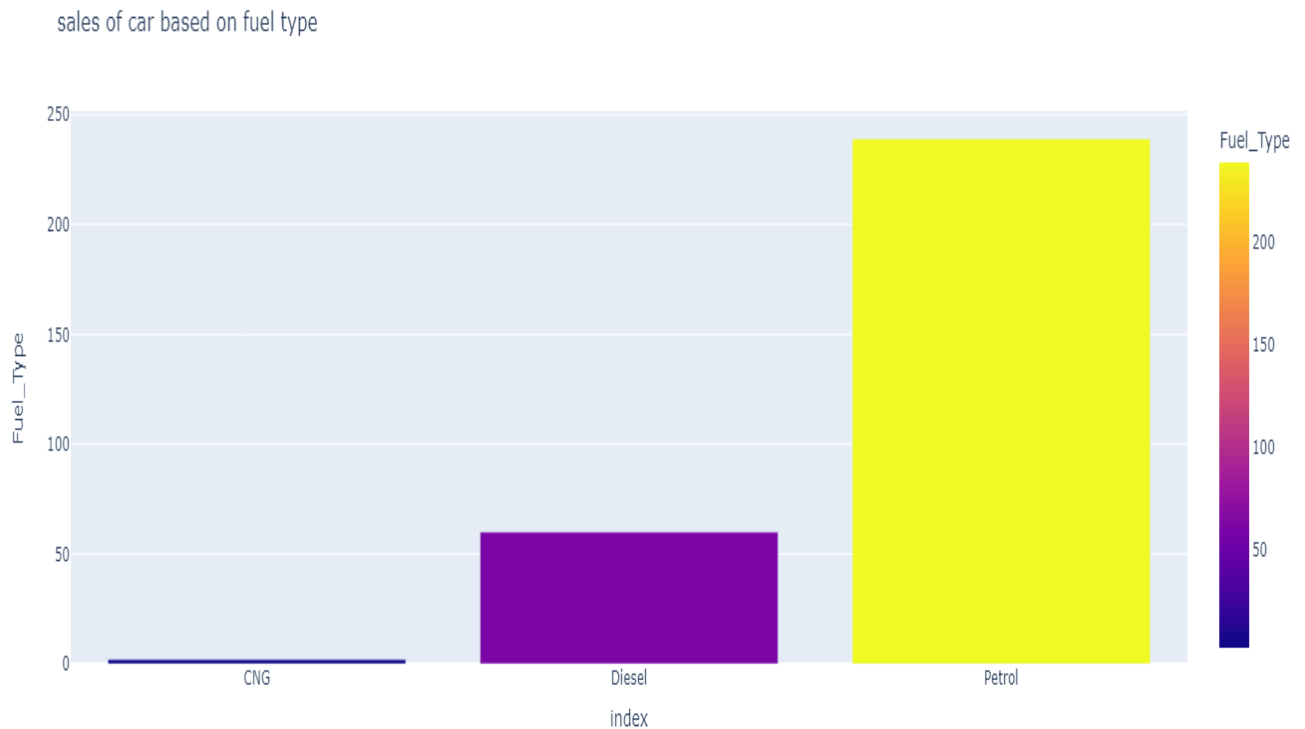


6. Analysing the Petrol and Desel vehicle Data:

Most people are shows interest in buying the Petrol Cars , it is because of the Easy availability of Fuel and its performance .Price is also a reason because the Price of the Petrol Cars are reasonable compare to diesel cars.

Price of car based on type of fuel

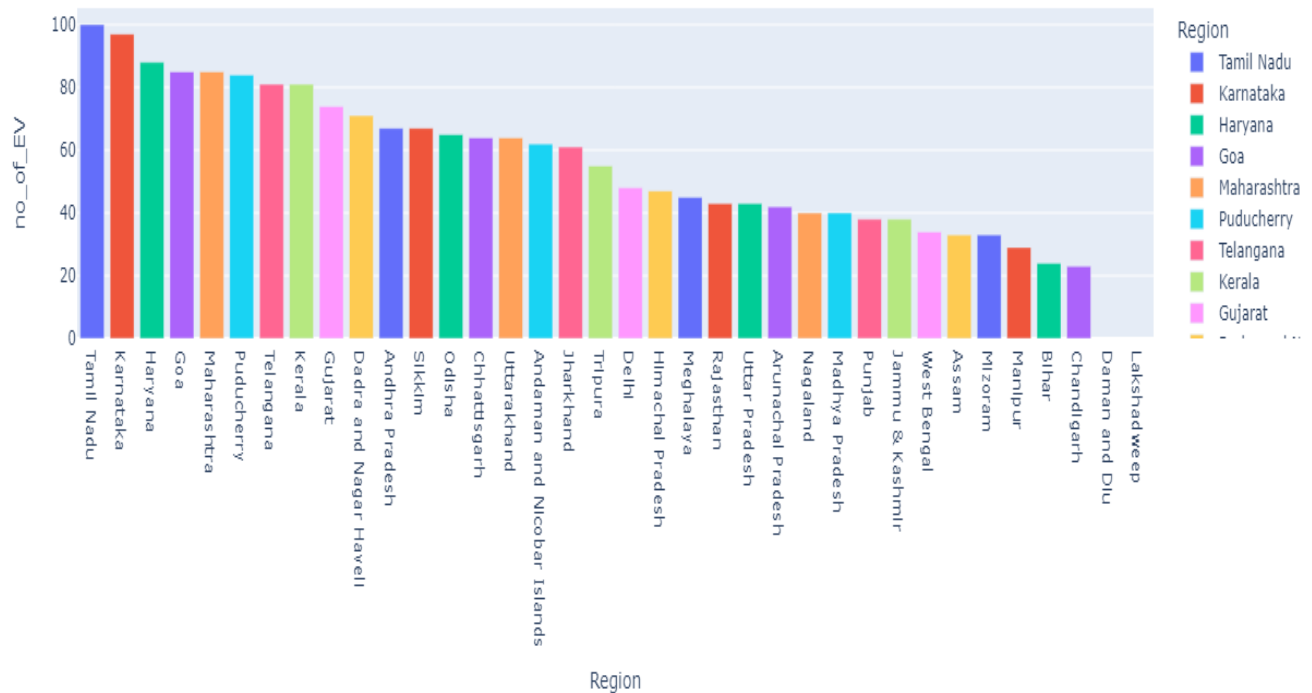




7. Geographic Segmentation :

- We analyzed that south India region is more technologically advanced with good availability of charging infrastructure and Electric vehicles becoming more popular.
- Big Brands who already launched their products and have their manufacturing plants in south India. It is possible that we can create space for our EVs but it will be very difficult
- The best region to start Ev startup is Chennai ,Tamilnadu and Kerala
- North Eastern states have growing popularity specially Sikkim, this is a good place for us to create space for our EVs

Number of ev's in each state



8.Conclusion:

- Ev market have significant growth in recent years, and creating an Startup in Ev market is a wise decision .
- To Reach our Product to customers , first we should launch our products in a reasonable Price, because by behaviour understanding of people , price of the car plays a important role in buying of car
- To Create a Electric vehicle startup South Indian states is the best option, because these states have the potential customers who are buying cars and other vehicles compare to other staes
- Furthermore south Indian states have majority of the charging stations in india.

