

The biggest barrier to a vibrant second-hand electric vehicle market? Price

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News policies and broader subsidies are needed to help lower-income buyers afford used electric vehicles, according to a Rutgers study.

As early adopters of [electric vehicles](#) (EVs) trade up for the latest models, the used EV market is beginning to mature in the United States. Yet many potential buyers, particularly low-income drivers, are skeptical of EV's conveniences and are put off by the price, according to a study conducted at Rutgers University–New Brunswick.

"While the transition to electric vehicles is an important piece of reducing greenhouse-gas emissions, the market for used electric vehicles in the U.S. remains dominated by wealthy households," said Wei San Loh, a former graduate student of the Edward J. Bloustein School of Planning and Public Policy at Rutgers–New Brunswick. "Our findings offer clues as to why that might be."

Loh's study is [published](#) in the journal *Transportation Research Part D: Transport and Environment*.

To understand what motivates buyers of different income strata to purchase second-hand electric battery vehicles, Loh and Robert B. Noland, director of the Rutgers Alan M. Voorhees Transportation Center, designed and conducted a nationwide survey of EV owners. Participants were recruited via electric vehicle discussion groups on Reddit and Facebook.

In addition to demographic and socio-economic data, participants were asked questions related to pre-purchase concerns, specifically on battery performance, charging availability, price, driving range, availability of used EVs on the market and the cost of installing a home charger.

In total, 1,167 owners of used electric vehicles in more than a dozen states were surveyed between September and October 2022.

By isolating for [household income](#), the researchers found price, charging availability and battery performance are the top concerns for buyers

when considering the purchase of a used electric vehicle. The concerns weren't shared universally, however.

Those with annual incomes below \$50,000 were more likely to be concerned about availability of charging stations than those making more than \$150,000, while those at the lowest end of the income spectrum were 32 percent less likely to worry about [battery performance](#) than those at the highest. Loh said lower-income drivers typically have shorter commutes, which could explain the disparity.

Additionally, owners of used EVs with annual household earnings below the national median of \$75,000 were more concerned with price than those whose household incomes top \$150,000 per year.

"Taken together, these findings suggest that EV demand may still not be widespread for lower-income households in the U.S.," Noland said. "Encouraging nationwide EV adoption will require broader uptake of new and used EVs from all income levels."

Loh, who now works at the University of Michigan as a senior statistician, said policy changes could help promote greater used EV uptake across income groups. Increasing the availability of charging stations and expanding subsidies for used vehicle purchases are two oft-discussed ideas, she said.

"Buyers will always compare EVs to [combustion engines](#)," Loh said. "That's why we need to think creatively about making it more attractive for people from different income brackets to consider the used EV option."

More information: Wei San Loh et al, Concerns expressed by used

electric vehicle owners based on surveying social media, *Transportation Research Part D: Transport and Environment* (2024). [DOI: 10.1016/j.trd.2024.104086](#)

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