

Trends in Elderly Drivers Population and Misapplication Accidents in Japan

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In recent years, accidents caused by unintended driver operations, such as pedal misapplication, have been reported to occur disproportionately among elderly drivers. In addition to age-related declines in physical and cognitive functions, the increasing proportion of elderly drivers in road traffic may also have contributed to this trend. Therefore, this research aimed to compare annual changes in the proportions of elderly people in the population, the proportion of traffic exposure accounted for by elderly drivers, and the proportion of elderly drivers among those who caused pedal misapplication accidents, and to examine the relationships among these trends.

Changes in the age composition of the population in Japan from 1992 to 2024 were investigated using population estimates from the Statistics Bureau of Japan. In addition, traffic accident macro statistics from the Institute for Traffic Accident Research and Data Analysis (ITARDA) were analyzed for the same period. Age-specific traffic exposure was estimated using the age distribution of second parties in rear-end collisions as a traffic exposure index, and changes in traffic exposure were investigated. In addition, the age composition of drivers who caused pedal misapplication accidents was investigated.

The proportion of people aged 65 years and older among the population aged 18 years and over in Japan increased from 17.7% in 1994 to 34.0% in 2024, a 1.9-fold increase over the past 30 years (Fig.1). In contrast, the proportion of elderly drivers in road traffic increased from 2.5% in 1994 to 11.8% in 2024, a 4.8-fold increase (Fig.2), indicating that the aging of the driver population has progressed more rapidly than that of the population aged 18 years and over. In pedal misapplication accidents, the proportion of elderly drivers increased from 9.7% in 1994 to 54.0% in 2024 (Fig.3). Even in 1994, this proportion (9.7%) was substantially higher than the corresponding traffic exposure index (2.5%), indicating that pedal misapplication accidents have long occurred at a higher rate among elderly drivers. In recent years, elderly drivers have accounted for more than half of the drivers who caused pedal misapplication accidents. Thus, the growing presence of elderly drivers in road traffic may have contributed to recent changes in accident trends.

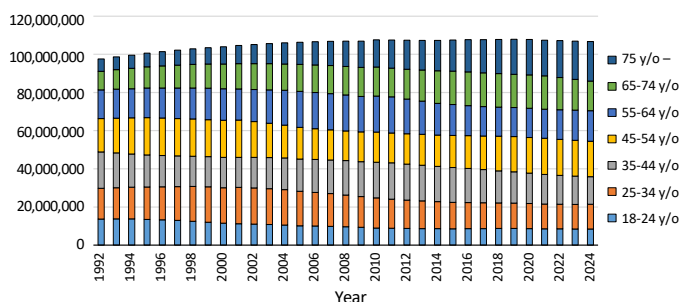


Fig.1 Population trends by age group in Japan (aged 18 years and older)

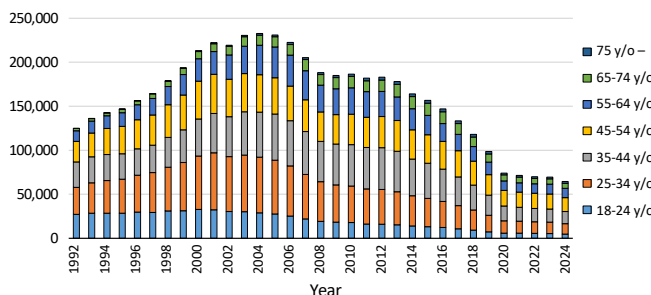


Fig.2 Number of secondary-party drivers in rear-end collisions

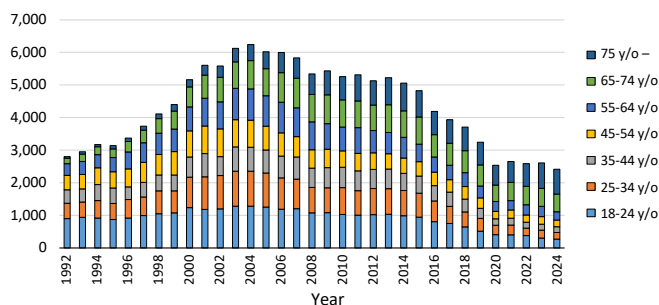


Fig.3 Number of first-party drivers in pedal misapplication accidents