

## **1 INTRODUCTION**

### **1.1 Overview**

The business requirements for analyzing the performance and efficiency of Electric cars include identifying KPIs, comparing performance across different parameters and brands also, identifying patterns and trends over time, identifying affecting factors, creating interactive dashboards and reports, identifying areas for improvement, making data-driven decisions, comparing to industry average and creating forecasting models for future performance. The ultimate goal is to gain insights and improve performance through data visualization techniques.

### **1.2 Purpose**

The objective of this project is to analyze the performance and efficiency of electric cars using Tableau data visualization application. We will analyze data from various sources including car manufacturers, charging stations, and other industry reports.

## **2 Problem Definition & Design Thinking**

### **2.1 Empathy Map**



## Ideation - Visualization Tool for Electric Vehicle Charge and Range Analysis

We have checked with some of the users like our relatives, friends. Based on their response below mural is created

### Says

What have we heard them say?  
What can we imagine them saying?

Are EV vehicles safer?

How much is the price of EV compared to normal vehicles?

Which locations has charging points near to me?

How long does it take to charge the vehicle?



### Thinks

What are their wants, needs, hopes, and dreams? What other thoughts might influence their behavior?

Looking for low priced vehicles and safest

High range EV vehicles

EV vehicles that get charged very fast

More charging points near their location



"They ask first friends, brother about EV advantages & then they decided get that"

They check for feasibility and then get up of different EV options

Checking for charging stations on the roads they usually go

Making Test drive



They fear what if charge gets over while driving

Charging waiting time

Worried about Battery lifespan

very less charging points near their area

### Does

What behavior have we observed?  
What can we imagine them doing?

### Feels

What are their fears, frustrations, and anxieties? What other feelings might influence their behavior?



## Electric Cars Analytics Dashboard

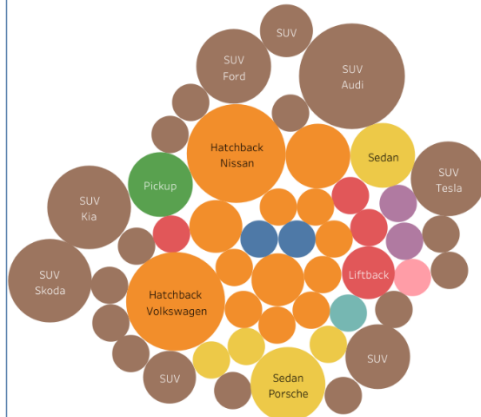
Different brands of EV Cars in India

9

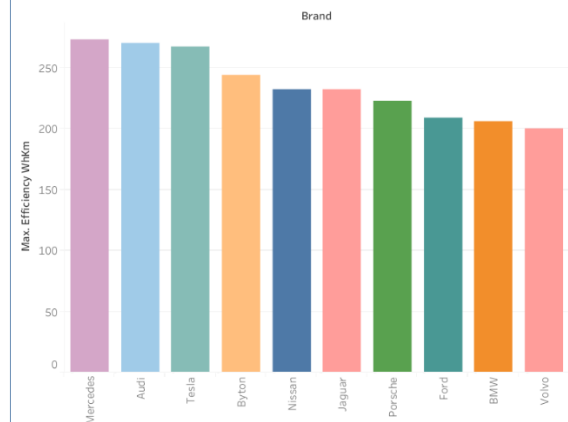
Different brands of EV Cars globally

32

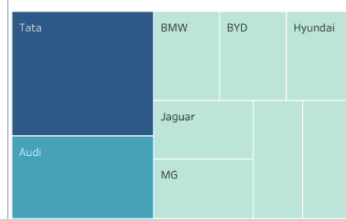
Brands according to Bodystyle



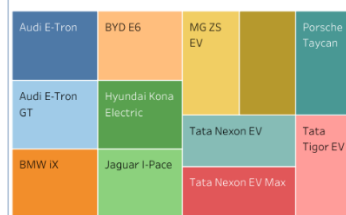
Top 10 most efficient EV Brands



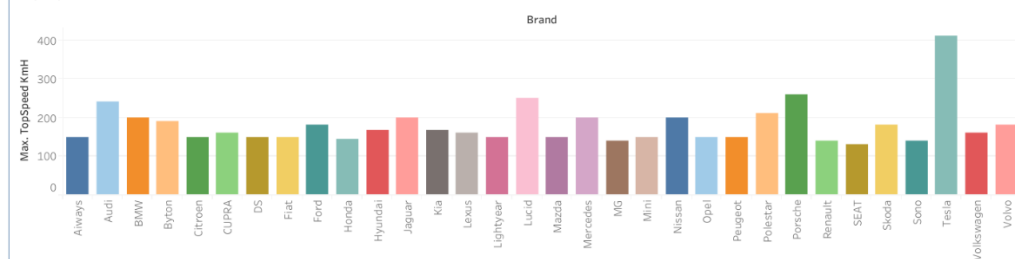
Brand filtered by PowerTrain type



Different EV cars in India

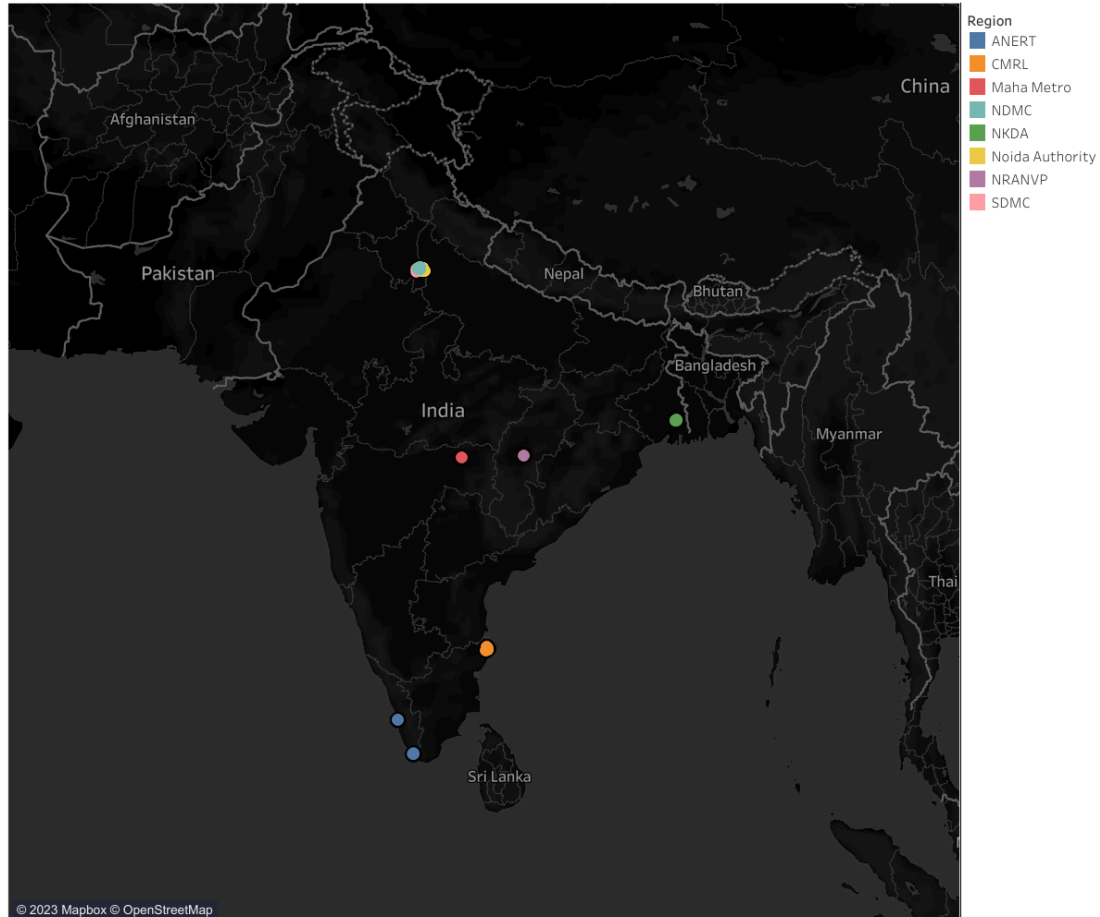


Top speed for different Brands



## Story of Electric Cards in India

Charging Stations in India	Charging Stations in Region & Type	Price of Electric Cars by Different Brands	Different Brands & Number of models
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### 4 ADVANTAGES & DISADVANTAGES

Advantages:

- Easy to get details of Electric cars details in one place
- Users can view the dashboard and make decision before buying car

Disadvantages

- Limited data

### 5 APPLICATIONS

- Automotive Industry
- Energy Industry

### 6 CONCLUSION

In conclusion, analyzing the performance and efficiency of electric cars using data visualization techniques is a valuable tool for gaining insights into the factors affecting their performance and making data-driven decisions to improve their efficiency.

## **7 FUTURE SCOPE**

- comparison with non-electric cars
- Integrating with real time data

## **8 APPENDIX**

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