

Electric Vehicles in Washington State

By:
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Overview

Data Sources:

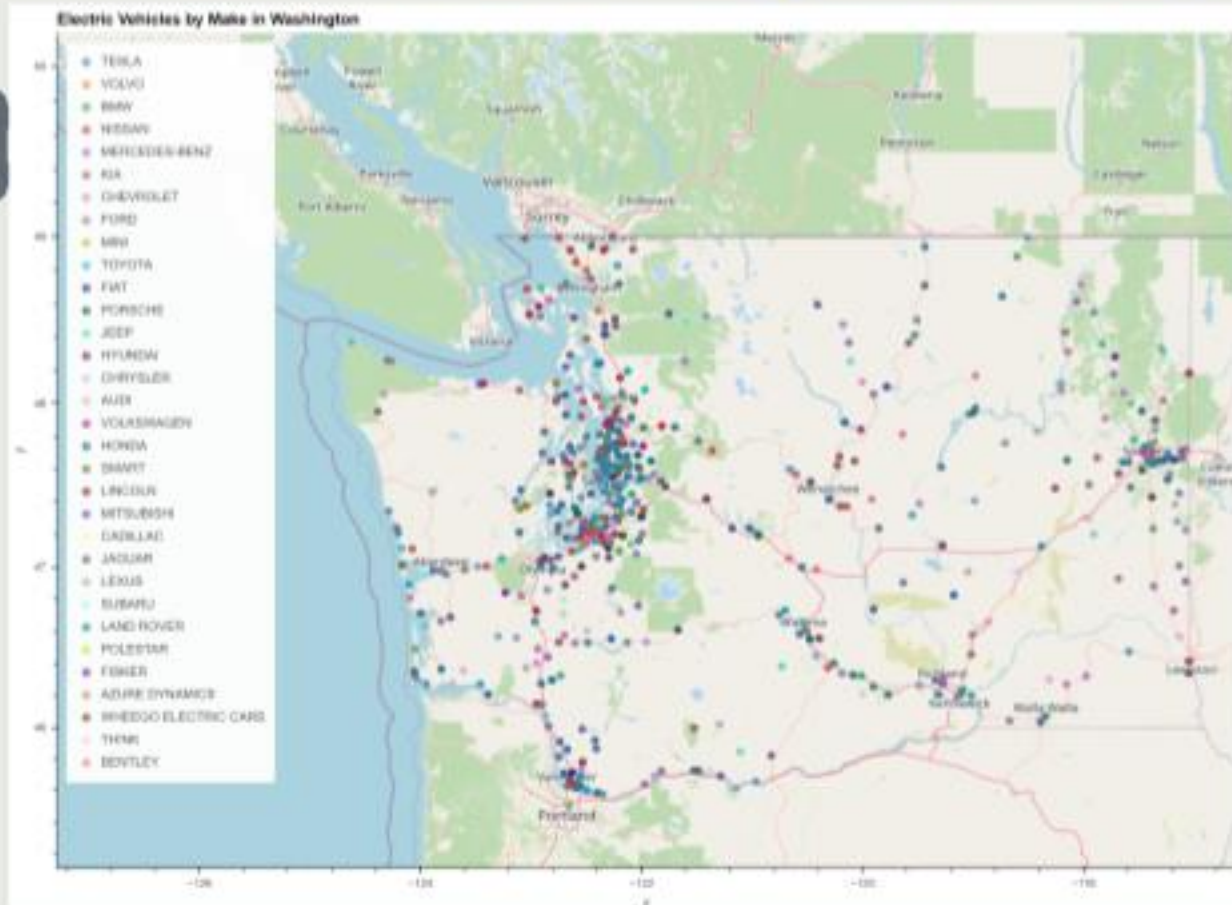
Electric Vehicle Population Data in Washington in 2020	https://catalog.data.gov/dataset/electric-vehicle-population-data
Washington State Household Income by County from US Census	https://data.census.gov/table?q=income+2020&q=040XX00US53.53\$0500000_050XX00US53005.53007.53009.53011.53015.53021.53025.53027.53029.53033.53035.53041.53045.53053.53057.53061.53063.53067.53073.53077

*Vehicles registered in WA but not physically in WA were excluded.

Points of interest:

- What counties in Washington were most likely to have electric vehicles?
- Are electric car owners in Washington more likely to own a pure electric vehicle or a hybrid electric vehicle?
- Which brand and model of electric vehicle have the highest ownership in Washington?
- What is the electric range of these make and models?
- What is the income level of each county in Washington?
- How does the level of income in each county affect their electric vehicle ownership?


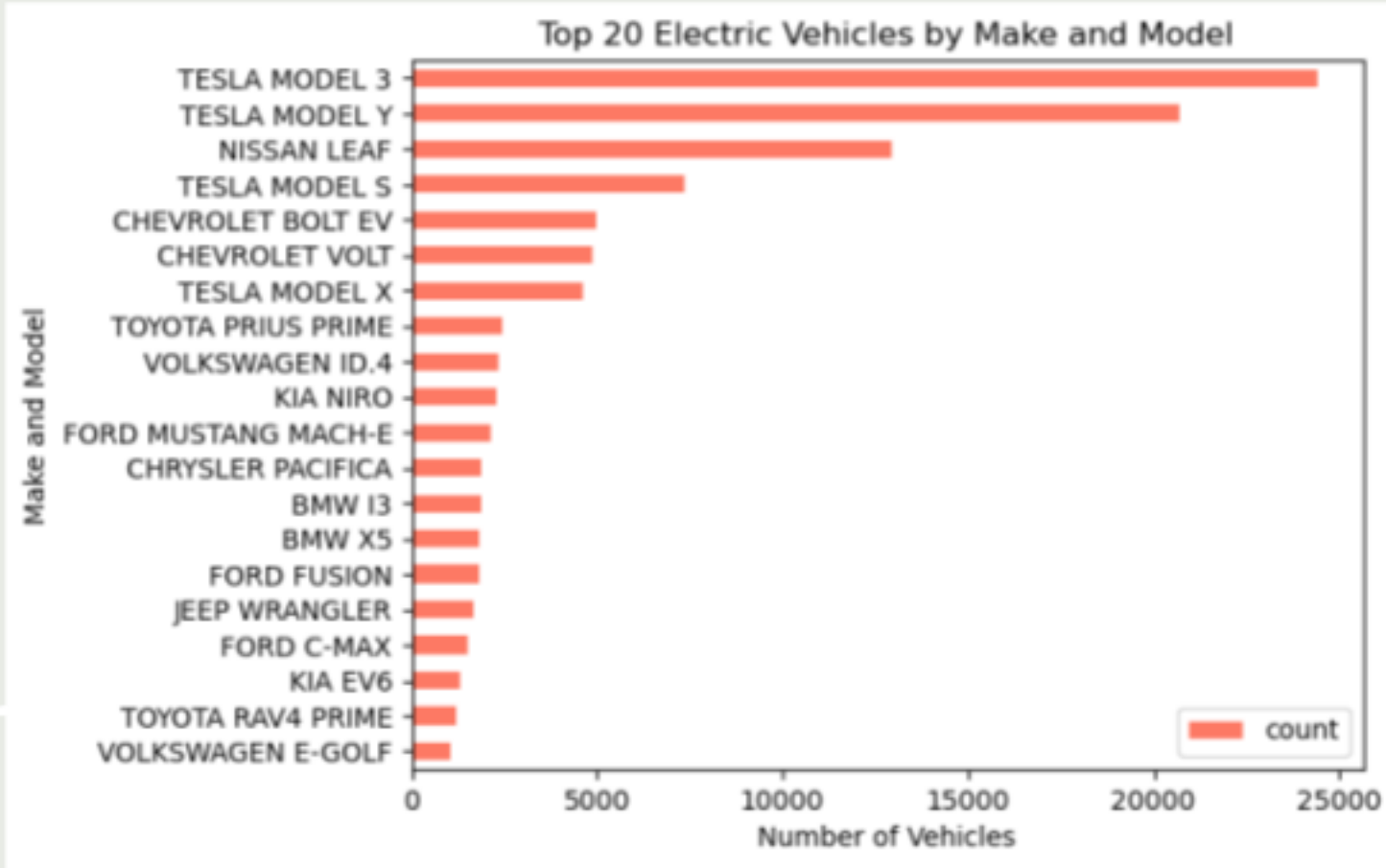
EV by Make/Model



Based on the data, there are 30+ brands of electric vehicle registered and located in Washington.

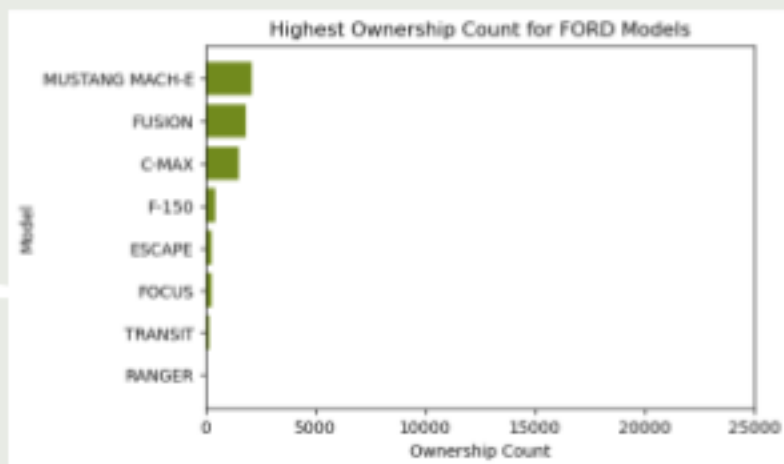
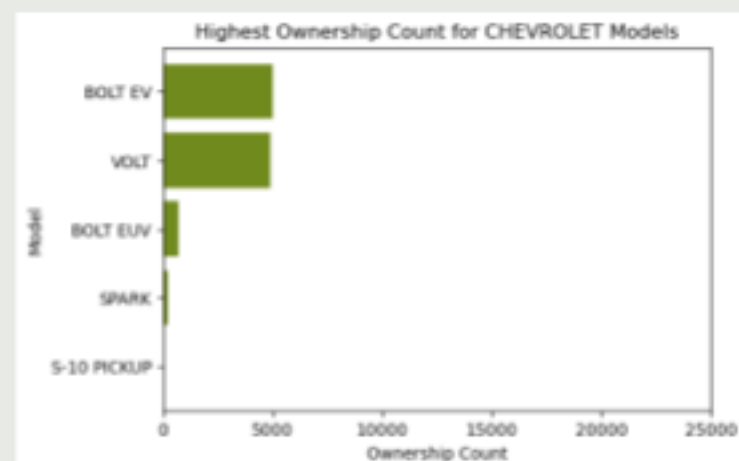
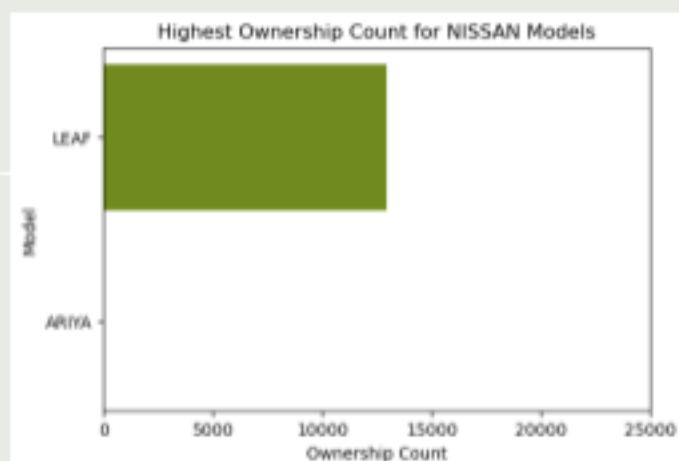
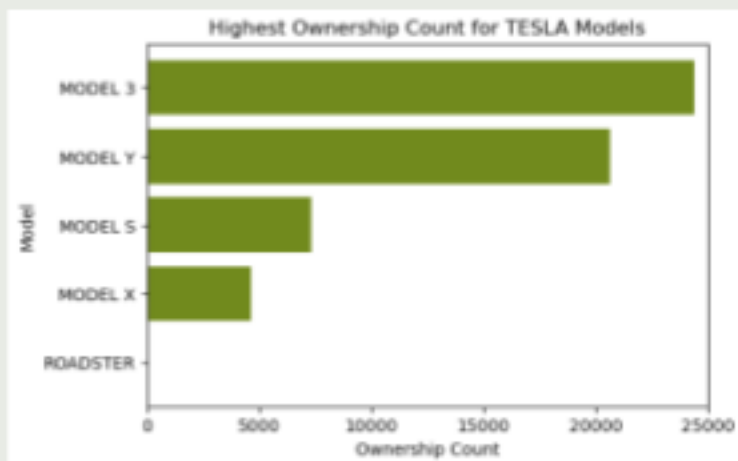


Brand Popularity

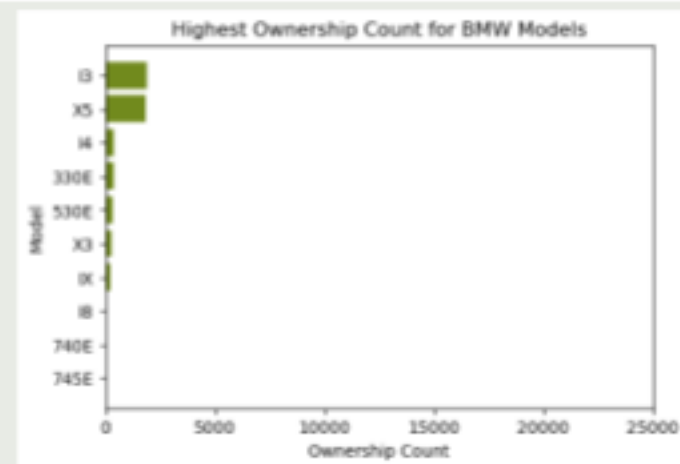


Tesla is the most popular brand in Washington, followed by Nissan (the Leaf model in particular).

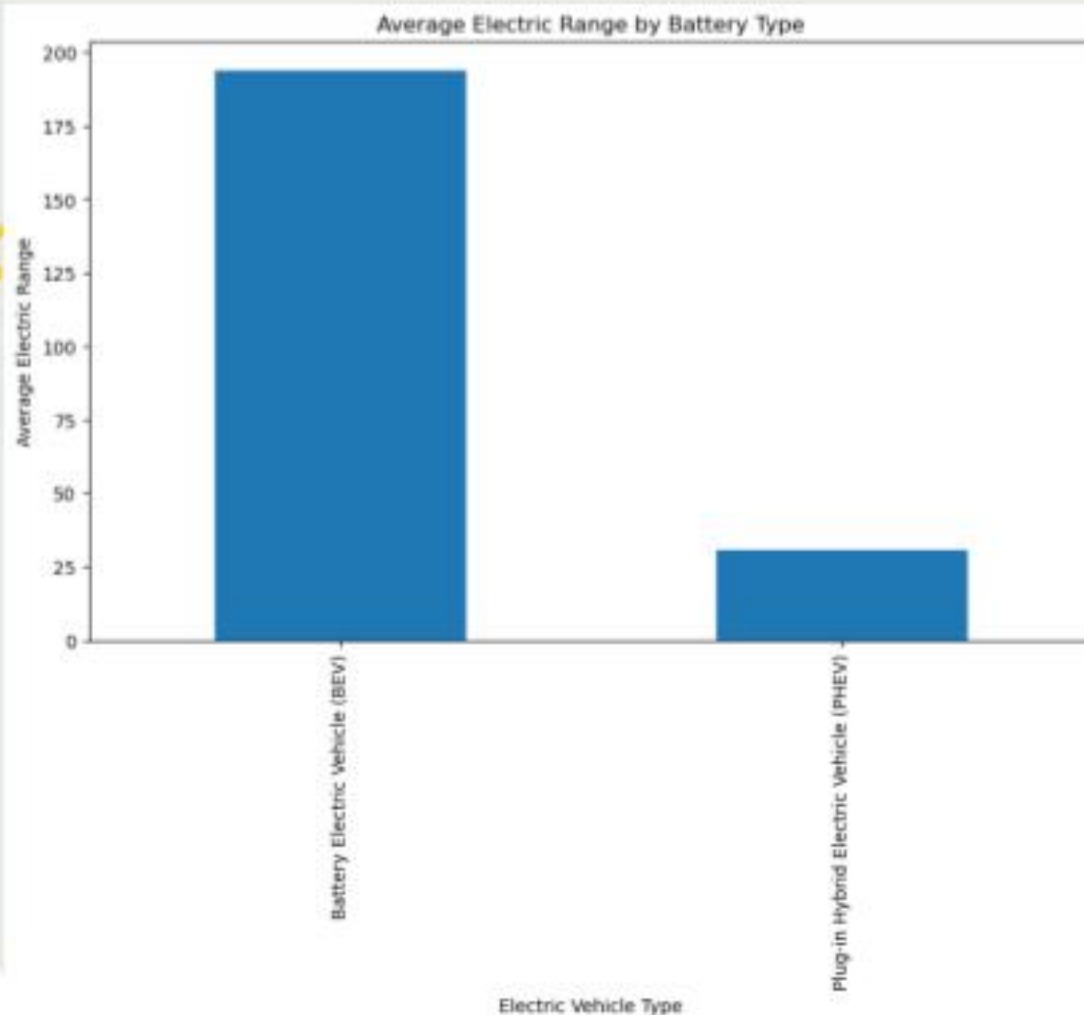
Model Popularity



EV model popularity by brand
in order of brand popularity
in Washington.



PHEV vs BEV Electric Range



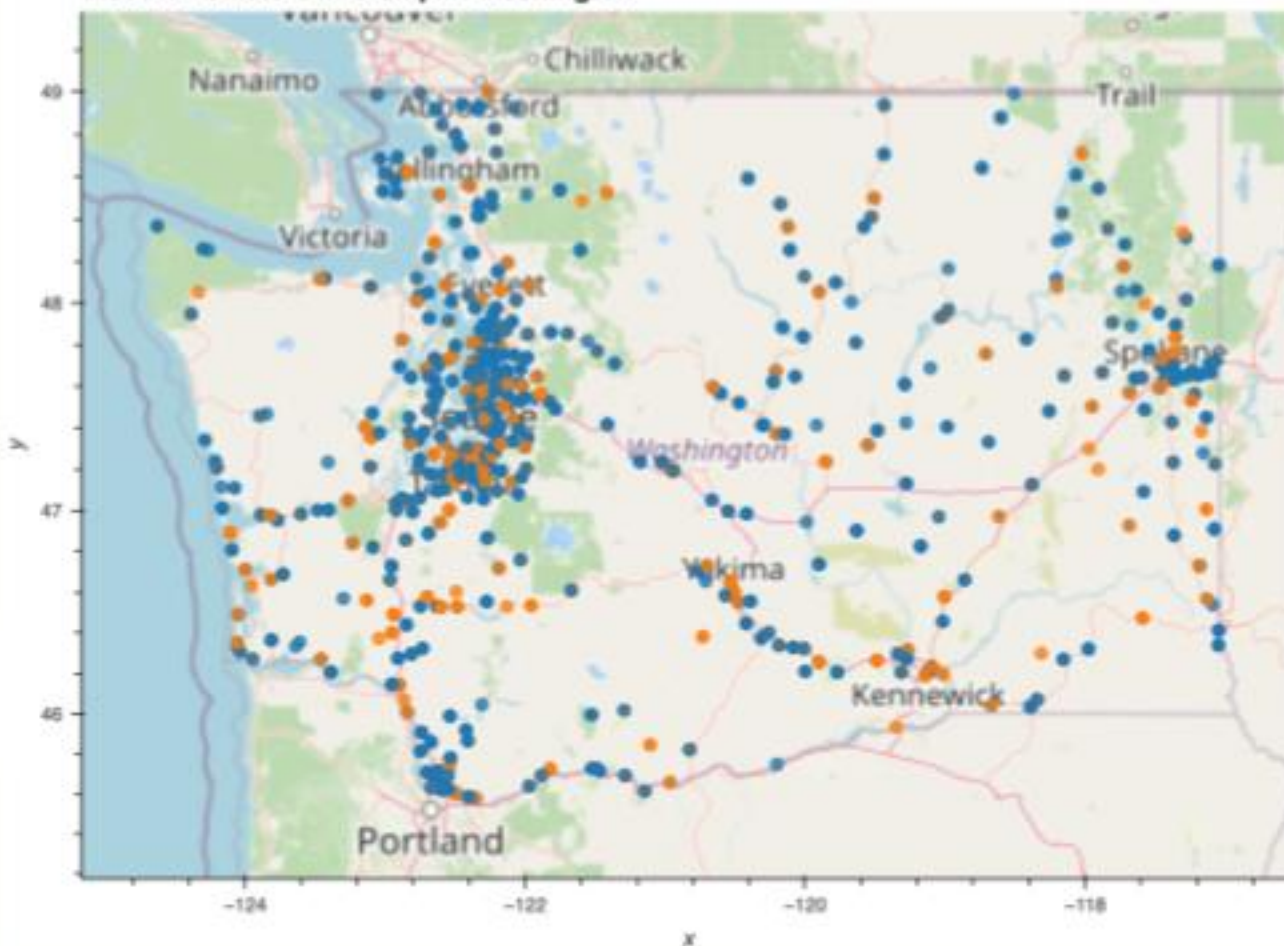
- PHEV: Plug-In Hybrid
- BEV: Battery Electric

Comparison between the electric ranges of PHEV vs BEV, BEV can go much further on one charge than PHEV can on a full tank of gas.



Ownership by Electric Vehicle Type

Electric Vehicle Ownership in Washington



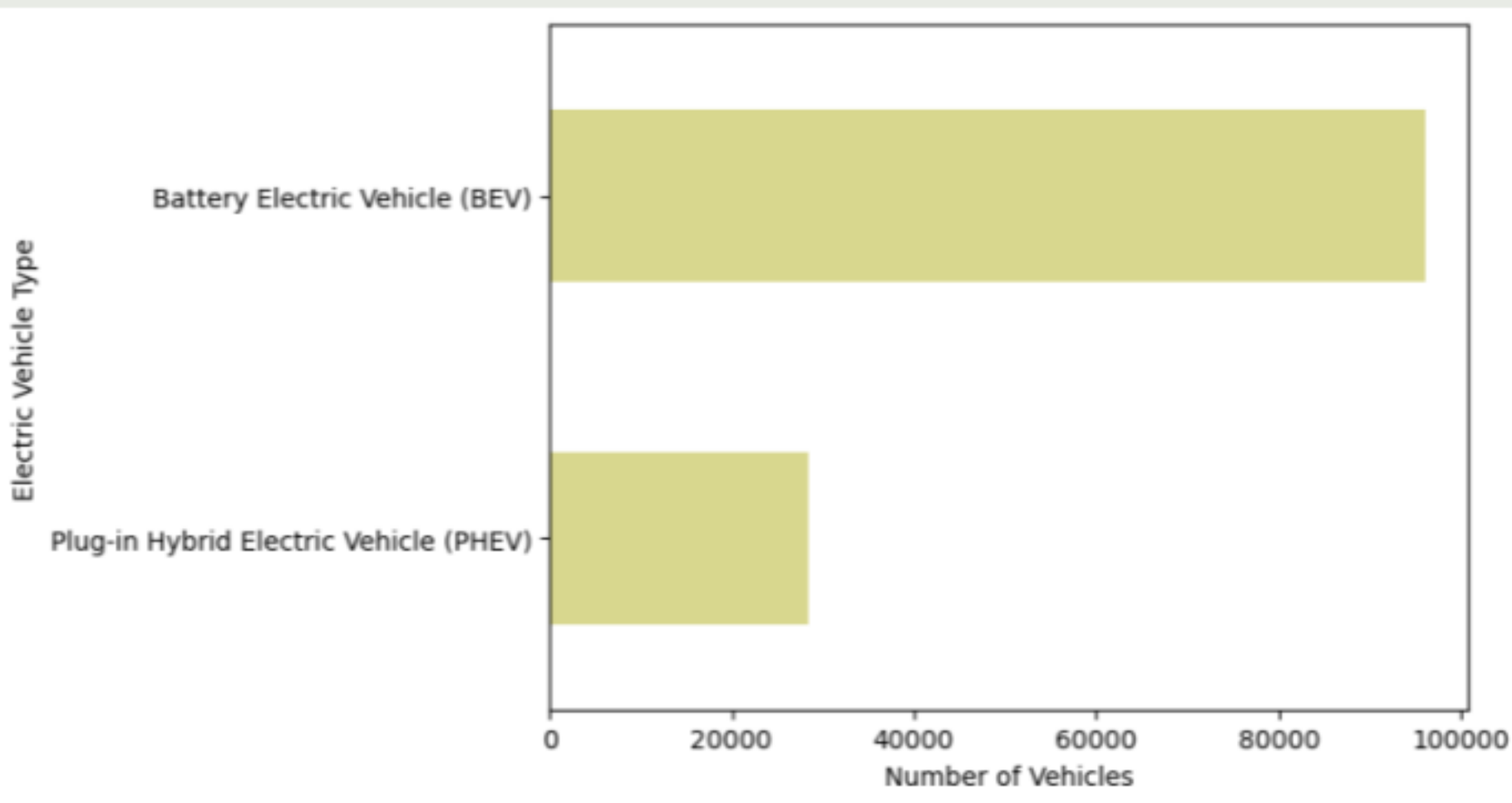
Concentration of electric vehicles per type (PHEV vs BEV) in Washington.



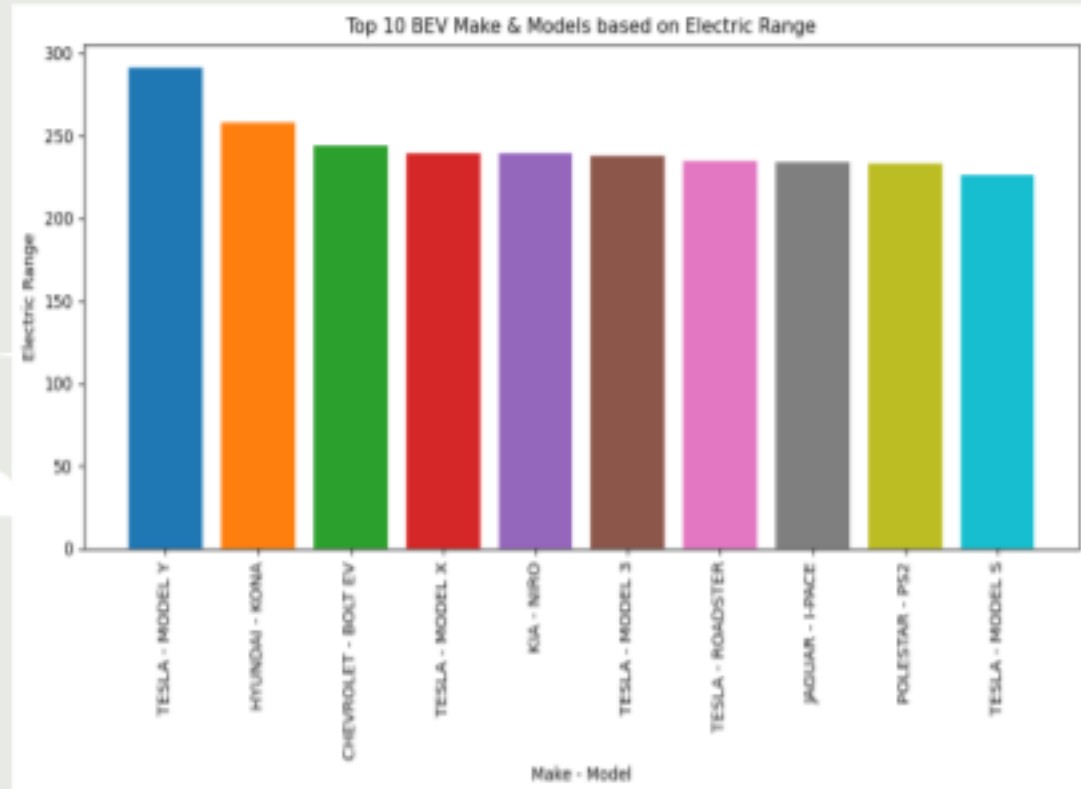
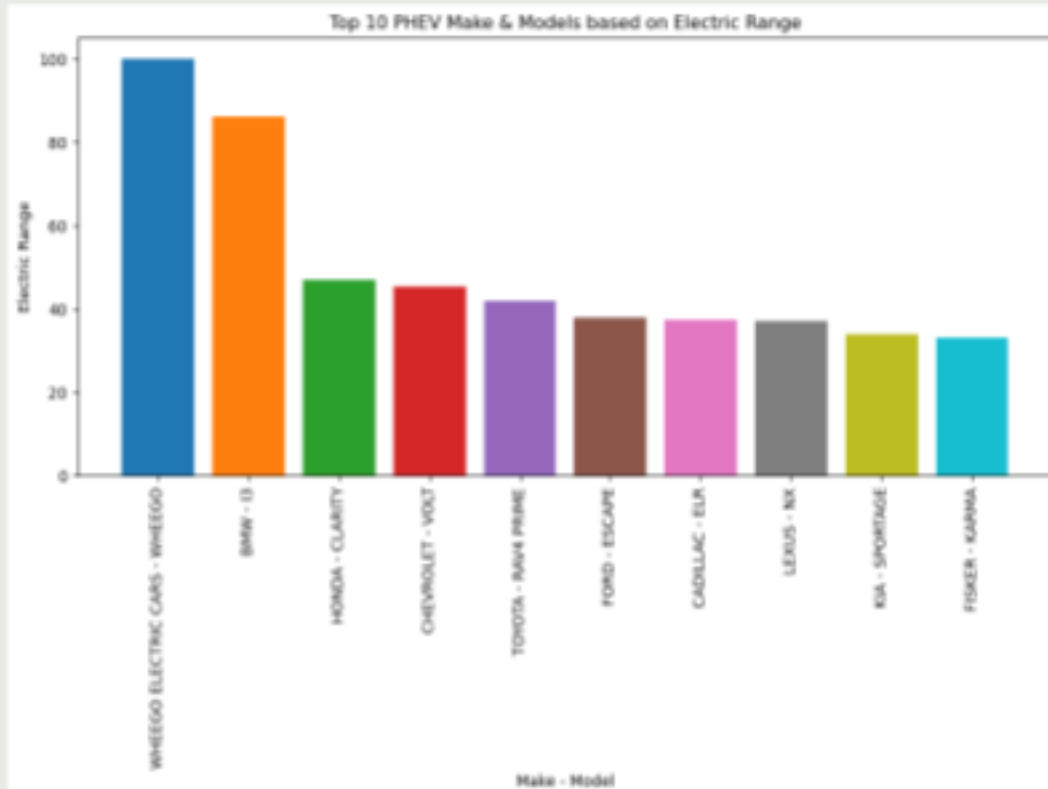
Ownership by Electric Vehicle Type



Ownership
breakdown by
numbers in
Washington.



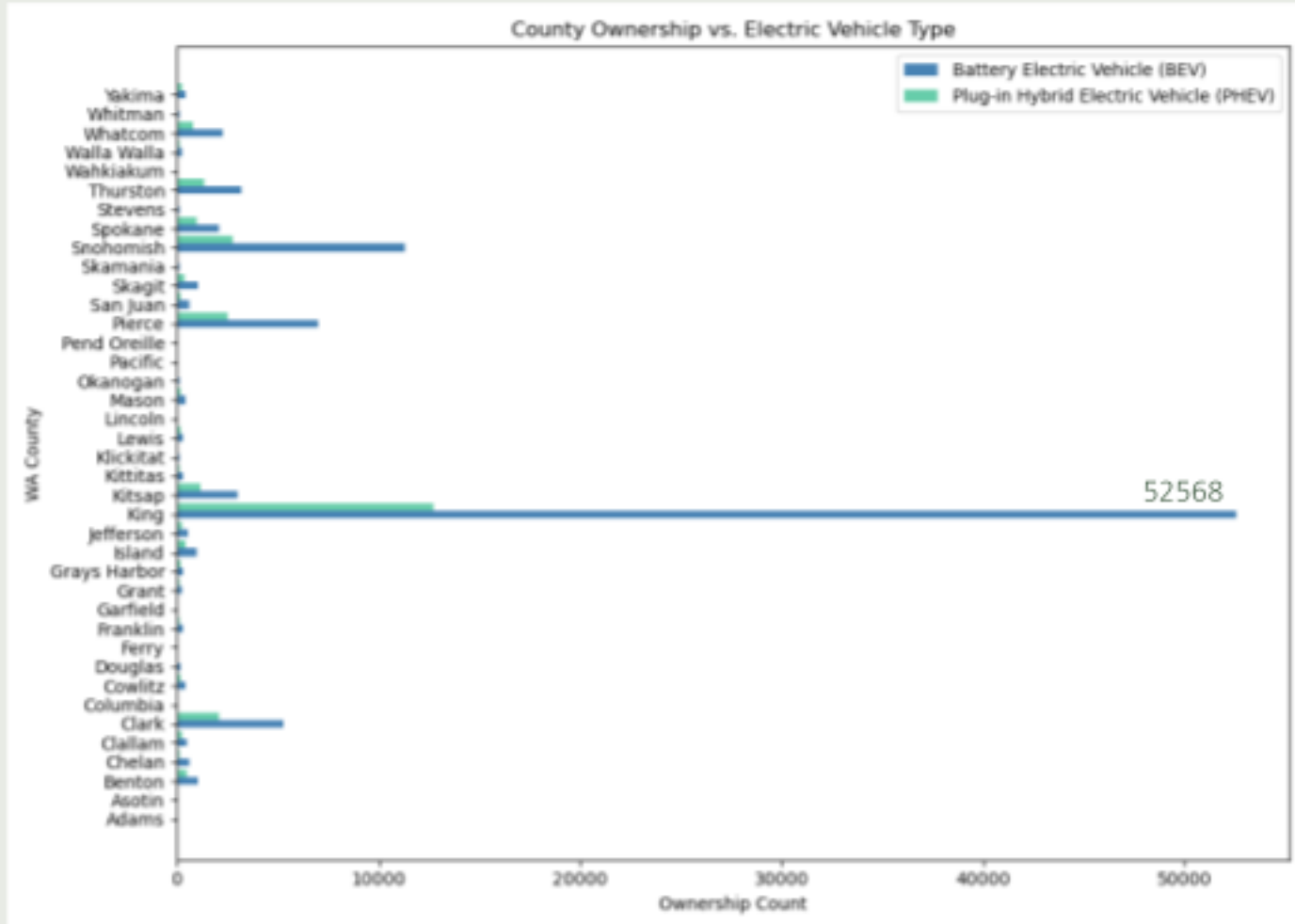
Model Electric Range (PHEV vs BEV)



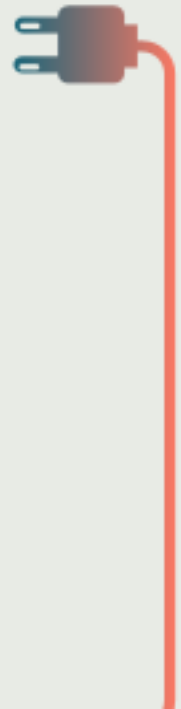
Comparison of electric ranges per vehicle type by brand/model.



County Ownership by EV Type

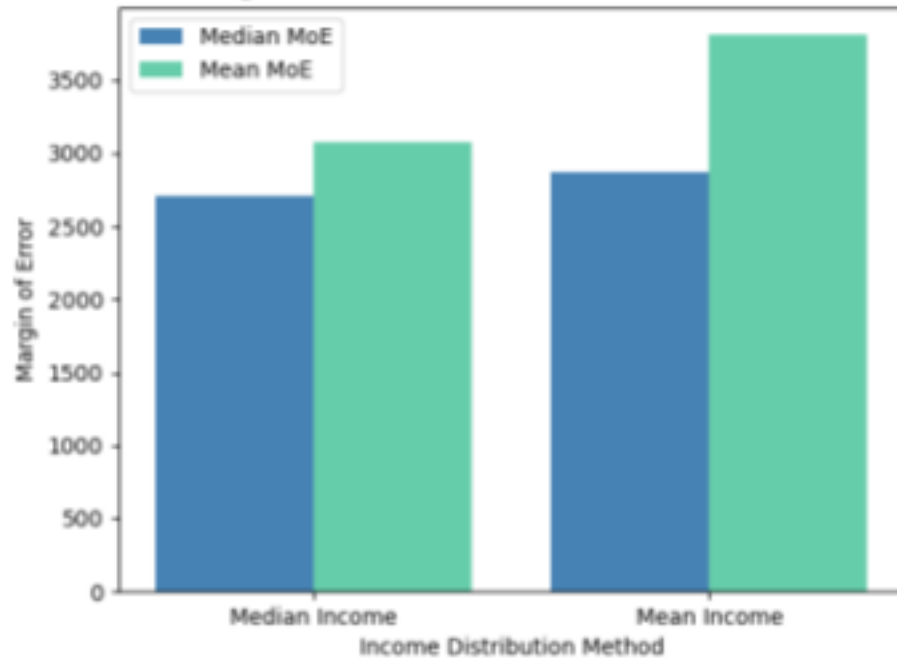


Breakdown of electric vehicles owned by county, comparing the BEV and PHEV ownership.

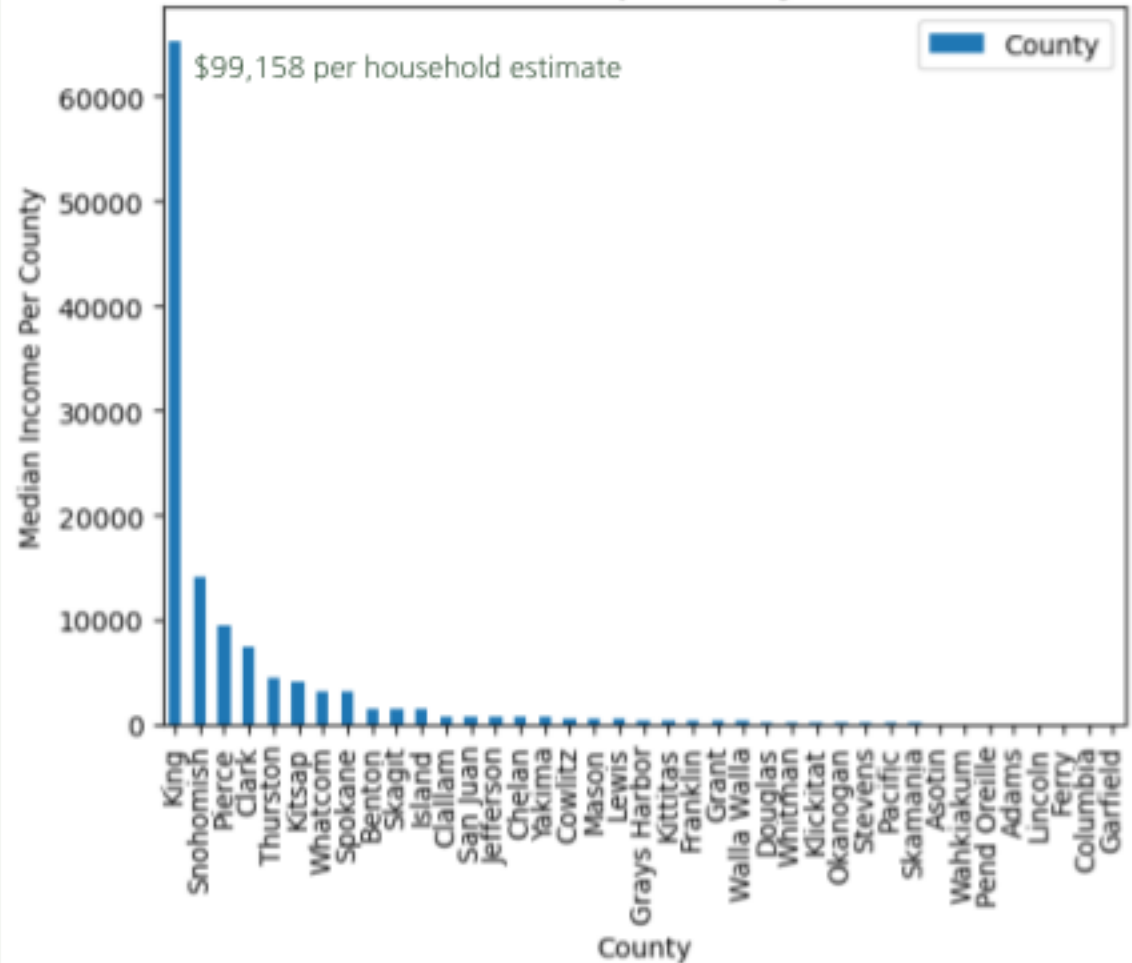


Median Income by County

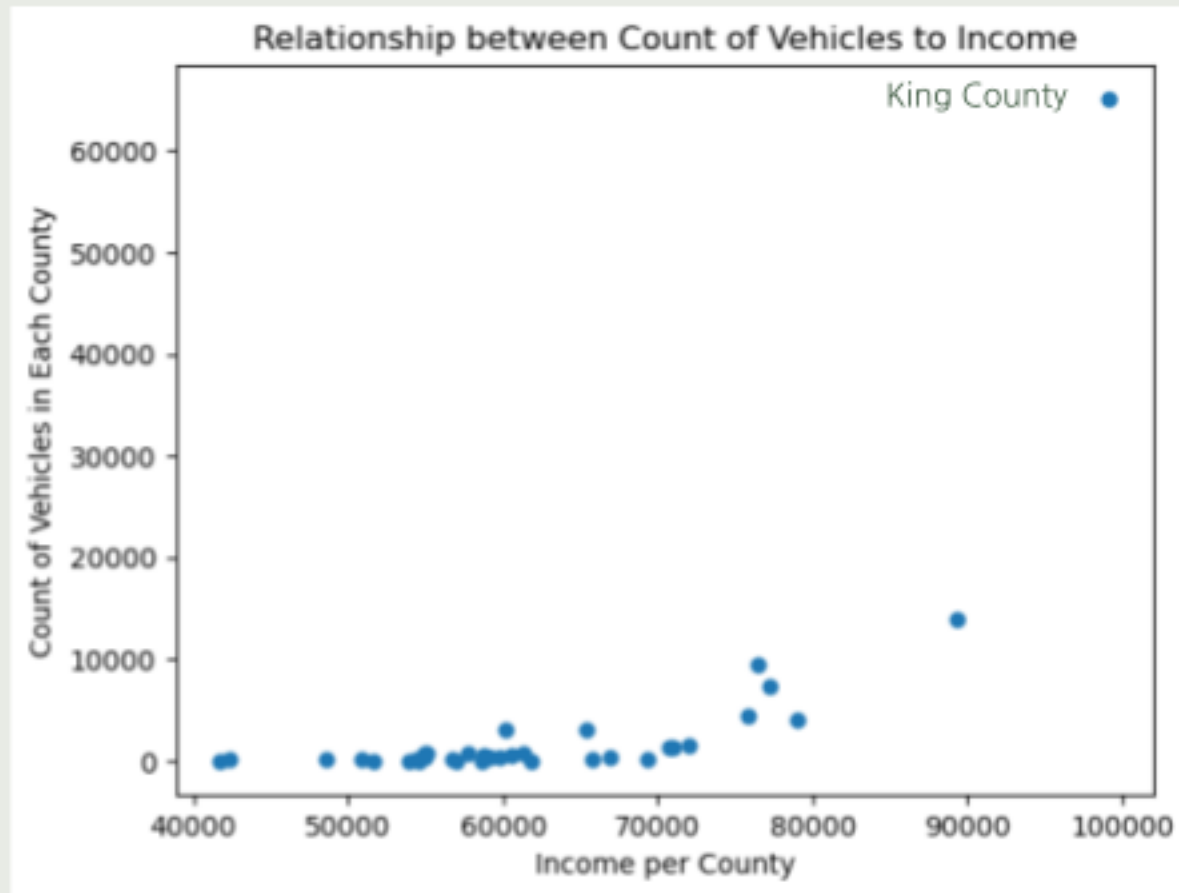
Margin of Error: Median Income vs. Mean Income



Income per County



Median Income vs EV Ownership



The Pearson's r-value for the relationship between county electric vehicle ownership to median income is 0.68, speaking to the high positive correlation between these two factors.



Summary

- King County is most likely to have electric vehicles.
- Electric car owners in Washington is more likely to own a pure electric vehicle.
- Tesla Model 3 is the most popular brand and model of electric vehicle in Washington.
- The maximum electric range of BEV is 300 miles per charge, versus PHEV at 100 miles per tank of gas.
- King County has the highest median income level in Washington, with the median income of \$99,158 per household estimate (far exceeding other counties in the state).
- There is a positively high correlation between electric vehicle ownership and median income in Washington.

Limitations

- Electric Range in our data were reported by the vehicle owners, which may be inaccurate.
- Reporting errors in vehicle electric range can vary up to 36%, having access to manufacturer data would improve the accuracy of our BEV vs PHEV ranges.
- Data only accounts for electric vehicle ownership in 2020, thus we are unable to analyze chronological patterns of electric vehicle ownership.
- The data does not include reason for ownership, not having access to direct consumer data limits our ability to compare brand affinity to likelihood of ownership.
- We did not compare ownership with EV charging stations, there is possibly a correlation between electric vehicle ownership and availability of charging stations.
- We did not breakdown income further than county, which limits our insight into the cause of the income variation and resident spending habits.

The End

Let us know if you have any questions!



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