

**Abstract:**

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What Will Travelers' Do? Short-term and Long-term Response to Gas Price Spike

A significant increase in gas price, known as a gas price spike, considerably influences travel behavior. People have considered reducing their fuel consumption by making fewer trips, choosing alternative commute modes, and changing household locations. Many studies suggest that travel behavioral changes, due to a gas price increase, are related to socio-economic, lifestyle, and neighborhood characteristics. This paper investigates perceived short and long-term responses to a hypothetical 100 percent gas price increase in Halifax, Canada. It uses stated response survey information from the Household Mobility and Travel Survey (HMTS) conducted in Halifax, Nova Scotia, Canada. The study takes a latent class modeling approach in which the class membership component of the model is examined in relation to the socio-economic and attitudinal attributes. The study examines the short-term and long-term behavioral changes in effect of socio-demographic characteristics, land use and accessibility measures, neighborhood characteristics, and attitudinal variables. The model results suggest that the latent class logit model outperforms the conventional multinomial logit model in terms of model fit. The short-term model results reveal that lower income individuals ride transit more often whereas higher income individuals are insensitive to the change of gas price. An individual's reason for changing household locations is strongly related to their short-term response. In the long-term, individuals with lower incomes tend to change work locations rather than home locations. People living farther than one kilometer from a transit stop show the highest propensity to change home locations. Persons who own more than one household vehicle are more likely to purchase a more fuel-efficient vehicle. Higher income persons are more likely to make no change in the long-term. The behavioral responses investigated in this study provide valuable information for policy-makers to develop strategies to improve readiness of the communities more effectively.