Understanding the Early Adopters of Fuel Cell Vehicles

A deeper understanding of the consumer adoption of fuel cell vehicles by presenting data about early adopters’ sociodemographic characteristics.

WHAT IS THE NEED?

Today, over 6,500 FCVs have been delivered to consumers, however, no research has been undertaken to understand the early adopters’ sociodemographic characteristics since the introduction of fuel cell vehicles (FCVs). Understanding these early adopters is helpful in guiding the market entry of new products, as sales activities and policy interventions can be formulated effectively and efficiently towards the target audience.

In this study, the research team will analyze data gathered by the Plug-in Hybrid & Electric Vehicle (PH&EV) center for the electric vehicle miles travel project to understand the early adopters. The data includes information on household sociodemographic (income, education, age, gender, household size etc.), household vehicles, travel patterns (commute distance, long distance trips), and locality to hydrogen fueling stations for more than 400 households that drive FCVs.

Furthermore, this study will help researchers to understand more about the consumers who are currently purchasing or leasing FCVs. It will provide policy makers with the insight of the consumers’ characteristics who are purchasing FCVs, such as their residencies and travel patterns.

WHAT ARE WE DOING?

The project will involve the following tasks:

- Task 1 - Data analysis
  Generating descriptive statistics on the socio-economic status,
ownership of previous alternative fuel vehicles (AFVs), household travel patterns, and attitudes towards sustainability for FCV adopters. The research analysts will adopt the Analysis of variance (ANOVA) to compare FCV adopters to battery electric vehicle (BEV) adopters.

• Task 2 - White Paper Preparation
  The research team will develop a white paper with the survey data results, which will be submitted to a journal, such as the International Journal of Hydrogen Energy.

• Task 3 – Data storage
  The researchers will store the research results and data in accordance with the data management plan.

WHAT IS OUR GOAL?

The research findings will help policymakers understand in greater detail what impact FCVs will have on the vehicle market, and whether the policies to promote FCVs adoption are having the desired impact on the market.

Moreover, the study will reveal if the introduction of FCVs will affect the demand for the ZEV, BEVs, and PH&EVs markets. The results will help in planning incentives, station locations, and other policies aimed to increase the total number of ZEVs.

WHAT IS THE BENEFIT?

The information will allow better calibration for forecasting models aimed to predict ZEV adoption, derived demand for energy, and changes in greenhouse gas. This will be the first data point on FCVs users that will help in future studies exploring the change in adopters’ characteristics over time.

The results will be useful to legislators in the California Assembly Transportation Committee, Transportation and Housing Committee, California Department of Transportation, California Energy Commission, California Air Resources Board, and other stakeholders.

WHAT IS THE PROGRESS TO DATE?

Currently, the researchers are compiling all the data regarding the socio-economic status, ownership of previous AFVs, household travel patterns, and attitudes towards sustainability for FCV adopters for data analysis.