# Lessons learned from characteristics of extraordinarily severe traffic crashes in China

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## ABSTRACT

China has experienced remarkable achievements in terms of reducing the number of extraordinarily severe traffic crashes (ESTCs) that cause more than 10 deaths each crash. However, ESTCs still occur occasionally and result in extremely adverse social impacts. This study aims at investigating the common characteristics, characteristic patterns, and changes of characteristics of ESTCs in China with the expectation to learn from the past and act for the future. A total of 373 ESTCs occurred in 2004-2019 were collected, and characteristics of driver factors, road factors, vehicle factors, environment factors, and other factors were analyzed through the multiple correspondence analysis (MCA). The results show that run off road crashes, not qualified drivers, improper driving, large bus, overload, class II highway, and straight road sections are the most common categories of characteristics. In addition, four underlying characteristic patterns are identified through the MCA. Significant changes in characteristics and characteristic patterns are also found, and these changes are the results of various law enforcement, safety policies, educational interventions, and engineering interventions. It is also inferred that the specific law enforcement targeting to certain category of characteristics is more effective than the corresponding safety campaigns or policies in terms of ESTC prevention.