

Ergonomic perspective: mismatch between seat drivers and anthropometric measures of elderly taxi drivers in Malaysia

ABSTRACT

The ageing community may keep resuming their service even after the pension, which was influenced by their previous work environment. One of the occupations that elderly individuals could engage in is taxi drivers. Feelings of discomfort are generated among drivers when there is a mismatch between the product/device and the user. This study's principal objective is to assess the mismatch between seat drivers and anthropometric measurements among elderly taxi drivers to improve their work environment in terms of safety and health. A cross-sectional study was led utilizing a self-administered survey instrument that involved four taxi cars from Proton products on seat measurement. Secondary data applied to obtain anthropometric measurements of elderly taxi drivers, which involved 56 elderly (male) drivers. The anthropometric parameters and seat parameters measured. The mismatch can be determined at any value over 95% or less than 80% of the respondents' total number. The measurements between 80% to 99% are classified as matched to the reference value of the respondents. The cushion width based on the proposed size at 95th percentiles show as much as 91.8% is matched to the width of the hip of the elderly taxi drivers. The backrest width which refers to the proposed measurement at 95th percentiles matched 94.0% the length of elderly taxi drivers' shoulder. The proposed cushion length measurement with knee-length to the buttock of elderly taxi drivers at a 5th percentile is 92.8% matched. The study provides a concrete foundation to identify a mismatch between current seat size with anthropometric of elderly taxi drivers that cause injury or pain due to discomfort while driving in Malaysia. It also helps us initiate the prevention of musculoskeletal disorders (MSDs) in health and safety. The baseline data is believed to benefit the automotive industry before the designing process.

Keyword: Anthropometric; Elderly; Taxi driver; Mismatch; Ergonomics; Malaysia