VISULAIZATION TOOL FOR ELECTRIC VEHICLE CHARGE AND RANGE ANALYSIS

SUBMITTED BY

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INTRODUCTION

1.1 Overview

In this project we analyze about electric vehicle charges and their battery technologies had led to increased automotive market share and also how to integrated closely with software and analyze data. Electric vehicles are propelled by electromagnetism. These vehicles use electricity typically stored in a battery to power an electric motor. EV charging involves supply to direct current Dc to the battery pack. All Electric vehicles travel about 100 to 400 miles on a single charge. They are powered by an electric motor that uses energy stored in a battery.

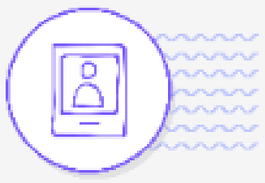
1.2 Purpose

Our project is useful for the people to know more about advance electric vehicles and their electrical storage and propulsion system with electronic sensors, controls, actuators and data analysis to form a comprehensive transportation solution. An electric vehicles charging station is equipment that connects an electric vehicle to a source of electricity to recharge electric cars, neighborhood electric vehicles and plug in hybrids. Fully electric vehicles have zero tailpipe emissions and are much better for the environment.

2. PROBLEM DEFINITION AND DESIGN THINKING

2.1 EMPATHY MAP

Template



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.

Share template feedback

Build empathy

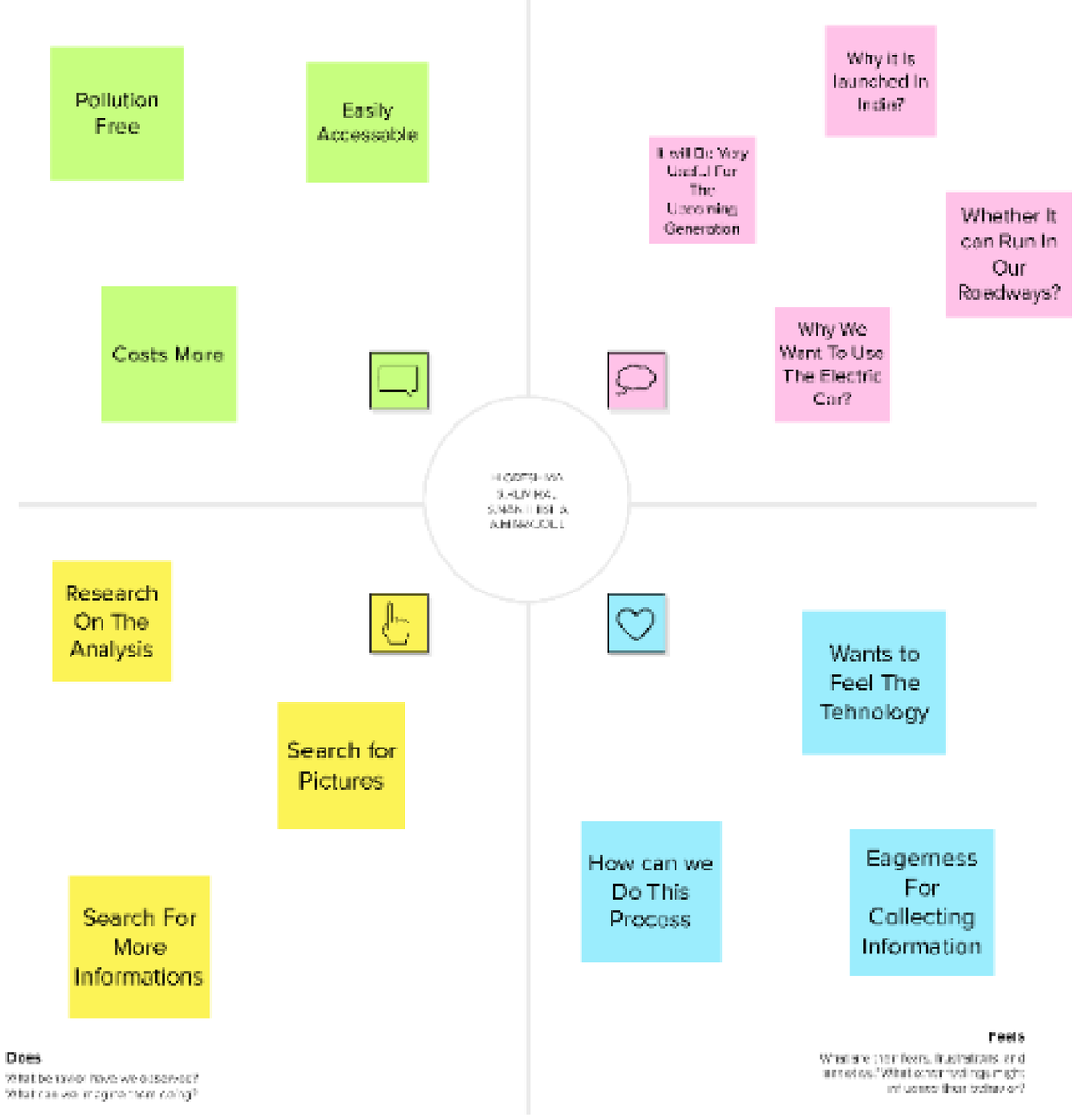
The information you add here should be representative of the observations and research you've done about your users.

Says

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

Thinks

What are their views, needs, hopes, and fears? What other thoughts might influence their behavior?



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?

Need some inspiration?

See a finished version of this template to get started.

Open example →

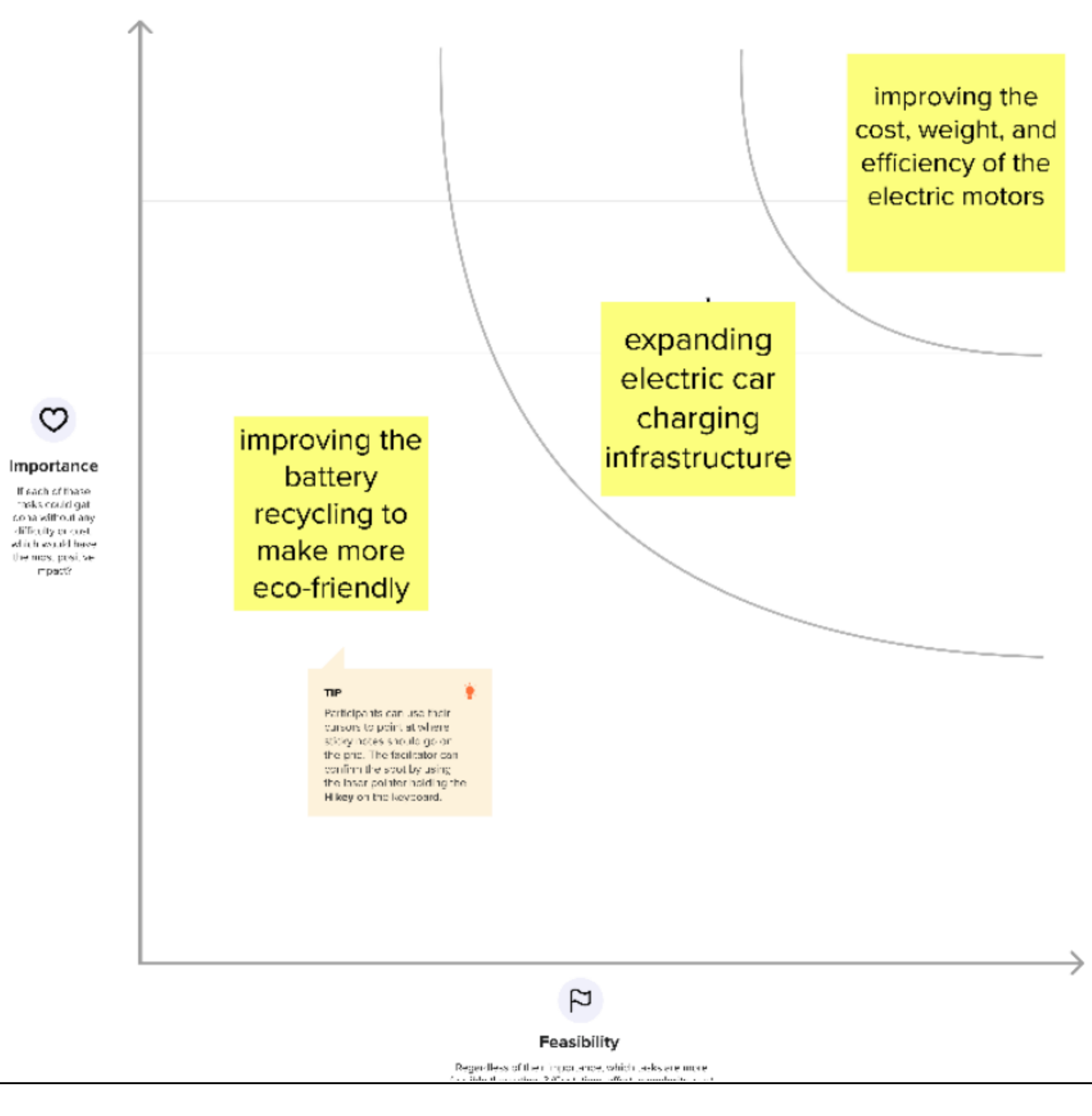
2.2 IDEATION & BRAINSTORMING MAP

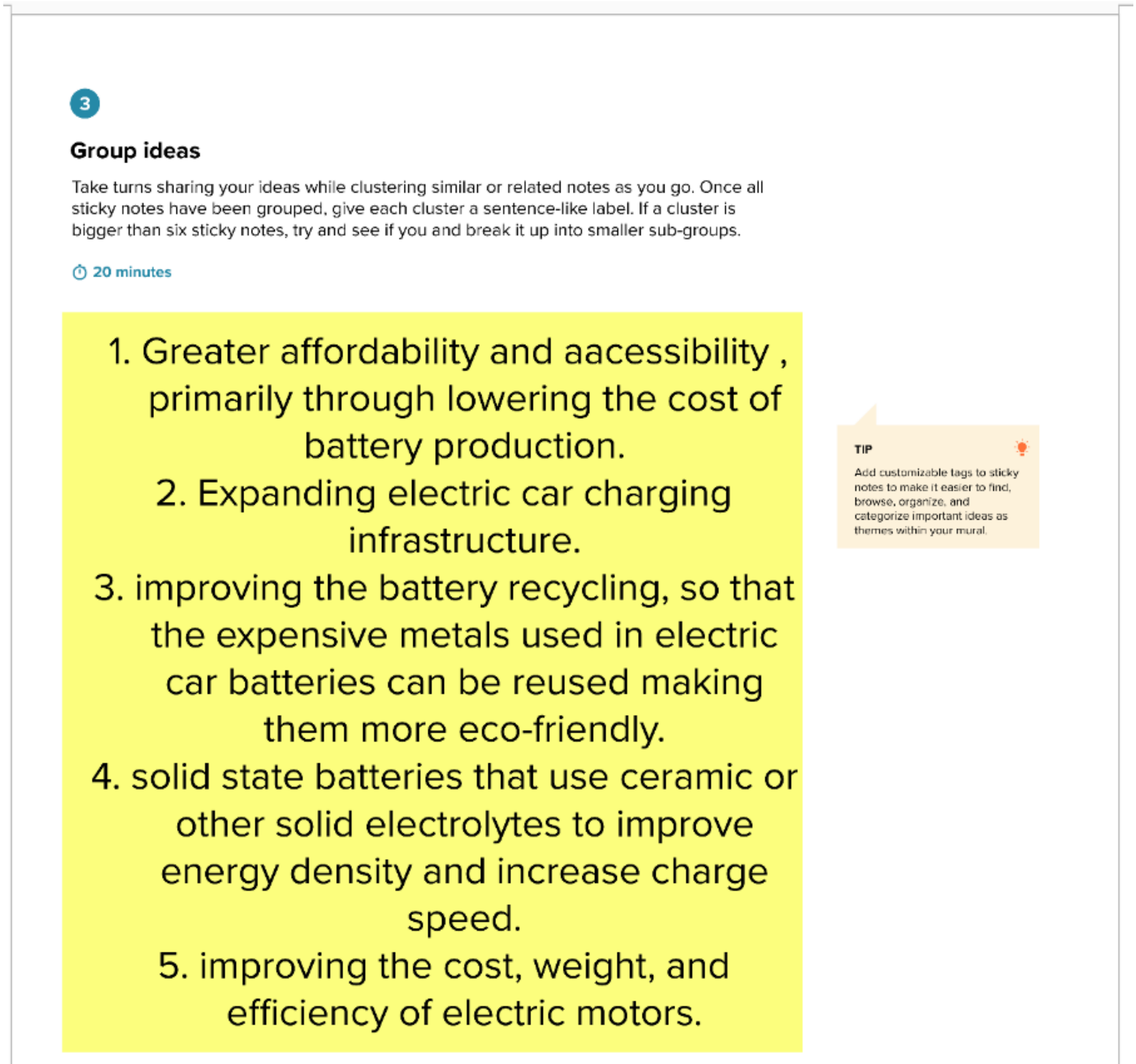
4

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





3. RESULT

3.1 DASHBOARD

A dashboard is a collection of several views, letting you compare a variety of data simultaneously.

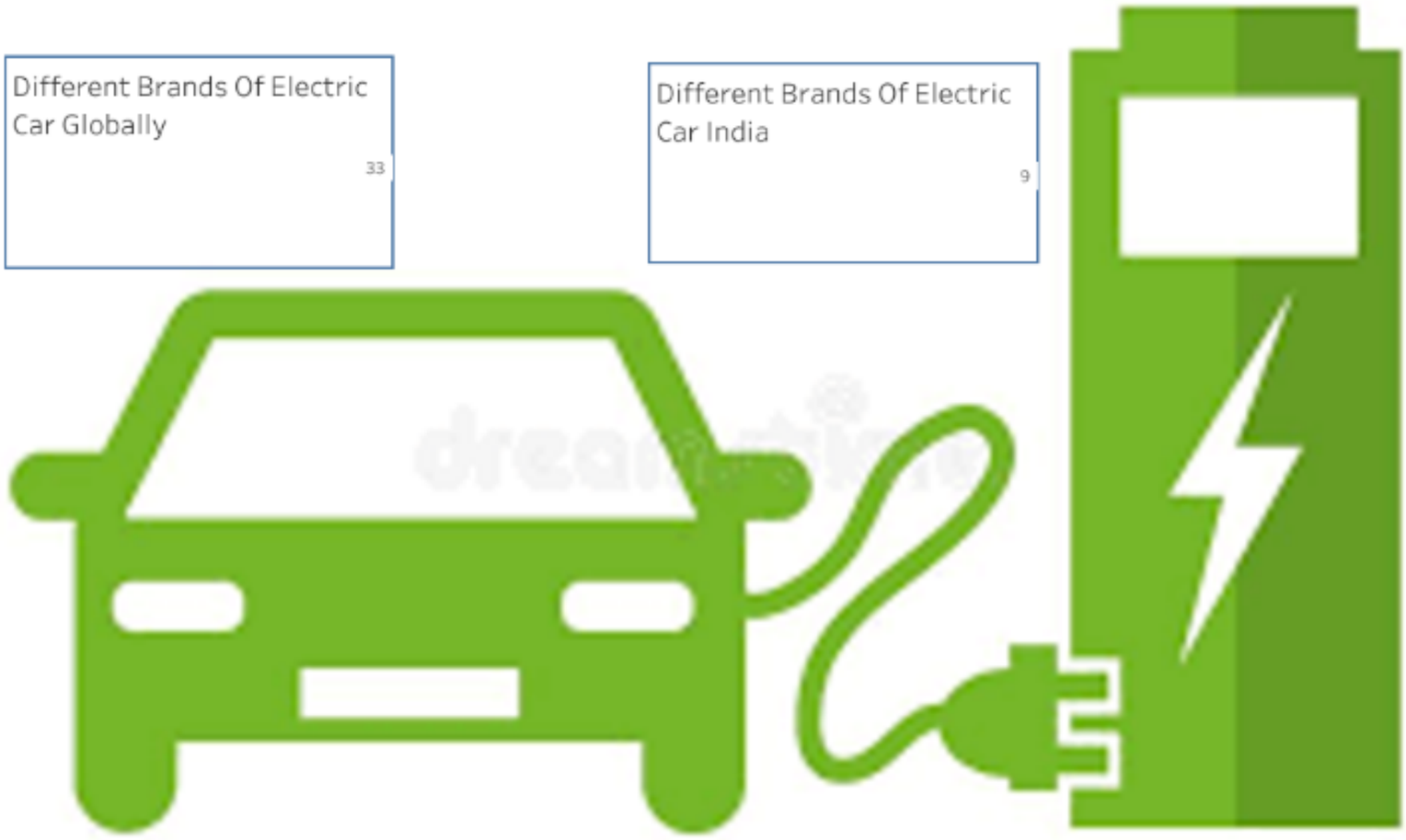
Electric Car Analysis Dashboard

Different Brands Of Electric Car Globally

33

Different Brands Of Electric Car India

9



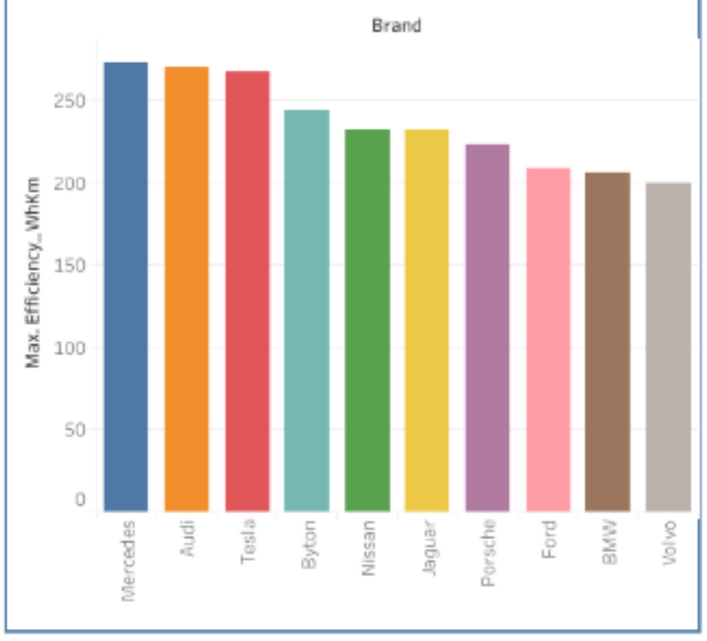
BodyStyle
- Cabrio
- Hatchback
- Liftback
- MPV
- Pickup
- Sedan
- SPV
- Station
- SUV

Brand
- Mercedes
- Audi
- Tesla
- Byton
- Nissan
- Jaguar
- Porsche
- Ford
- BMW
- Volvo

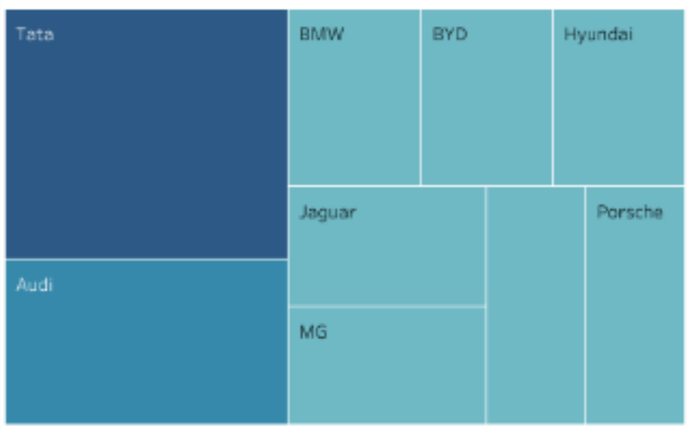
Count of Car
0 3

Brands Acoording To Bodystyle

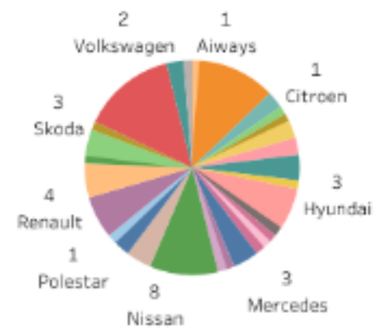
Top 10 Most Efficient Cars In India



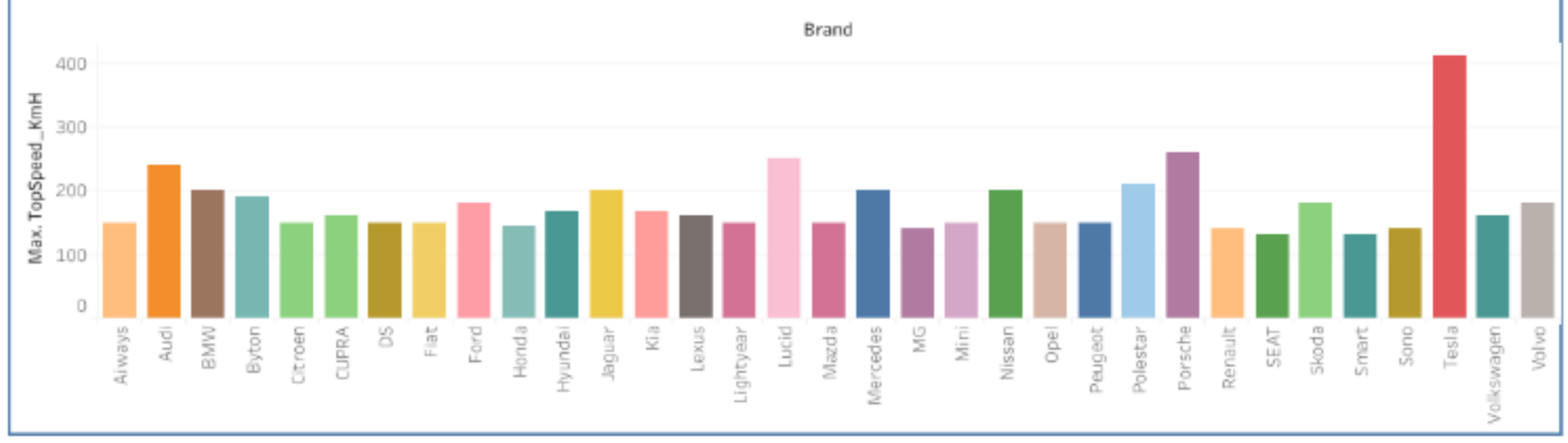
Brands Filtered By PowerTrain Type



No.of Models By Each Brand

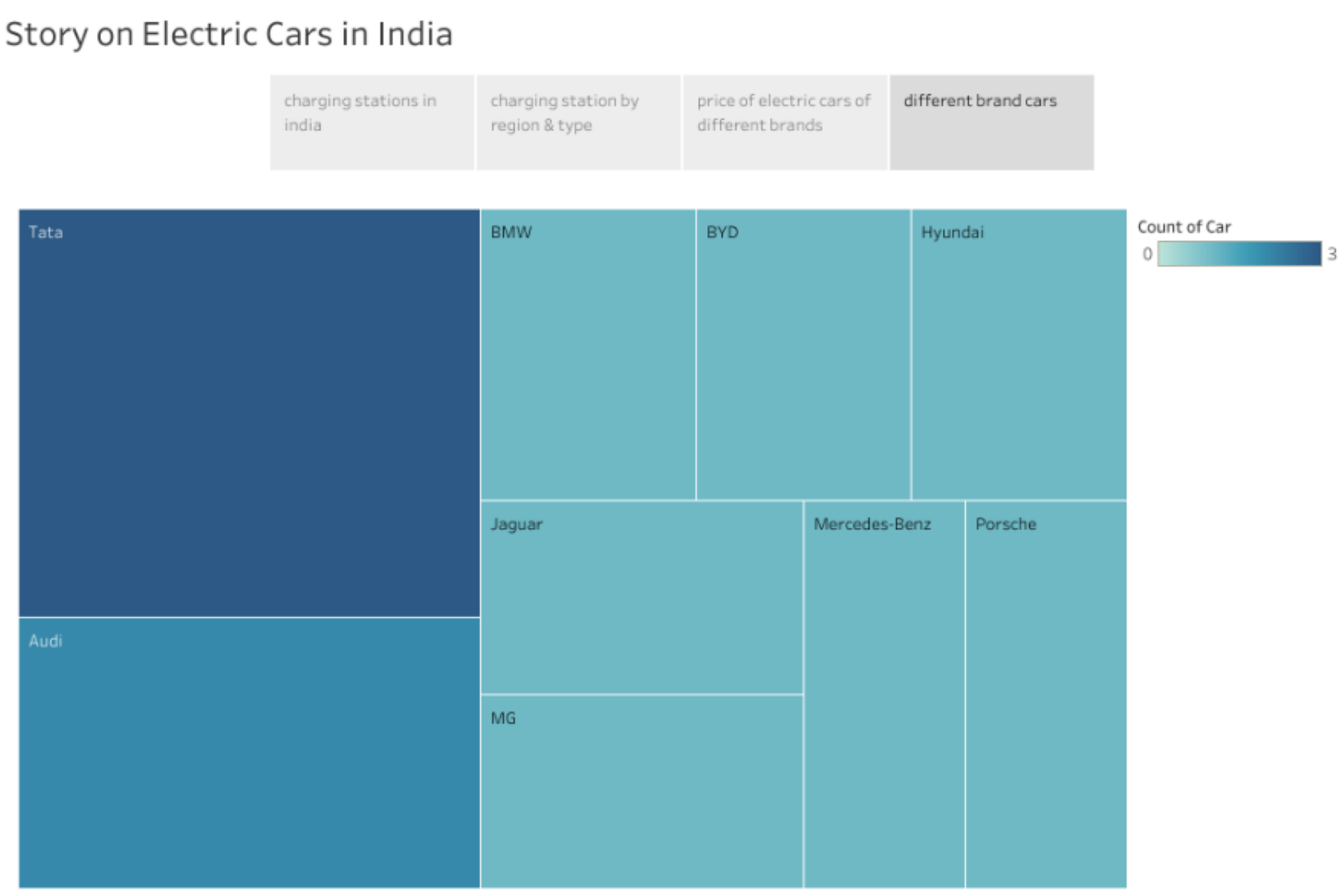


Top Speed For Different Brands



3.2 STORY

A story is a sheet, so the methods you use to create, name, and manage worksheets and dashboards also apply to stories. At the same time, a story is also a collection of sheets, arranged in a sequence. Each individual sheet in a story is called a story point.



4. ADVANTAGES AND DISADVANTAGES

Advantages:

The main advantage of electric vehicle are more efficient and that combined with electricity cost means that charging an electric vehicle is cheaper than filling petrol or diesel for travel requirements.

Pure Electric vehicles have zero tailpipe emissions, which reduce pollution since the electric motor of the EV operates on a closed circuit, it does not emit any harmful gases. Pure Electric cars do not require petrol or diesel which is excellent for the environment.

Electric cars utilize a rechargeable battery pack to power the electric motor rather than a combustion engine. The rechargeable batteries installed within the automobile must be recharged regularly.

These batteries are not only utilized to power the automobile, but they also power the lights and wipers.

With the data analysis, one can make fact based business decisions more quickly and with greater knowledge. They can identify performance problems that need to be fixed. Gain a deeper comprehensive of client needs to improve business partnership, to take preventive action, raise risk awareness . Visualize the data's various dimensions obtain a competitive edge. Improved comprehension of the company's financial performance and find strategies to lower expenses and boost profitability.

Disadvantage:

The supply of electricity isn't consistent in many parts of the country and charging larger batteries require higher capacity and voltage. It take a long time to recharge. Customers are having distance anxiety due to this.

Battery issues and climate control are among the biggest problem in electric vehicles.

As from our analysis before, electric vehicles can be too expensive.

5. APPLICATIONS

This project gives a comprehensive details to known about the electric vehicles and their range which includes monitoring charger availability, managing user access and providing real time updates on charger status.

The main purpose of Electric vehicles range analysis is to determine which brand under electric vehicle category is the most efficient both nationally and globally.

When it comes to electric vehicles range is the all important stat. EV range, put simply in the distance a car can travel on a single charge. Electric vehicles efficiency is reported in miles per gallon of gasoline equailent.

In today's world, data rules the most modern companies. Numerous packets of data are circulating all around the world due to increasing access to the internet. Business are aware that this data translates to information which they can use to improve their customer service, understand trends, or even find market loopholes.

6. CONCLUSIONS

We analyse about the electric vehicles charges and it's range which combined with electronic sensors and controls. In this analyzation we can control pollution.

Electric cars are predicted to be the next disruptive market force for transportation and technology. They have the potential for revolutionize how energy is used created and redirected.

Electric vehicles offers a great reduction in transport costs for business, especially for fleet vehicles with regular journeys of up to 100 miles per day. Although electric vehicles can be more expensive to buy, they have significantly lower running costs when compared to petrol or diesel equivalents.

Electric vehicles are 75 percent efficient at turning input energy into kinetic energy. On the other hand, gas powered vehicles with Internal combustion engines (ICE) are only 25 percent efficient.

With current technical development in the energy sources for electric vehicles, coupled to the desire for less environmentally damaging transport, the future for electric vehicles looks extremely promising.

7. FUTURE SCOPE

This project is useful for the researchers to analyse about electric vehicle. The global market for electric vehicles is growing continuously at a compounded annualised growth rate of 21.7 percent. It is expected to grow from 8.1 million units to 39.21 milli units by 2030.

By 2025, the scope of electric vehicles is expected to expand significantly.many automakers have already pledged to invest heavily in EV production and governments around the world are offering incentives to promote their use .

On the basis of survey , vehicles occupy 30 percent of the global total energy consumption and 27 percent of total green house gas emissions. The commissioning of electric vehicles in the mere future saves the usage of conventional fuels by $ 60 billion thereby reducing 1 gigatonne of carbon emissions by 2030.