交叉路口高齡者與孩童步行速率之調查與分析

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摘要

Pedestrian walking speed is an important parameter in pedestrian-vehicle traffic accident investigation and pedestrian signal design at signalized intersections. Age is one of the major factors influencing pedestrian walking speed. The elderly and children usually have lower walking speeds due to the weakness of their physical capabilities. In addition, both of these two types of pedestrians are the high risk groups in pedestrian traffic accidents because of their insufficient perception to traffic accident risk and impaired judgement and long reaction time. This study aims to survey and analyze the walking speeds of elderly pedestrians and child pedestrians under various pedestrian and environmental characteristics through a field survey with cameras at intersections and an image processing analysis. Results show that the mean walking speed and 15th percentile walking speed for a single elderly pedestrian is 0.89 meters per second and 0.73 meters per seconds, respectively. The mean walking speed and 15th percentile walking speed for a single child is 1.15-1.17 meters per second and 0.98 meters per seconds, respectively. Various pedestrian and environmental characteristics result in different pedestrian walking speeds. Results of this study will be helpful in developing a pedestrian walking speed database in Taiwan. Moreover, the value of pedestrian walking speed can provide a useful basis for the pedestrian traffic accidents investigation and the pedestrian traffic devices design.

關鍵字：Walking Speed, Traffic Accident Investigation, Signal Timing Design, The Elderly, Children