

A Comparison of Travel Survey Methodologies

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Abstract

Travel surveys have served as the predominant source of information on travel demand characteristics, travel behavior, and origin-destination patterns for several decades now. Over the years, many different travel survey methodologies and survey instruments have been adopted and applied in various contexts around the world. The diversity, variety and complexity of travel survey methodologies and instrument designs has been recognized by the transportation planning community as an issue facing transportation planning agencies around the country. At a Conference on Household Travel Surveys held in Irvine, California, the need for comparing travel survey methods was identified as a critical research problem. This study constitutes a preliminary first-cut effort at performing such a comparison.

As the array of travel survey methods and instrument types has expanded, transportation planners are faced with an ever-increasing number of choices. Planners are faced with the dilemma of choosing between several means of survey administration including computer-aided techniques, self-administered mail out and telephone interviews. In addition, several types of survey instruments are available including diary and non-diary formats, activity vs. trip diaries, and multi-day vs. one-day surveys. The combinations are numerous. However, there is very little information in the transportation literature on the comparative benefits and costs of these methods in terms of cost per respondent, survey response rates, items non-response, response bias, vehicular and non-vehicular trip rates, and ease of data entry/coding. In this regard, this study will draw from other fields of research including market research, psychology, and sociology.

Even though a comparative study of survey designs should ideally be done under controlled conditions (different surveys administered to the same sample in the same context), such an effort would be extremely time consuming and expensive. As such, for this study, information on various travel surveys that have been conducted around the world in the past five years has been collected to facilitate a first-cut preliminary comparison across travel survey methods and designs. Information on response rates, trip rates and costs per respondent have been collected for about 215 household travel surveys representing a diverse mix of methods and designs. The presentation will report on a comparison of these travel surveys and discuss implications for travel survey design in different planning contexts. The analysis in the study will identify aspects and factors of survey design that influence response rates, item non-response, and missing data. The study attempts to develop a predictive model of response rates as a function of various survey design parameters including, but not limited to the length of survey, presence or absence of an incentive, diary or non-diary format, and single-or multi-stage administration.