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Is there a 'Stick' Bonus? A Stated Choice Model for P&R Patronage incorporating Cross-Effects

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Abstract

This paper presents a universal logit model for P&R patronage. This model was estimated from a Stated Choice experiment, in which 805 car drivers chose among car, P&R and public transport alternatives. In addition to main-effects, attribute cross-effects were estimated denoting the utility change of an alternative due to changes in the attribute levels of another alternative. The results indicate that improving the levels of the P&R related attributes has a negligible effect on the utility of the car alternative, whereas worsening the levels of the car-related attributes increases the utility of the P&R facility. Considering the estimated main-effects as well as the estimated cross-effects suggests that 'stick' (push) policy measures are more effective to stimulate P&R patronage than 'carrot' (pull) policy measures. The paper further reports that the extension of the model by adding cross-effects to the main-effects resulted in a better model fit and that the resulting model could more accurately predict the choices for new observations.

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