Telecommuting and commute trip behavior for a sample of government employees in Tehran

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Abstract
Telecommuting is considered a partial substitute for work commute trips with diverse positive impacts. Although still not practiced formally in Tehran, there is a potential demand for telecommuting, particularly among the information (government) employees. Due to the traffic congestion problem in Tehran, a research project (Teleworking Impact Study for the City of Tehran) was initiated to investigate and analyze this transportation demand management strategy for the city of Tehran to identify the corresponding commute trip behavior, predict the demand for telecommuting and to assess its transportation impacts. This project is the first formal and applied project dealing with telecommuting in Iran at such a field study level. Previous studies dealing with telecommuting in Tehran include graduate theses, which were mainly conducted on a small dataset gathered by the author of this paper for his PhD dissertation [1] in 2003. Following the concept of Abstract Job Approach [2], and considering the data limitations, a similar approach was designed to gather the necessary data for a more practical and larger scale study. This paper describes some results of the first phase of this project including the questionnaire survey designed and administered exclusively for the purposes of telecommuting option in 2007 for a sample of government employees and their supervisors or managers [3]. It discusses the selection of the sample based on job attributes and characteristics. The paper also illustrates the different characteristics of potential telecommuters and the telecommuting and commute trip behavior based on statistical analyses conducted on the revealed and stated preference data gathered through the in-person interview. Major issues include commute trip characteristics, like the chosen travel mode, home-work trip distance and time; socio-economic characteristics, like age and education; center-based telecommuting days per week; job and organizational characteristics, like office type, job category, department group and organizational position (which are the set of data available about jobs at the organizational level in Iran and thus are defined precisely, compared and contrasted to each other to get a view of their meaning and why they should or should not be meaningful in telecommuting behavior). Statistical analyses conducted on the data indicate that considering job characteristics, about 26, 16, 39 and 19 percent of the sample are suitable for 0, 1, 2, and 3 or more days telecommuting per week, respectively. An important result of the survey is the predicted feasibility of more than 1.5 days telecommuting per week for the mean respondent, which considering a 5 work-day week, results in more than 30 percent omission of commute trips to the conventional office, generally located in the CBD. Frequency distribution of the mode used by respondents for work commute trip is 25, 11, 15, 40 percent, respectively, for private auto, bus, taxi and company provided transport service. Only less than 2 percent walk to work, less than 1 percent use bicycle or motorcycle, less than 2 percent take minibus and less than 0.5 percent take metro to work. Their preferred mode to travel to telecenters assumed to be a 15 minute walking distance or about 5 minute drive (by car, bicycle or motorcycle) is 85 percent on foot, 10 percent unspecified and the rest distributed between the other modes up to 2 percent. Other results and indications of the survey are also covered in this paper through tables and figures, as a first time applied study of telecommuting in Tehran. Tests of different hypotheses on the data regarding telecommuting and commute trip behavior will be presented and interpreted. For example, department group and job (organizational) category do not seem to be very different or independent, whereas office type and organizational positions seem to be independent and meaningful in telecommuting behavior.

Keywords: telecommuting, commute trip, behavior, questionnaire, government employees.
References