

Usage of Large Scale Mobile GPS Data: Detection of Weather Effect to After Work Habits of Office Workers in Tokyo

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ABSTRACT

Weather condition is part of our everyday life and we know that it has effect in our decision for our activity choices. This explores the weather effects on people's everyday activity pattern, specifically, on the after work activity patterns of office workers in Tokyo, Japan. Activity people of where estimated using GPS traces of their mobile phone captured for 1 year overlaid with Yellow pages information. Start and end of working time in Japan depends on each company but usually it is around 8:00-17:00 or 9:00-18:00. For this study, times from 18:00 are considered the after work hours. Using weather data in Tokyo, effects of different weather parameter, such as precipitation amount, temperature and wind velocity, to changes in workers after work activity pattern were studied to see prominent and sudden changes in workers choice of activity from their usual activity pattern that might be affected by changes in weather. This study sheds light in understanding influences of weather conditions on office workers' choices of their daily activities and how mobile phone data can be used to investigate influences of environmental phenomena to urban activities.

Keywords: GPS, Activity Pattern, Weather Effects, Mobile Phone