

# Study recommends better EPA labels on cost of traditional vs. hybrid, electric cars

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(a) Labels for small/medium-sized car

Redesigned Environmental Protection Agency fuel economy labels on cars for sale are likely ineffective in pointing out total savings of hybrid and electric plug-in cars over gasoline vehicles, according to new research involving two University of Kansas professors in the School of Public Affairs & Administration.

The researchers found that consumers for small to mid-sized cars would be more likely to choose a hybrid or plug-in electric vehicle if they know the total cost of ownership instead of simply looking at five-year fuel cost comparison.

"The information of total cost of ownership is not yet included on the EPA fuel economy labels but seems to trigger consumer interest in conventional hybrid and plug-in vehicles based on our analysis," said KU SPAA assistant professors Bradley Lane and Rachel Krause, as part of the new study. "We find that when total cost of ownership information is disclosed to respondents interested in small- to midsized cars, the likelihood of ranking a conventional hybrid, plug-in hybrid and battery electric vehicle more favorably increases and is statistically significant."

The findings were published in the journal *Transportation Research Part A*, and the study originated at the School of Public and Environmental Affairs at Indiana University and Indiana University-Purdue University, Indianapolis. Co-authors included IUPUI professors Jerome Dumortier and Saba Siddiki. The research team conducted a 2013 online survey of 3,200 respondents in 32 U.S. cities who were planning to buy a new car within two years.

Lane and Krause said the findings were crucial for research on energy-saving technologies in the United States because of the EPA's investment in redesign of the labels and because studies in Europe had found that detailing fuel cost was enough to steer consumers to hybrid and [electric vehicles](#). However, they said in Europe because fuel prices in Europe are roughly double the U.S. average, consumers there are likely more sensitive to information about savings in fuel expenditures.

Also, U.S. hybrid and plug-in vehicle sales have slumped in recent years as they typically have a higher initial price than conventional gasoline vehicles.

The new survey found that when the labels added total cost information such as financing, depreciation, registration, maintenance and insurance costs, consumers in the market for small to midsize cars were more likely to choose a plug-in hybrid and battery electric vehicle.

"Upfront premiums in purchase price can be very hard to overcome. People have high personal discount rates, meaning that savings often need to be perceived as rather large and quickly accumulated to be considered 'worth' a more expensive upfront investment," Krause said. "In this study we find that showing savings from fuel-efficient vehicles compared with regular vehicles in terms of total cost of ownership increases the perception of their value – although, of course, their actual savings remains the same."

For example, a mid-sized gasoline vehicle had an annual [fuel cost](#) of \$1,845 compared with \$1,272 for a hybrid. Still, that difference was not enough to sway consumers to choose a hybrid vehicle. When the researchers changed the EPA label to reveal the total monthly cost of ownership for a gasoline vehicle was \$460 compared with \$448 for a hybrid, it gave a boost to consumers' preference for [hybrid](#) vehicles.

Krause and Lane said the difference was even more significant for electric vehicles.

"The results indicate to me that, for all that people claim or attempt to make decisions about vehicle purchase based on rational factors like cost, fuel efficiency and safety," Lane said, "there are quite a few other emotional factors—like brand and body style—and use factors—like size and carrying capacity—that usually trump those others, even though it costs them thousands of dollars over the life of the time they have the vehicle."

Lane said for example, the study found that adding total cost of

ownership to labels did not affect attitudes of potential buyers of small sport-utility vehicles even when shown a disparity in total cost.

However, Krause and Lane said they hoped results of the study could help bring more awareness to consumers about other options beyond gasoline-powered vehicles. The study could sway automakers and car dealers to consider including total cost of ownership in marketing brochures and ads, they said.

**More information:** Jerome Dumortier, Saba Siddiki, Sanya Carley, Joshua Cisney, Rachel M. Krause, Bradley W. Lane, John A. Rupp, John D. Graham, "Effects of providing total cost of ownership information on consumers' intent to purchase a hybrid or plug-in electric vehicle," *Transportation Research Part A: Policy and Practice*, Volume 72, February 2015, Pages 71-86, ISSN 0965-8564, [dx.doi.org/10.1016/j.tra.2014.12.005](https://doi.org/10.1016/j.tra.2014.12.005)

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