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# Understanding Today's Used Car Buyers Can Help Grow the Market for Used Electric Vehicles

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## Issue

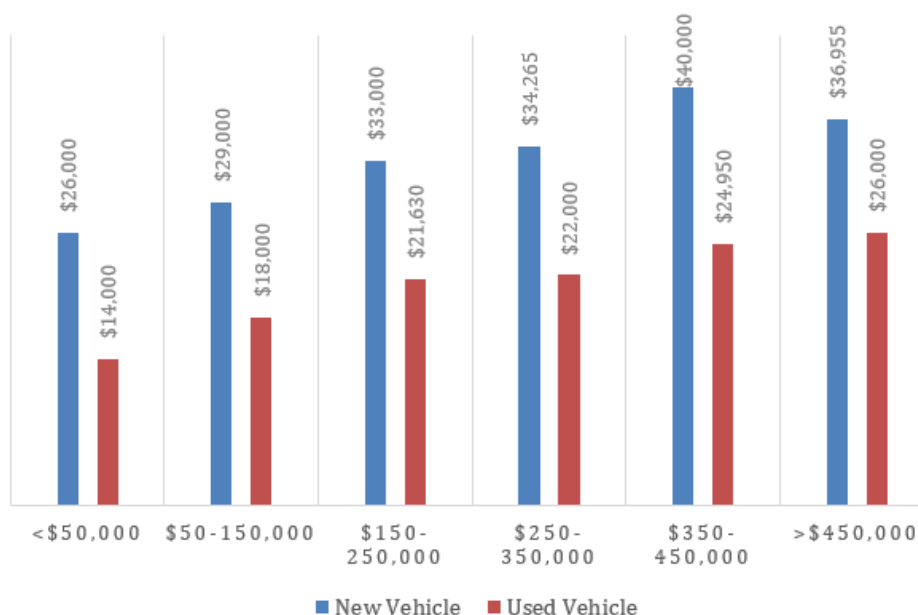
New car sales is the primary metric for measuring electric vehicle (EV) adoption, however, monitoring transition to EVs overall will require knowing more about what is going on in the used car market. While there is limited research on used EV buyers, examining the characteristics and vehicle costs of individuals who currently purchase used vehicles could provide some helpful insights. Our research team explored the financial impact of a household that typically purchases a used car, choosing a used EV instead. To do this, we analyzed consumer survey data that tracks households' expenditure on vehicle purchasing and operations on a national scale to identify why households opt for new versus used vehicles and the consequent cost of vehicle ownership.

## Key Research Findings

Income, household composition and size, and housing tenure (rent vs. own) are closely related to the choice of purchasing new versus used cars, trucks, and vans. For example, people who rent their homes or come from a larger household are more likely to purchase a used vehicle. Knowing this can help target EV incentives and investments

that best serve these populations, and in turn increase the likelihood of these households choosing an EV when buying their next (used) vehicle. Similarly, the used truck or van market includes households living in rural areas. Since there is currently limited availability of electric truck models in general, this finding may indicate that EV adoption by truck owners in rural areas will be slower since it will take longer for EV trucks to reach the used car market.

There are three main groups of used car buyers. Low-income single vehicle renters represent households who rent their homes, have the smallest family size and the lowest average income (\$52,868), and for the most part own a single used vehicle (99.8%). Affluent dual-vehicle owners are comprised of households that own their homes, have a higher average income (\$107,096) and own a mix of used and new vehicles (77.9% of households own one new vehicle and 69.3% own one used vehicle). Moderate-income multi-vehicle owners tend to own their homes, have a moderate income (\$83,204), and prefer used vehicles, with an average of two used vehicles per household (71.6%). Overall, our market analysis of used vehicle buyers found that low-income, single vehicle renters have the highest average ratio of annual vehicle ownership cost to annual household income at 61.7%, indicating a significant portion of their



|                     | Avg. Lowest Price | Avg. Highest Price |
|---------------------|-------------------|--------------------|
| 2019 Tesla Model 3  | \$31,205          | \$44,177           |
| 2017 Tesla Model S  | \$39,397          | \$50,806           |
| 2017 Nissan Leaf    | \$12,575          | \$14,681           |
| 2017 Chevrolet Bolt | \$20,012          | \$23,514           |
| 2019 Kia Niro EV    | \$26,113          | \$28,643           |
| 2017 BMW i3         | \$17,608          | \$21,069           |

Figure 1. Comparison of used vehicle prices paid by consumers for ICEVs vs listed used EV prices.

income is dedicated to vehicle expenses. In comparison, higher-income dual-vehicle owners have the lowest ratio at 23.2%, while moderate-income multi-vehicle owners fall in between at 28.7%.

The cost of a used EV is likely to be higher than what a household would typically pay for a used vehicle. On average, the price paid for a 1- to 3-year-old used vehicle by the low-income single vehicle renter group is \$17,280, however, the price of a used EV can vary between \$14,681 (2017 Nissan Leaf) to \$50,806 (2017 Tesla Model S), which doesn't provide this group a lot of options. Also, while some

lower range EVs may be comparable to conventional used vehicles in terms of purchase cost, the high range EVs are still more expensive than what households tend to pay for used vehicles.

## More Information

This policy brief is drawn from the report "Assessing the Cost of Ownership of Electric Vehicles among California Households" available at [www.ucits.org/research-project/rimi-3c](http://www.ucits.org/research-project/rimi-3c). For more information about findings presented in this brief, please contact Gil Tal at [gtal@ucdavis.edu](mailto:gtal@ucdavis.edu).

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