The Relationship Between Car Drivers' Background Information and Risky Events In I- Dreams Project

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Abstract : This study investigated the interaction between the drivers' socio-demographic background information (age, gender, and driving experience) and the risky events score in the i-DREAMS platform. Further, the relationship between the participants' background driving behavior and the i-DREAMS platform behavioral output scores of risky events was also investigated. The i-DREAMS acronym stands for Smart Driver and Road Environment Assessment and Monitoring System. It is a European Union Horizon 2020 funded project consisting of 13 partners, researchers, and industry partners from 8 countries. A total of 25 Belgian car drivers (16 male and nine female) were considered for analysis. Drivers' ages were categorized into ages 18-25, 26-45, 46-65, and 65 and older. Drivers' driving experience was also categorized into four groups: 1-15, 16-30, 31-45, and 46-60 years. Drivers are classified into two clusters based on the recorded score for risky events during phase 1 (baseline) using risky events; acceleration, deceleration, speeding, tailgating, overtaking, and lane discipline. Agglomerative hierarchical clustering using SPSS shows Cluster 1 drivers are safer drivers, and Cluster 2 drivers are identified as risky drivers. The analysis result indicated no significant relationship between age groups, gender, and experience groups except for risky events like acceleration, tailgating, and overtaking in a few phases. This is mainly because the fewer participants create less variability of socio-demographic background groups. Repeated measure ANOVA shows that cluster 2 drivers improved more than cluster 1 drivers for tailgating, lane discipline, and speeding events. A positive relationship between background drivers' behavior and i-DREAMS platform behavioral output scores is observed. It implies that car drivers who in the questionnaire data indicate committing more risky driving behavior demonstrate more risky driver behavior in the i-DREAMS observed driving data.

Keywords : i-dreams, car drivers, socio-demographic background, risky events
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