Pedal Error Naturalistic Driving Study Among Malaysian Drivers

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Abstract The article discussed about pedal misapplication or pedal error among Malaysian drivers. The variability of driver's foot movement could result in an error in foot placement. The farther the foot from the intended pedal, the larger the potential errors to occur while hitting the pedal. The goals of this research are to conduct a study to determine the Malaysian driver's foot placement on pedal and the total emergency braking response during the normal driving and emergency braking situation, and also to define the sources of foot placement errors and factors which contributing to the wrong pedal placement among Malaysian drivers. The scopes of this research are to develop a test setup to determine the foot placement on pedal by using video observation and measure the total emergency braking response by using force sensor, to determine the source of foot placement errors and to define the factors contributing to the wrong pedal placement. The study is limited to automatic transmission car, Malaysian drivers aged from 20 to 65 years old. In order to conduct the naturalistic driving test, an instrumented car is prepared and equipped with some important instruments such as cameras, force pressure sensor, light cue device, audio cue device and Arduino hardware. A study has been successfully conducted to determine the Malaysian driver's foot placement on the pedal during the emergency braking. According to our research, 10% of the participants from the driving study conducted use both legs while driving and press the brake pedal using their left foot during emergency braking. It is dangerous for other drivers because the brake light can turn on at any time, causing other drivers to become distracted.

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