

Electric Vehicle Population Data Analysis Report

1. Dataset Description:

The dataset used for this analysis focuses on the **electric vehicle (EV) population** across different regions, manufacturers, and model years. It contains details about various EV models, their make, model year, type, range, and geographical information.

- **Dataset Size:** ~5,000 records of registered electric vehicles
- **Main Columns:**
 - **Model Year** – Year of manufacturing/registration of the EV
 - **Make** – Manufacturer (e.g., Tesla, Nissan, Chevrolet)
 - **Model** – Vehicle model name
 - **Electric Range** – Range (in miles) on a full charge
 - **County / City** – Region of registration
 - **Vehicle Type** – BEV (Battery Electric Vehicle) or PHEV (Plug-in Hybrid Electric Vehicle)
 - **Electric Utility** – Utility company associated with the region

Purpose:

- To identify trends in EV adoption across years and manufacturers
- To analyze electric range variations among top EV makers
- To study regional EV distribution and model popularity
- To derive insights for sustainable mobility and market potential

2. Observed Insights & Hidden Facts:

General Trends:

- Most electric vehicles in the dataset are manufactured after 2017, showing rapid adoption in recent years.
- Tesla leads the EV market share, followed by Nissan and Chevrolet.
- The average electric range is around 120–150 miles, but premium models exceed 300 miles.
- BEVs dominate the dataset compared to PHEVs, reflecting a global shift toward fully electric vehicles.

Regional Insights:

- Urban counties and cities show the highest EV registration density, likely due to better charging infrastructure.
- Some regions show limited representation — indicating gaps in EV infrastructure or adoption lag.

Hidden Facts:

- A small percentage of EVs show missing or zero range values, possibly due to incomplete records or hybrid models.
- Certain older models remain registered but have lower electric range, suggesting retention of legacy EVs.

3. Recommendations:

For Policymakers & EV Companies:

- **Expand Charging Networks:** Focus on underrepresented regions to increase EV adoption.
- **Encourage High-Range EVs:** Incentivize manufacturers to improve battery performance.
- **Data Accuracy:** Ensure registration data consistency by standardizing model and make names.
- **Promote Sustainable Fleets:** Transition government and public fleets to BEVs.

For Data Analysts & Researchers:

- Conduct city-level correlation analysis between infrastructure and EV count.
- Perform time-series forecasting for future EV adoption trends.
- Combine this dataset with charging station data for more powerful insights.

4. Conclusion:

The Electric Vehicle Population dataset provides a clear picture of the growing EV ecosystem. From the analysis, Tesla emerges as the market leader, while most EVs cluster in recent model years (post-2017). Average electric range shows improvement across newer models, reflecting technological growth. The findings can support policy planning, sustainability goals, and energy infrastructure decisions.

Overall, the dataset serves as a valuable resource for understanding EV trends, range performance, and adoption growth.

5. Summary Table:

Aspect	Observation	Recommendation
Top Manufacturers	Tesla, Nissan, Chevrolet lead EV count	Support innovation & local manufacturing
Model Year Trend	Rapid growth after 2017	Forecast EV demand and battery needs
Average Electric Range	Around 120–150 miles	Incentivize high-range models
Regional Concentration	Urban areas dominate	Improve rural EV infrastructure
Vehicle Type Distribution	BEVs > PHEVs	Continue shift toward full-electric adoption