

ACTIVITY BASED TRAVEL FORECASTING¹

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ABSTRACT

An examination of the theory underlying activity based travel forecasting models, and the classification of the differences among modeling approaches provide a framework which is used to compare six important examples.

Three examples are utility-based econometric systems of equations predicting probabilities of decision outcomes. One is trip-based, a second is tour-based, and the third represents an entire daily schedule. The first two are theoretically inferior but have been validated operationally. The daily schedule system integrates the sequence and timing of activities across tours but has been implemented only as a prototype.

Hybrid simulations use sequential decision rules to predict decision process outcomes. Each example assumes the decisionmaker uses a specific method to simplify a complex decision. The first classifies the alternatives into a small choice set of distinct classes, the second uses a structured search for a satisfactory schedule adjustment, and the third employs a sequential schedule building process. They have challenging data requirements, unvalidated search process assumptions and only partially functional prototypes.

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