

Visualization Tool For Electric Vehicle Charge And Range Analysis

1.1. INTRODUCTION:

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.

The new EV's are combined Electrical storage and propulsion systems with electronic sensors, controls, and actuators, integrated closely with software, secure data transfer to form a comprehensive transportation solution.

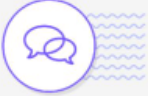
1.2. PURPOSE:

In this project we have analyzed the various aspects of visualization tool for electrical vehicle charge and range analysis. The outcome can be used to know about the electric vehicles brands, top most ranges and brands in India.

2. PROBLEM DEFINITION AND DESIGN THINKING

2.1. Empathy Map:


Template



Retrospective

Use this framework to reflect on recent work. This simple structure is useful both alone and in groups.

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Reflect on the topic

Working silently and individually, have each person create a few sticky notes in all four quadrants below for about five minutes. With the remaining time, discuss notes in each quadrant.

What went well?

What should we keep doing?
What should we reinstate?
Where did we make progress?

TOPIC

visualization tool for electric vehicle charge and range analysis

What went poorly?


Where did we have problems?
What was frustrating to us or others?
What held us back?


What ideas do you have?

What ideas do you have for future work together?
Where do you see opportunities to improve?
What has untapped potential?

How should we take action?

What do you believe we should do next?
What specific things should we change?
What should extend beyond this meeting?







Need some inspiration?

See a finished version of this template to refresh your work.

[Open example](#)



 Edit with WPS Office

2.2 BRAINSTORMING MAPPING:

1

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

PROBLEM

Electric vehicles take time to full charge

Key rules of brainstorming

To run an smooth and productive session

Stay in topic.

Encourage wild ideas.

Defer judgment.

Listen to others.

Go for volume.

If possible, be visual.

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil [or edit] to select [or scan] to start drawing!

Person 1

Use solar panels to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.
Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.
Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.

Person 2

Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.
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Person 3

Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.
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Person 4

Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.
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Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.	Use a solar panel to charge the car while it's parked.

Person 5

Person 6

Person 7

Person 8

3 Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

20 minutes

Tip

Also collaborate with sticky notes to make it easier to find better answers and categorize them into ideas as they appear.

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4 Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

Importance

Feasibility

Regardless of team importance, when ideas are more feasible they are in (blue, green, yellow, orange, red).

5 After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

Quick add-ons

- Share the mural**
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.
- Export the mural**
Export a copy of this mural as a PNG or PDF (up to 1024x1024 pixels, include in white or color if you desire).

Keep moving forward

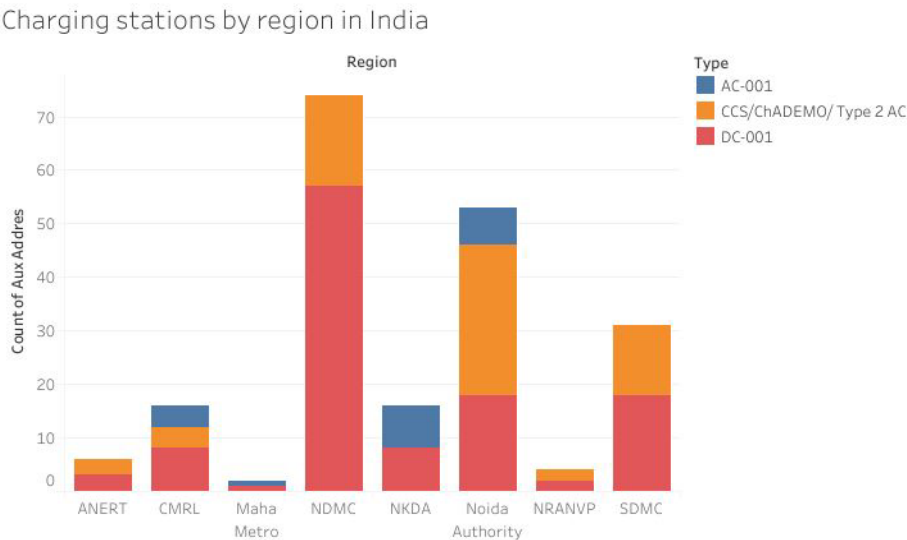
- Strategy blueprint**
Define the components of a new idea or strategy.
[Open the template](#)
- Customer experience journey map**
Understand customer needs, motivations, and obstacles for an experience.
[Open the template](#)
- Strengths, weaknesses, opportunities & threats**
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.
[Open the template](#)

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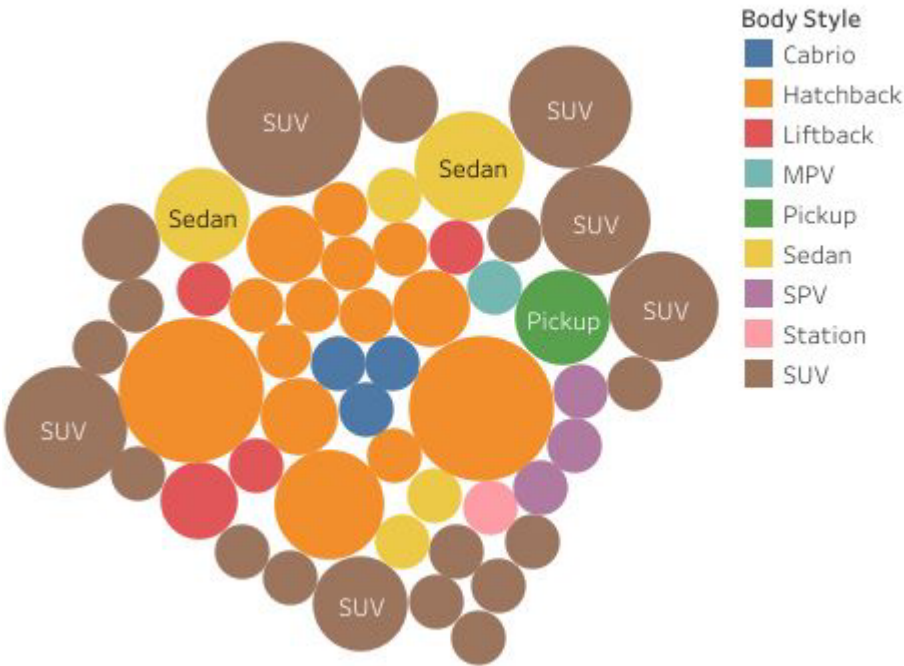
3. RESULT:

1. Electric vehicles are mostly used in other countries when compared to india.
2. Electric vehicles are more efficient.

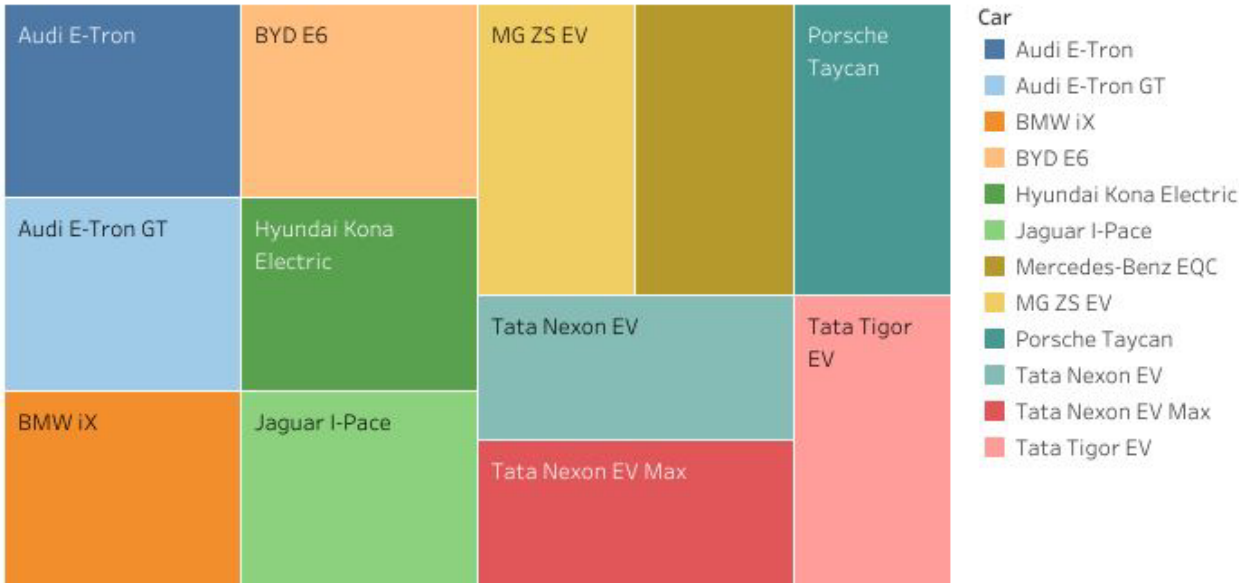
3. Electrical vehicles take less fuel wastage.



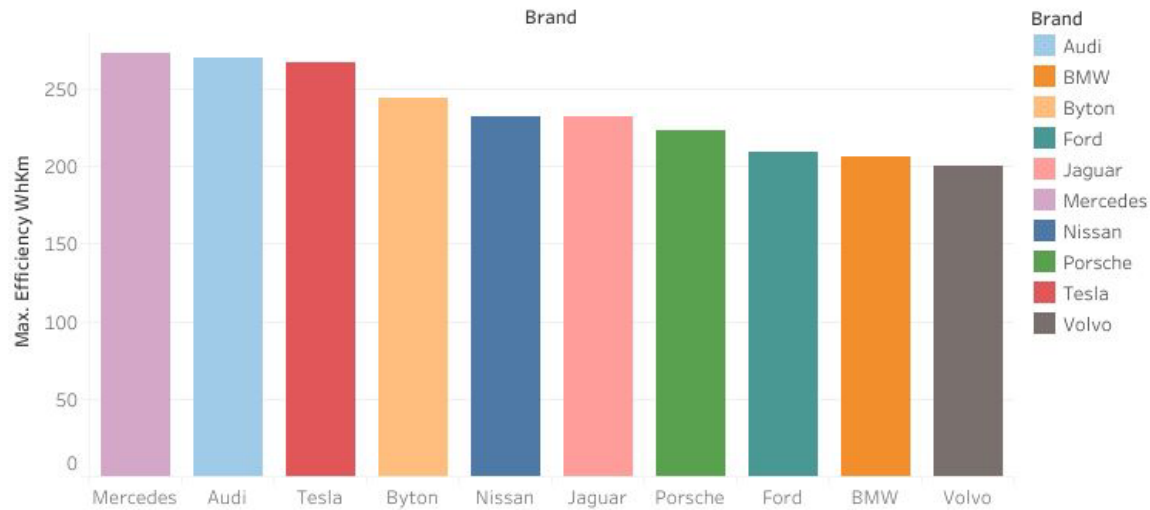
brands according to body style



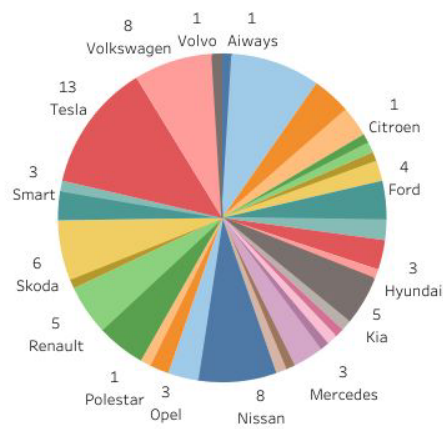
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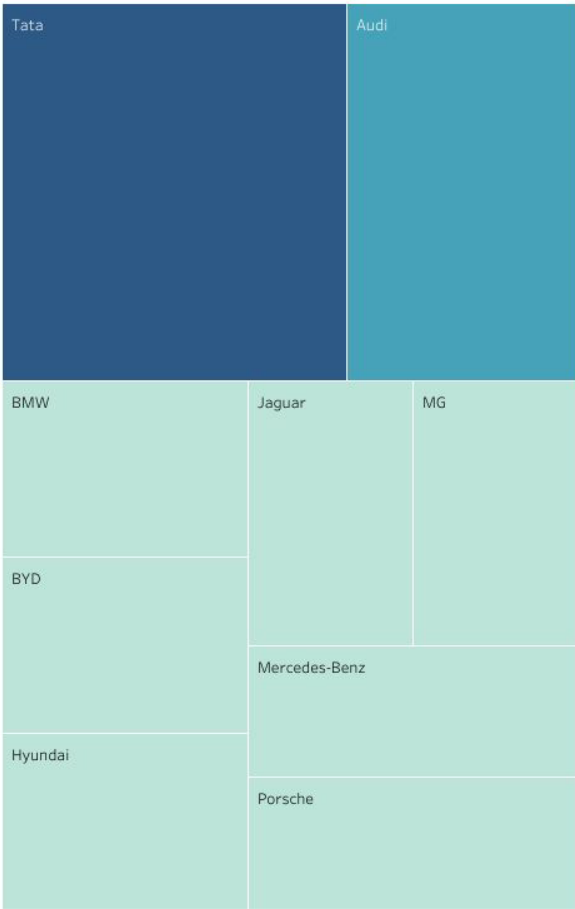
Top 10 most efficient brands



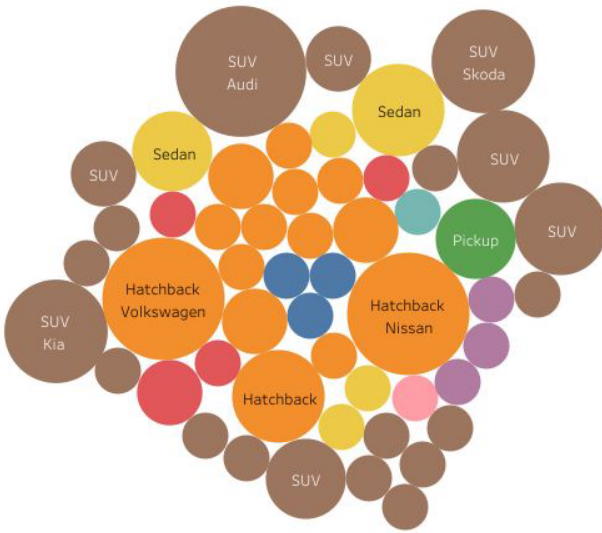
Brand filtered by power train type



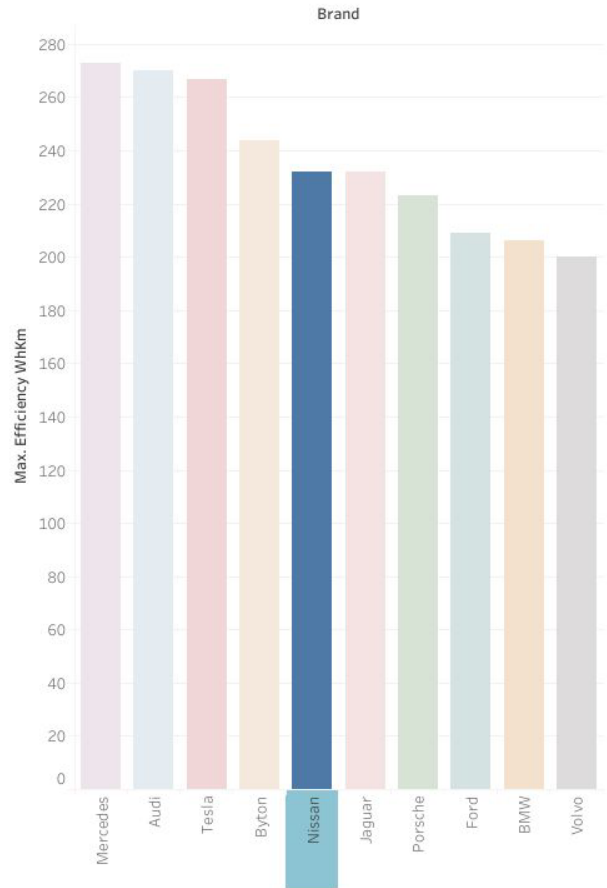
Different EV cars in India



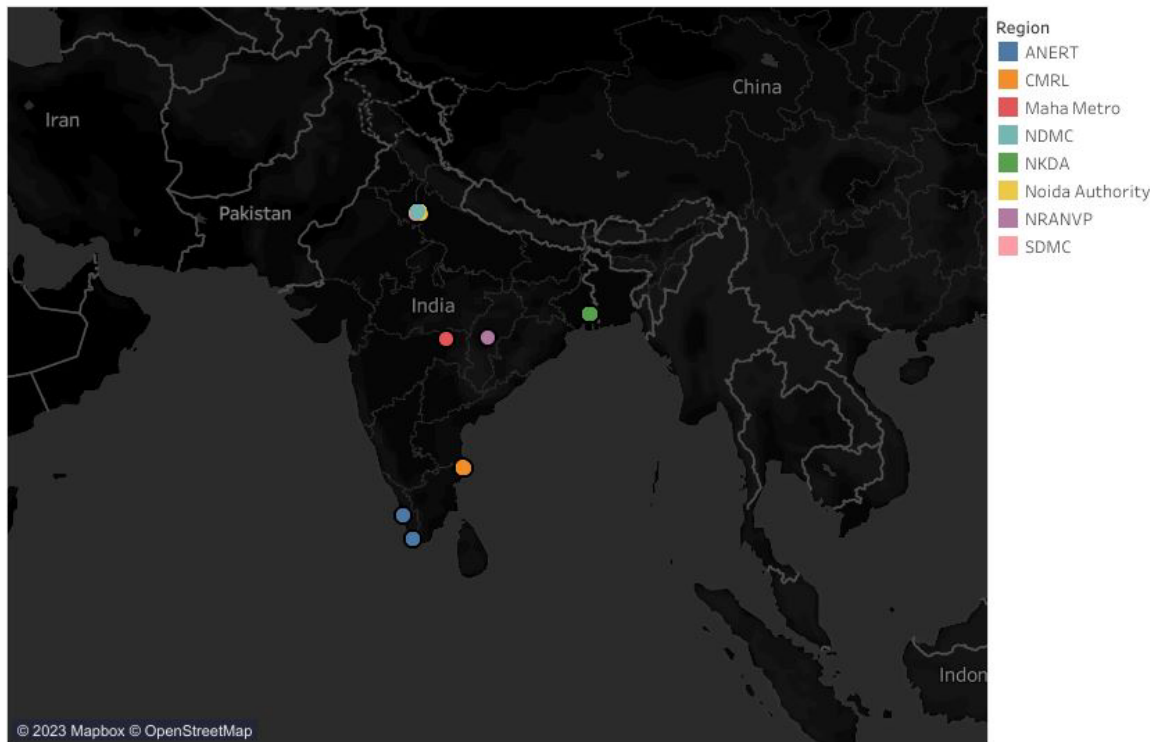
brands according to body style



Top 10 most efficient brands



story1



4. ADVANTAGES AND DISADVANTAGES:

4.1. ADVANTAGES:

1. Running cost of electrical is lower than diesel vehicle.
2. Electric vehicles have very low maintenance cost.
3. Driving an electric vehicle can help you reduce your carbon footprint.



4.2. DISADVANTAGES:

1. Battery life span concerns.
2. Low top speeds.
3. More expense to buy.
4. Long charging times.
5. Environmental impacts.

5. APPLICATIONS:

It is used in the electric motors, batteries, invertors, wiring and in charging stations because of its durability, reliability and superior electrical conductivity.

6. CONCLUSION:

The basic conclusion is that when it comes to climate change and air quality, electric cars are clearly preferable to petrol or diesel cars. Contrary to some public doubts and uncertainties about the environmental benefits of electric cars, the science is increasingly clear.

