FACTORS AFFECTING SHOPPING TRIP GENERATION RATES
IN METROPOLITAN AREAS

K. MERT CUBUKCU
Austin E. Knowlton School of Architecture
City and Regional Planning
The Ohio State University
Revised: August 1, 2002

ABSTRACT

This paper attempts to answer two specific questions on trip generation: (1) What are the factors that affect the total number of shopping trips in North American metropolitan areas, and (2) Did the demand for technology-related products, and telecommunication technologies, and emerging interest in on-line shopping, have any observable effect on personal shopping trips generated in these areas in the early stages of the Internet? The estimated model is linear in the continuous independent variables and linear in the logarithms of the continuous dependent variable. The dependent variable is the total annual number of shopping trips. The explanatory variables include (1) shopping related characteristics of the metropolitan areas (total number of retail establishments, population density, general climatic conditions), (2) socio-economic characteristics of the trip makers (age, income), and (3) technology-related trip maker characteristics (computer ownership, modem ownership). The empirical findings, based on OLS estimation of 1995 data for 49 metropolitan areas with population over 1 million indicate that total number of retail establishments, percentage of the population between ages 34-54, percentage of days with convenient temperatures for shopping, and computer ownership are positively related to shopping trip generation rate. Population density and modem ownership are negatively related. The relations are statistically significant at the .01 level for all the variables but temperature, which is significant at the .05 level. The model estimates that the net number of annual shopping trips decrease by between 1.47 and 21.92 millions for the metropolitan areas in the sample, when both computer ownership and modem ownership are increased by one percent. Thus, findings indicate a negative net of these technology-related factors shopping trip generation in the mid 1990’s, when the Internet revolution has just started. However, the current model does not explain whether these trips are eliminated or replaced by other trips.