

# Visualisation Tool For Electric Vehicle Charge and Range Analysis

## 1.INTRODUCTION

### 1.1 Overview

A vehicle that can be powered by an electric motor that draws electricity from a battery and is capable of being charged from an external source and have an electric motor instead of an internal combustion engine.

The Electric Vehicle (EV) is not new, but it has been receiving significantly more attention in recent years. Advances in both EV analytics and battery technologies have led to increased automotive market share. However, this growth is not attributed to hardware alone. The modern mechatronic vehicle marries electrical storage and propulsion systems with electronic sensors, controls, and actuators, integrated closely with software, secure data transfer, and data analysis, to form a comprehensive transportation solution. Advances in all these areas have contributed to the overall rise of EV's, but the common thread that runs through all these elements is data analytics.

### 1.2 PURPOSE

Vehicle power electronics primarily process and control the flow of electrical energy in hybrid and plug-in electric vehicles, including plug-in electric vehicles. They also control the speed of the motor, and the torque it produces.

## Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

### Build empathy

The information you add here should be representative of the observations and research you've done about your users.

[View sample template](#)

**THINK**  
What are you thinking about?  
What are you observing?

**FEEL**  
How do you feel?  
What are your emotions, needs, hopes, and desires? What are you worried about?

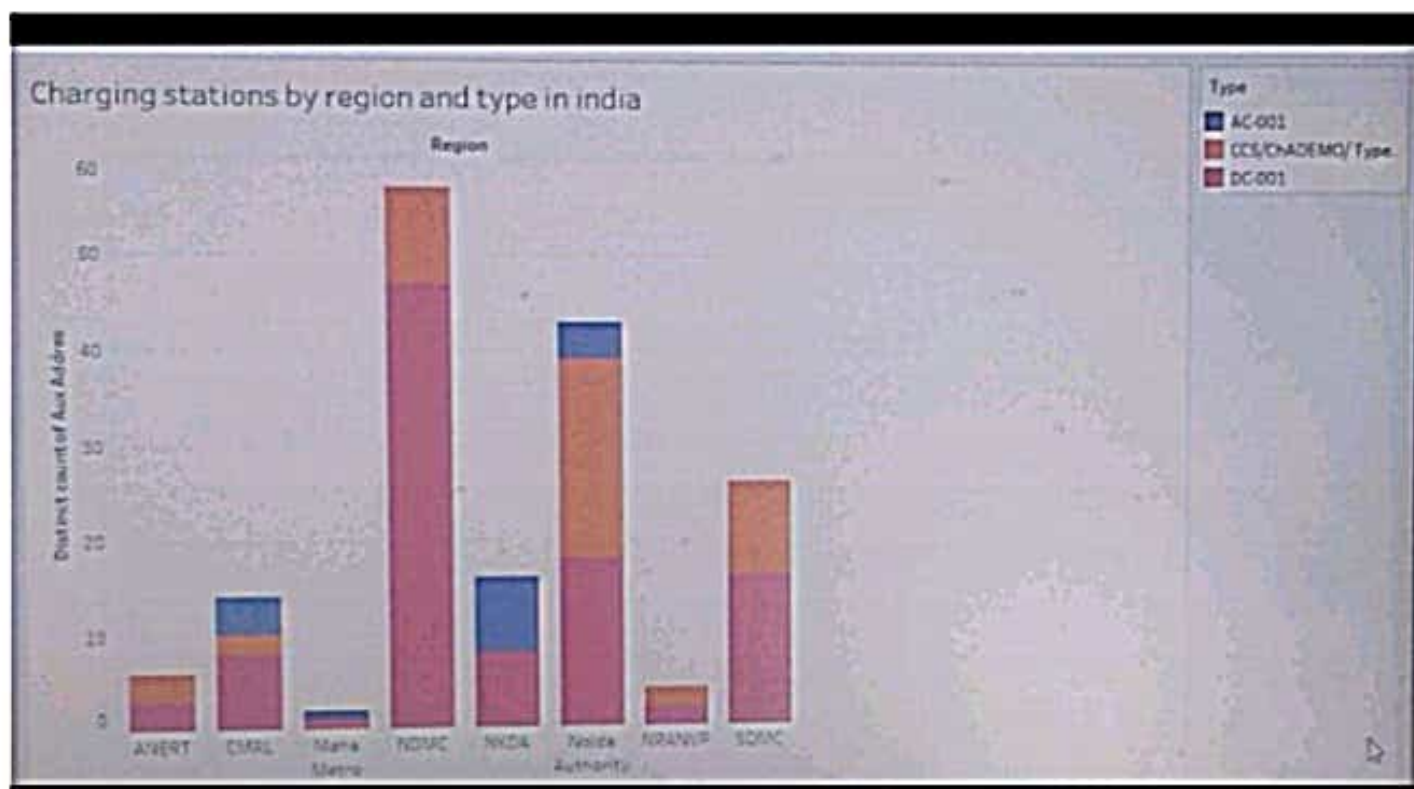
**DO**  
What are you doing?  
What are you not doing?

**SAY**  
What are you saying?  
What are you not saying?

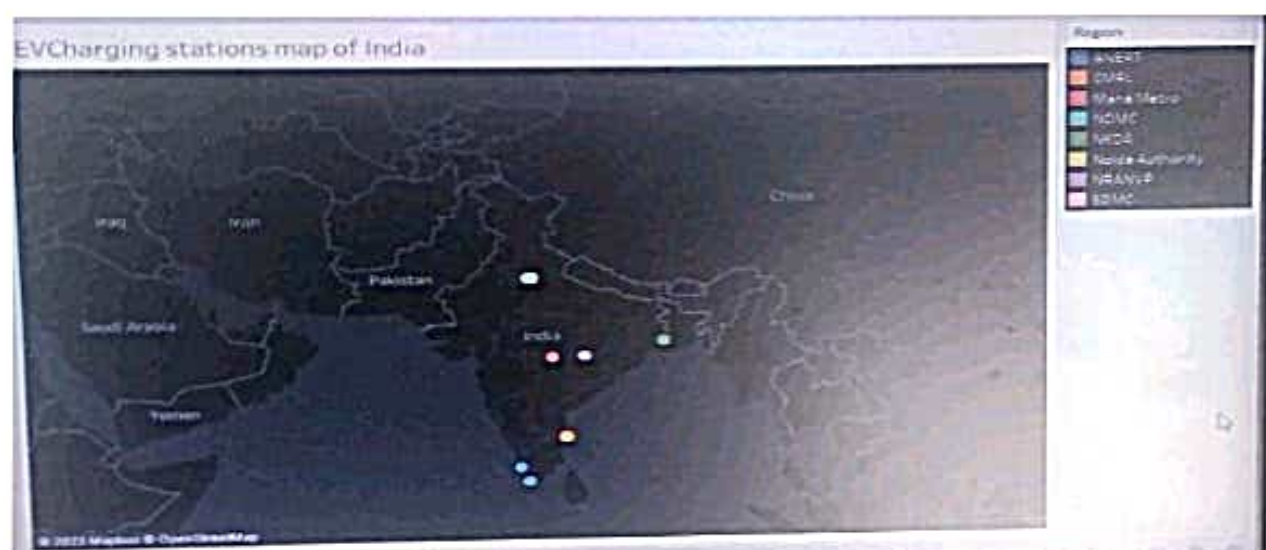
The figure consists of seven hand-drawn diagrams illustrating the steps of a Value Stream Map (VSM) process. The diagrams are arranged in a sequence from left to right, showing the flow of materials and information.

- Diagram 1:** Shows a customer (Kunde) and a supplier (Lieferant) connected by a line. A circle with a 'V' is labeled 'VSM'.
- Diagram 2:** Shows a customer (Kunde) and a supplier (Lieferant) connected by a line. A circle with a 'V' is labeled 'VSM'.
- Diagram 3:** Shows a customer (Kunde) and a supplier (Lieferant) connected by a line. A circle with a 'V' is labeled 'VSM'.
- Diagram 4:** Shows a customer (Kunde) and a supplier (Lieferant) connected by a line. A circle with a 'V' is labeled 'VSM'.
- Diagram 5:** Shows a customer (Kunde) and a supplier (Lieferant) connected by a line. A circle with a 'V' is labeled 'VSM'.
- Diagram 6:** Shows a customer (Kunde) and a supplier (Lieferant) connected by a line. A circle with a 'V' is labeled 'VSM'.
- Diagram 7:** Shows a customer (Kunde) and a supplier (Lieferant) connected by a line. A circle with a 'V' is labeled 'VSM'.

### 3.1 charging stations by region and type in India



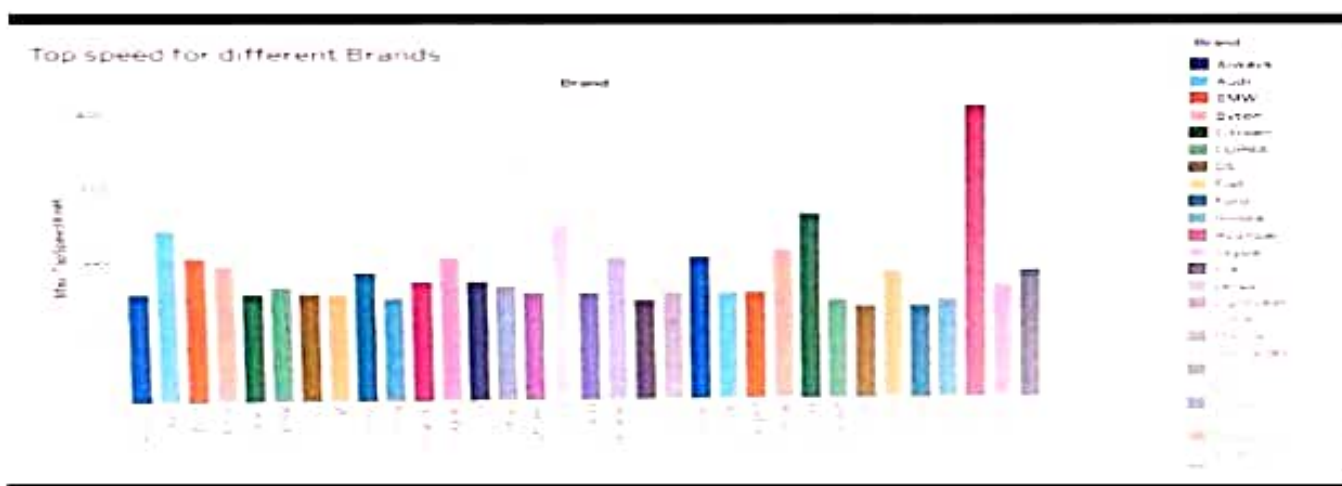
### 3.2 EV Charging stations map of India



### 3.3 Different EV cars in India

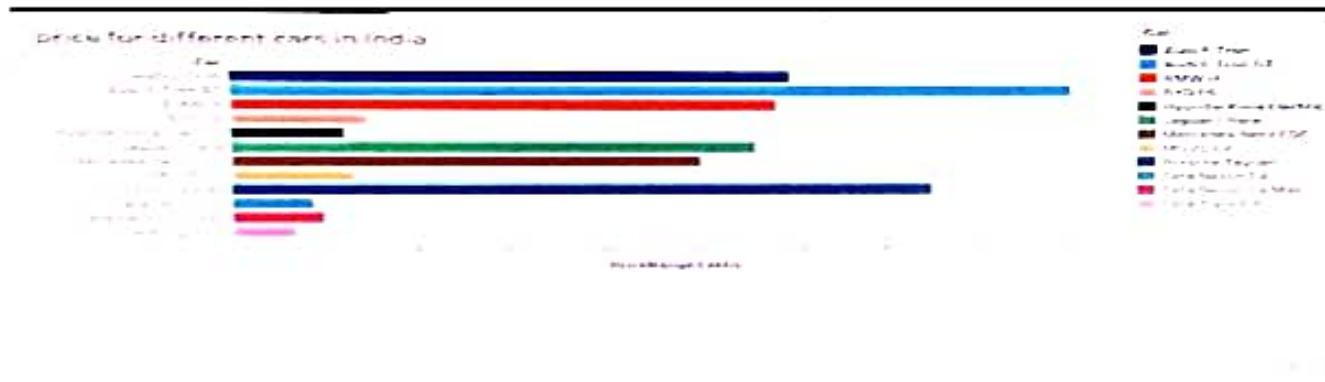


### 3.4. Top speed for different brands

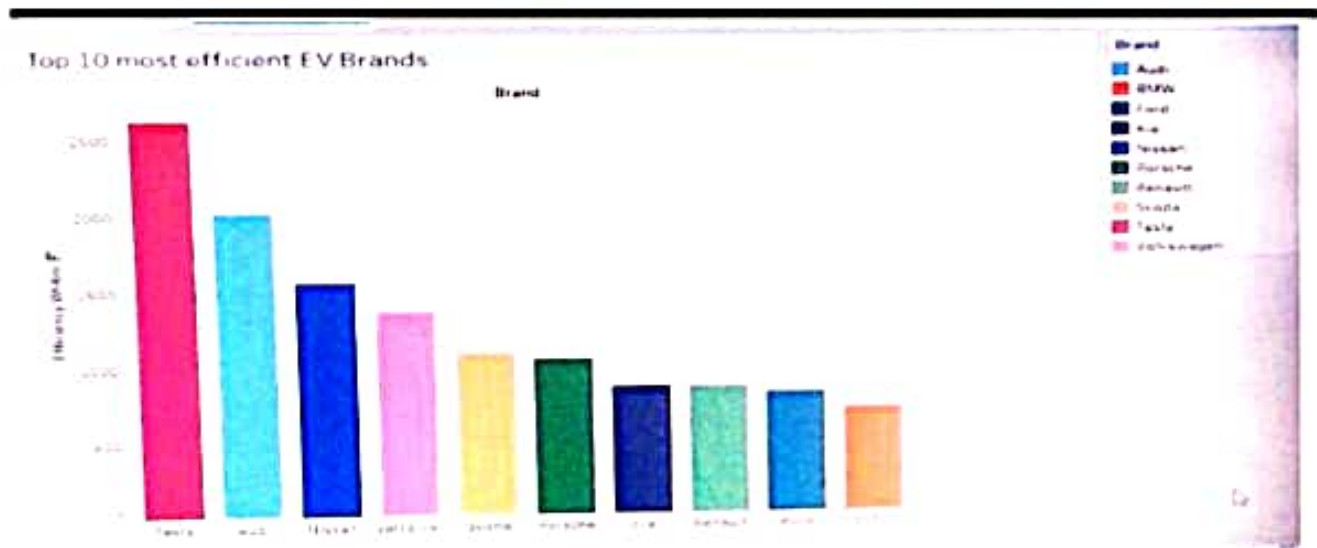




### 3.5 Price for different Cars in India



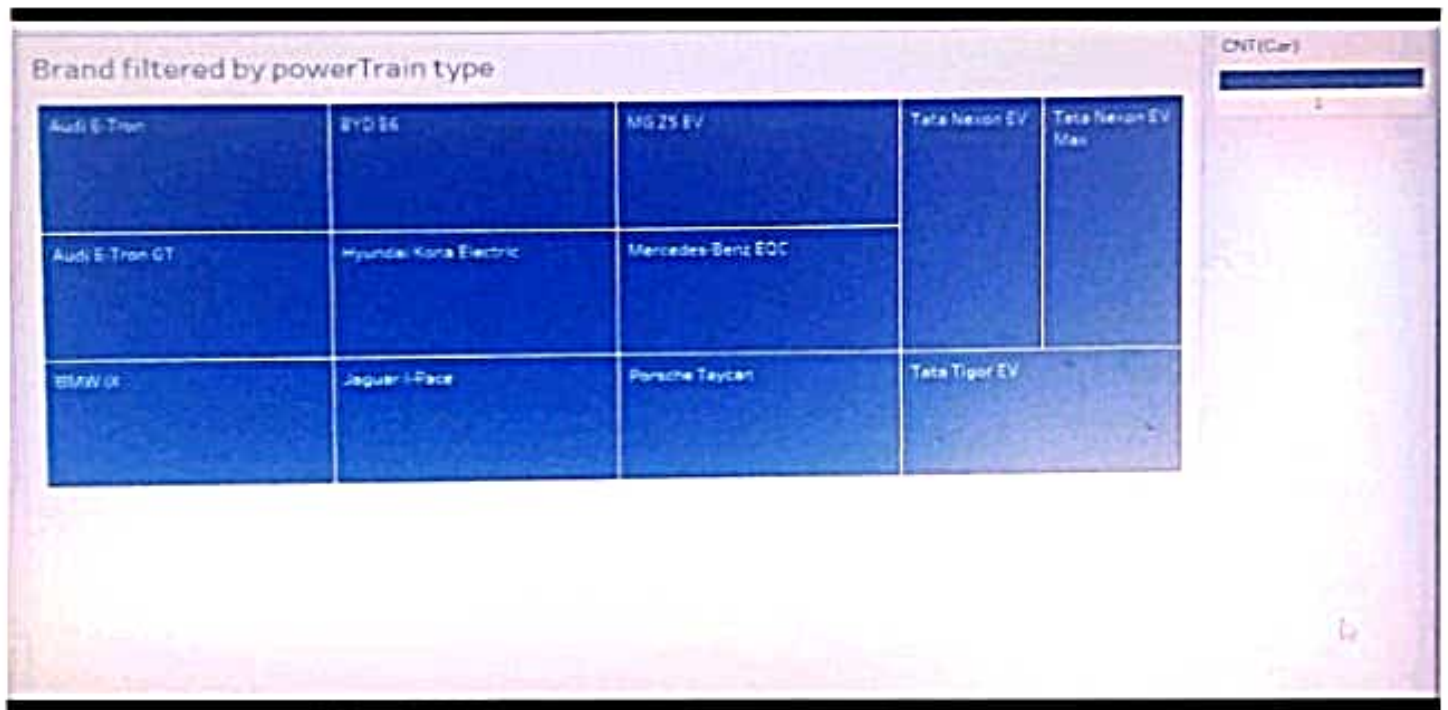
### 3.6. Top 10 most efficient EV Ca



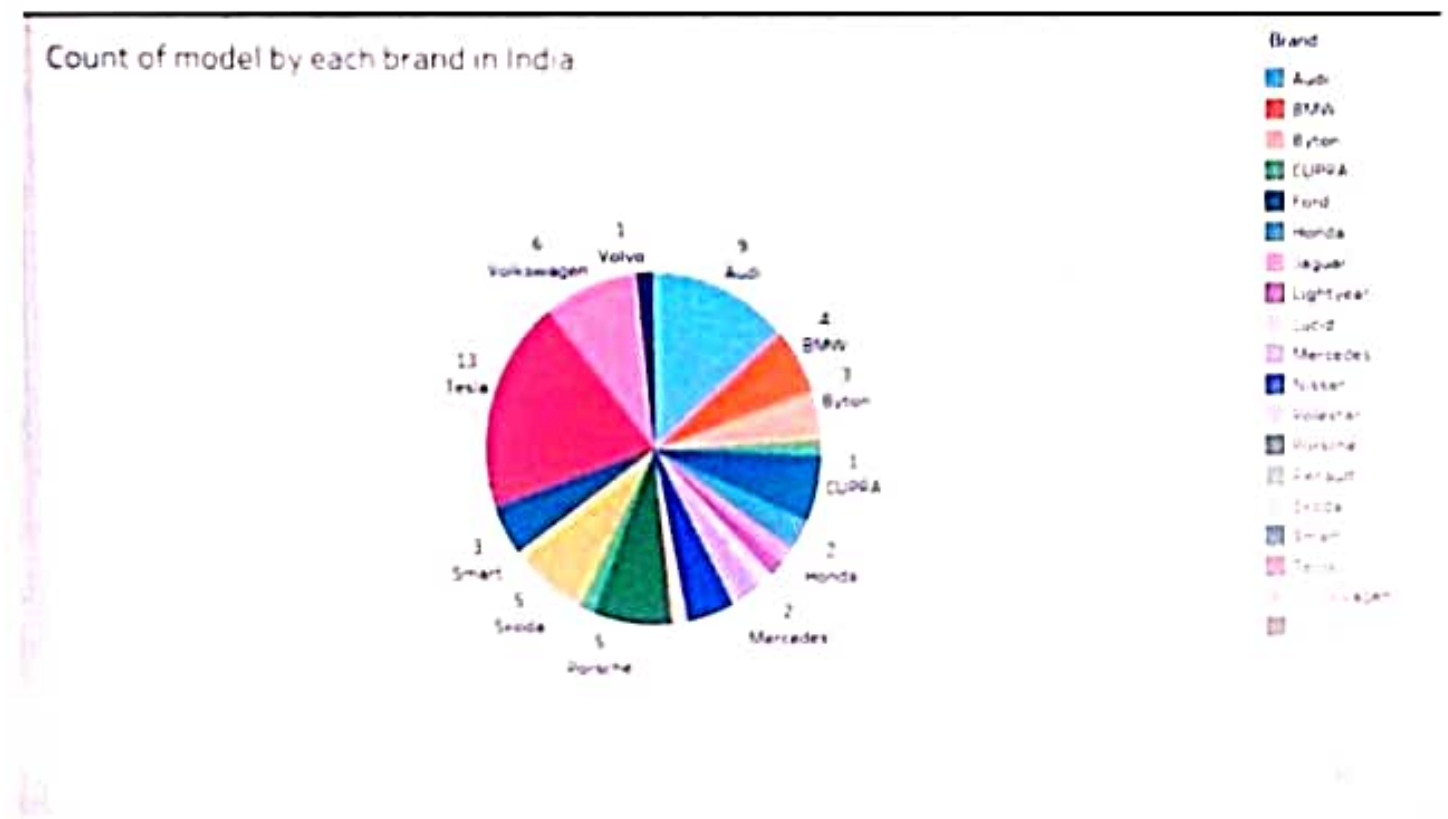
### 3.7 .Brands according to Bodystyle



### 3.8.Brand filtered by power train type



### 3.9. Count of model by each brand in India



### 3.10. Different brands of Electric cars globally

Different brands of Electric cars globally

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### 3.11. Different brands of EV cars in India

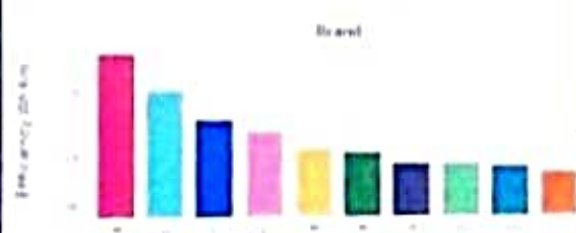
Different brands of Ev cars in india

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# Electric Cars Analytic Dashboard



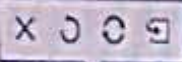
Top 10 most efficient EV Brands



Brands according to Bodystyle



## Story 1



Charging Stations  
India

Charging Stations by  
region & type

Price of Electric cars  
by different brands

Count of model by  
each brand in India



- Region
- ANERT
  - CMRL
  - Maha Metro
  - NDMC
  - NKDA
  - Noida Authority
  - NRAM/P
  - SDMC

Different brands of Electric cars

Different brands of Ev cars in India

Dashboard1

Story 1

Story 1



#### 4.ADVANTAGES AND DISADVANTAGES:

##### Advantages:

- 1.Eco -friendly.
- 2.Renewable energy source.
- 3.Less noise and smoother motion.

##### Disadvantages:

- 1.High initial cost.
- 2.Charging station limitations.
3. Recharging takes time.

#### 5.APPLICATIONS

Electric vehicles use electricity to charge their batteries instead of using fossil fuels like petrol or diesel. Electric vehicles are more efficient, and that combined with the electricity cost means that charging an electric vehicle is cheaper than filling petrol or diesel for your travel requirements.

#### 6.CONCLUSION

Although electric vehicle manufacturers must solve the hurdles that are currently preventing people from purchasing, the future is clear: EVs will outlast gas-powered automobiles in the long run. Both GM and Nissan declared in January 2021 that they will go all-electric by the 2030s.

#### 7. FUTURE SCOPE

The Government wants India to be a 100%, electric vehicle nation by the year 2030. Under the new plan of the government, every car which will get sold in India from 2030 will be electric.