Use of the safety factor and margin of safety in motorcyclist accident risk management

Don Gaspar Noesaku da Costa, author

Abstrak

Deceleration rate, time to collision and impact speed have been commonly employed as accident risk indicators. However, it is hard to assess the level of accident risk since these indicators have not been developed with measurable score criteria. This study focuses on the determination of measurable risk indicators which could be used to assess accident risk level and to determine more appropriate accident risk management strategies by using the descriptive qualitative approach. The data were collected from a braking maneuver test conducted on a dry and level closed circuit course. Risk was a function of accident probability and its possible consequences, while accident probability was determined based on the safety factor, i.e. the ratio of available stopping sight distance (ASSD) to minimum SSD (MSSD), which was used to determine the margin of safety. Subsequently, accident consequence was determined using the impact speed at a predicted point of collision along the braking distance path. The results show that accident risk could be easily determined using the proposed indicators, whilst an objective and appropriate accident risk management strategy could be determined based on the minimum margin of safety value which could be obtained from each risk exposure.