

Guesstimation Exercise: Estimating the number of Electric Scooters in use in a City with a population of 3 Million

Assumptions:

We're imagining a city which is in a colder region, having a population of 3 million.

- Population Demographics and their Scooter usage:
 - **Seniors (above 60 years):** 25% of the population (5% are likely to use.)
 - **Adults (18-60 years):** 55% of the population (15% are likely to use scooters.)
 - **Children (under 18 years):** 20% of the population (are assumed not to use scooters at all.)
- City Climate: The city has a cold climate with long winters, limiting scooter usage to the warm months and the transition months.
- City Infrastructure: The city's infrastructure is not much developed, there are fewer bike lanes (only on highways), and broad roads are less in the city. The accessibility of charging stations is mediocre.
- City's Economic Factors: It has a modest economy; a mix of middle and lower-income residents only, which could further hinder scooter adoption.

Approximations of Scooter Usage:

Adults Using Scooters:

15% of 1.65 million = 0.2475 million
= 247,500

Seniors Using Scooters:

5% of 0.75 million = 0.0375 million
= 37,500

Final Estimate:

Total Estimated Scooter Users: 247,500 (adults) + 37,500 (seniors) = 285,000

→ **Final Estimate:** Approximately *285,000 electric scooters* are in use in the city.

Justification and Reasoning for our Approximations:

- The assumption that 55% of the population are adults and 25% are seniors reflects the slightly older demographic typical of smaller, colder cities.
- The adoption rate for scooters is assumed to be lower (15%) among adults due to the cold climate and less convenient infrastructure which isn't very ideal for commuting to-and-fro work, and even lower (5%) for seniors due to mobility challenges and weather conditions.
- The cold climate and limited infrastructure here has significantly reduced the likelihood of widespread scooter usage, making the final estimate a low number.

Conclusion:

This guesstimation exercise provided a structured approach to estimating the number of electric scooters in a city with a population of 3 million. By considering demographic factors, scooter adoption and usage rates, and the city's climate and infrastructure, we estimated that approximately 285,000 electric scooters are in use.