Assessment of active commuting behaviour
– walking and bicycling in Greater Stockholm

av

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Abstract


Walking and bicycling to work, active commuting, can contribute to sustainable mobility and provide regular health-enhancing physical activity for individuals. Our knowledge of active commuting behaviours in general and in different mode and gender groups in particular is limited. Moreover, the validity and reproducibility of the methods to measure the key variables of the behaviours are uncertain. The aims of this thesis is to explore gender and mode choice differences in commuting behaviours in terms of distance, duration, velocity and trip frequency, of a group of adult commuters in Greater Stockholm, Sweden, and furthermore to develop a criterion method for distance measurements and to assess the validity of four other distance measurement methods. We used one sample of active commuters recruited by advertisements, n = 1872, and one street-recruited sample, n = 140. Participants received a questionnaire and a map to draw their commuting route on. The main findings of the thesis were, firstly, that the map-based method could function as a criterion method for active commuting distance measurements and, secondly, that four assessed distance measurement methods – straight-line distance, GIS, GPS and self-report – differed significantly from the criterion method. Therefore, we recommend the use of correction factors to compensate for the systematic over- and underestimations. We also found three distinctly different modality groups in both men and women with different behaviours in commuting distance, duration and trip frequency. These groups were commuters who exclusively walk or bicycle the whole way to work, and dual mode commuters who switch between walking and cycling. These mode groups accrued different amounts of activity time for commuting. Through active commuting per se, the median pedestrian and dual mode commuters met or were close to the recommended physical activity level of 150 minutes per week during most months of the year, whereas the single mode cyclists did so only during the summer half of the year.

Keywords: walking, cycling, commuting, validity, reproducibility, distance, duration, velocity, frequency, seasonality.

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