



# Battle of the Neighbourhoods

IDENTIFYING OPTIMAL LOCATIONS TO PLACE TIER 1 AUTOMOTIVE  
SUPPLIER COMPANIES IN INDIA

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# Background

- ▶ India is the 5th largest economy in the world and India's automotive industry is the fourth largest in the world. The automotive industry in India accounts for 4% of the country's gross domestic product.
- ▶ With the onset of emerging automotive technologies, there is enormous scope for Tier 1 automotive suppliers to place themselves in India. Before I describe the business problem I'll be solving, I would like for you to have an idea about the difference between a manufacturer and a tier 1 supplier with respect to the automotive industry.

# Things to know before going ahead

The following text has been taken from: <https://medium.com/self-driving-cars/the-automotive-supply-chain-explained-d4e74250106f>

## ► **Manufacturers in the automotive industry**

Automotive manufacturers are the brands that everyone knows — Ford and Toyota and BMW and their competitors. These firms are commonly referred to OEMs (original equipment manufacturers), which is an unfortunate misnomer. While these manufacturers produce some original equipment, their real strength is in designing cars, marketing cars, ordering the parts from suppliers, and assembling the final product.

## ► **Tier 1 Suppliers in the automotive industry**

Companies that supply parts or systems directly to OEMs are called Tier 1 suppliers. Some of these brands are recognizable, like Bosch or Continental. Some of them are less so. Tier 1 suppliers specialize in making “automotive-grade” hardware. This means hardware that withstands the motion, temperature, and longevity demands of OEMs. These suppliers usually work with a variety of vehicle companies.

# Business Problem

- ▶ The problem for this capstone project is to identify the optimal locations for setting up Tier 1 automotive supplier companies in India. We'll find the optimal locations for placing companies that desire to cater to the needs of all types of manufacturing plants.
- ▶ Depending upon the scope and financial strength of the tier 1 company, we'll answer three questions:
  1. If a tier 1 company wants to cater products to all automotive manufacturing plants in India, where should it place itself?
  2. If a tier 1 company wants to cater products to automotive manufacturing plants in a large part of India, where should it place itself?
  3. If a tier 1 company wants to cater to the automotive manufacturing plants in a small part of India, where should it place itself?

# Data and Analysis

I will be using the following data-sets for the analysis:

1. List of Industrial centres in India  
[https://en.wikipedia.org/wiki/List\\_of\\_industrial\\_centres\\_in\\_India](https://en.wikipedia.org/wiki/List_of_industrial_centres_in_India)

2. List of vehicle plants in India  
[https://en.wikipedia.org/wiki/List\\_of\\_vehicle\\_plants\\_in\\_India](https://en.wikipedia.org/wiki/List_of_vehicle_plants_in_India)

3. After parsing, cleaning and plotting this data, I'll cluster the data using K-means clustering algorithm and visualize the clusters.

4. The cluster with the greatest number of manufacturing plants in it will have the highest number of business opportunities, and that cluster's centre will be the most ideal location to start a tier 1 company geographically

5. Since operating a manufacturing company requires industrial resources, I'll use the data from point number 1 and locate the industrial area nearest to the coordinates obtained in point number 4 to come up with the final solution.