

# Contributing factors to driving errors in trucking industry: drivers' individual, task and organisational attributes

---

Ya Li & Kenji Itoh  
Tokyo Institute of Technology  
Japan

## Abstract

The present study explored contributing factors to traffic accidents involved by occupational truck drivers by analysing 10-year incident records collected from 18 trucking companies in Japan. A total of 1292 drivers' records were collected, each of which specified a driver's individual attributes – including his/her task- and organisation-related factors – and history of incident cases for the recent ten years. As the driver's individual attributes, each record included age, gender, work experience, penalty points on driving license, and scores of an “aptitude test” which comprised five personality/attitude traits and four sensorimotor functions. Examples of task-related variables were vehicle type, vehicle's carrying capacity, driving area and annual working days. From results of the Mann-Whitney test with the recent three-year incident data, it was suggested that truck drivers' emotional stability and safety attitudes contribute to safety performance on the road. As other influential factors, results derived from the Chi-square test revealed lower risk of traffic accidents for drivers having the following characteristics: no penalty point on the driving license, longer occupational experiences, shorter driving distance per year, engaging in short-distance delivery and working in a smaller-sized company.

## Introduction

Traffic safety has been recognised as one of the most important social issues to address in Japan although the number of fatalities by traffic accidents has decreased by half during the last two decades, i.e., 11,227 in 1990 and 4,863 persons in 2010 (TPDTA, 2011). In addition, like in western countries (Clarke et al., 2005), occupational drivers are involved in more road accidents compared to ordinary, non-occupational drivers in Japan. The fatal accident rate per 10,000 vehicles for commercial vehicles, e.g., trucks, buses and taxicabs, was three times higher than that of private automobiles for the last ten years (IATSS, 2010). Therefore, it is of great importance to explore contributing factors of occupational drivers to safety performance.

In the present paper, we uncover important driver factors contributing to safe driving performance in the trucking industry. Driver attributes are collected from three major aspects of occupational truck driving: driver himself/herself, task and