

Assessing Seasonality and Climatic Variability in Walking and Related Activities in the United States with Time Use Data

Walking and related activities (i.e. other forms of non-motorized transportation and recreation) are important physical activities for adults that impacts public health and can reduce the risks associated with inactive lifestyles. Additionally, these activities offer improvements to quality of life and mobility, and are known to reduce transportation energy use, tailpipe emissions, land required for parking and reliance on automobiles. It has been well established that socioeconomic status and home location affect levels of walking and related activities. The impacts of season and weather on this subject have been largely understudied in both the transportation engineering and the public health professions.

In this study, data from the American Time Use Survey (ATUS) and Current Population Survey (CPS) from 2003 through 2012 are used to observe and analyze the influences of climate and season on pedestrian behavior nation-wide while controlling for sociodemographic characteristics of the respondents and their household. The ATUS is designed to be representative at the national level, and includes over 130,000 observations from 2003 through 2012 that are analyzed in this study. Binary logistic regression and general linear modeling are used to analyze factors that affect walking levels. Results of this study show significant variation in walking across climatic regions and seasons.

While we cannot change season or weather to increase levels of walking, understanding the spatial and climatic variation in pedestrian activity allows for the development of interventions to advance more active healthy lifestyles that combat obesity, cardiovascular health and other disease. In addition, this study aims to demonstrate the utility of the ATUS for active transportation research as few applications of the data for this purpose have been documented.