Analysis of E.V.’s (Electric Vehicles)

Question 1: Why are most evs sold in these 3 counties in California? (Los Angeles, Orange County, Santa Clara)

The high number of evs sales in these 3 countries can be attributed to several factors: population, government incentives, infrastructure, consumer preference for type of car maker, consumer preference for type of model of car, gas prices, and income level.

These counties are among the most populous and economically developed regions in California. Higher population density and urban centers lead to increased demand for environmentally friendly transportation options, such as electric vehicles. (Insert population numbers) The numerous programs to incentives people to switch to cleaner, less polluting vehicles offered by the government are numerous and growing for every type of clean vehicle out there. Can look up by zip code to see what programs are offered in your county and the huge incentives offered to buy clean vehicles are numerous, from the purchase of a clean vehicle to fueling of the clean vehicle, discounts for charging at home, and let’s not forget the driving benefits they also offer to clean vehicles. These factors can lead consumers to buy certain types of cleaner vehicles for the massive amount of money they can save which can add up to making a cleaner vehicle much cheaper to own and to drive. The amount people can save by opting to buy a cleaner vehicle is a massive amount which can even allow the lower end of the spectrum of income families to own a cleaner vehicle. Depending on the cleaner vehicle you may decide to purchase there is a possibility of a total package of $15,000 in incentives (<https://ww2.arb.ca.gov/sites/default/files/movingca/opportunities.html>) (<https://driveclean.ca.gov/search-vehicles?zipcode=94544>) in purchasing a cleaner vehicle which of course can be lower or be higher just depends on what the consumers can qualify for. The package also includes fuel/charging discounts for cleaner vehicles. The most important part for us feel that these 3 counties have the greatest numbers for cleaner vehicles than all other regions is solely because of the charging infrastructure. These 3 counties combined have more than half of all available charging/fueling stations in California at an outstanding 49,792 stations out of the 87,707 available in all the state. That comes out to a market share of 56.77% in just these 3 counties(<https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics/electric-vehicle>). With so many stations people won’t have a hard time finding a place to fill up when they need and won’t have the worry of running out charge/fuel. With so much already at consumers’ fingertips it’s very understandable why these 3 counties can have the highest numbers in cleaner vehicles sales than other counties. (Input data of car and model types preferred in these counties and price point.) Another incentive for owning a cleaner vehicle is how much you can save in driving a cleaner vehicle per year over a gasoline powered vehicle. Gasoline on average costs a consumer in California on average $5,450 per year while a cleaner vehicle like an EV can cost on average per year $4,406 so u get a savings of $1,043 which can be very big for consumers and another reason to switch. The savings don’t also end there, consumers can also save on insurance by $516, and maintenance on an EV per year can be $190 compared to gasoline powered vehicle which can cost $969 per year which amount to $779 in savings. The grand total savings per year in just these 3 areas is $2,338 per year. (Input income levels vs EV sales).

In conclusion to gain comprehensive insights into the factors driving the high EV sales in the top 3 counties of California, data on consumer preferences, specific EV models, MSRP price points, gas prices, income levels, and infrastructure development are needed. Analyzing this data will provide a clearer understanding of the underlying reasons for the popularity of electric vehicles in these regions and will assist policymakers and industry stakeholders in developing effective strategies to promote sustainable transportation across the state.

Question 2: Why do the bottom 3 counties have the least amount of evs sold? (Trinity, Lassen, Alpin)

The lower number of evs sales in these 3 counties can be attributed to several factors: Income levels, limited charging infrastructure, awareness and education, infrastructure for charging/fueling needs, the geographic terrain.

(Input data of income levels vs ev sales). The amount of charging stations in these 3 counties combined total 35 out the states 87,707 charging stations, their market share is a whopping 0.04%. Having such a low number of charging stations detours consumers in that region wanting to get a cleaner vehicle since the availability of the stations are not convenient to consumers and can also make them worry about breaking down on the side of the road. These counties don’t have the same number of incentives as the top 3 counties which also contributes to the lower sales and awareness for clean vehicles. On top of that these counties are not cities but towns and so they have a naturally lower population and the distance between can be far from each other and adding the fact that each county has 15 or less charging stations the worry of not being able to reach a fuel station for their clean vehicle is a major concern. Also, evs are not work vehicles they can’t do as much as trucks such as towing and hauling or have the distance of diesel vehicles. EVs are not yet a utility vehicle and to rural counties their vehicles have to be able to do more than just take them from point A to point B in an efficient and clean manner.

In conclusion the limited adoption of electric vehicles in the bottom 3 counties (Trinity, Lassen, and Alpine) can be attributed to various factors. To promote EV adoption in these regions, targeted efforts should focus on providing financial incentives, expanding charging infrastructure, conducting awareness campaigns, and addressing specific challenges related to rural geography and transportation options. Policymakers and stakeholders should work collaboratively to create a more conducive environment for EV adoption in these counties and promote sustainable transportation choices.

Question 3: What are the most popular ev types and why are they the most favorable?

The most popular EV types are all-electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). These EV types are considered more favorable for several reasons: Environmental benefits, costs savings, incentives, supportive policies, positive public perception, and health benefits.

(Input data from statistical analysis)

Both BEVs and PHEVs produce zero tailpipe emissions, which significantly reduces their carbon footprint compared to traditional gasoline-powered vehicles. They help combat air pollution and greenhouse gas emissions, contributing to environmental sustainability. Many governments and states offer incentives and tax credits to encourage the adoption of EVs. These incentives may include rebates, reduced registration fees, access to carpool lanes, and lower tax rates, making EVs more financially attractive. Many regions have implemented policies promoting clean energy and sustainable transportation. Governments are investing in charging infrastructure, setting emission reduction targets, and promoting the electrification of transportation. As EVs produce fewer emissions, they lead to improved air quality, which can have positive impacts on public health by reducing respiratory issues and other health problems associated with air pollution.

In Conclusion the popularity of all-electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) stems from their numerous advantages, including environmental benefits, cost savings, supportive policies, advancements in battery technology, and positive public perception. As more people become environmentally conscious and governments emphasize sustainability, the demand for these EV types is expected to continue growing, leading to a cleaner and more sustainable transportation future.