Mixed Fleet Risk Management

A client operating a large mixed UK fleet provided a dataset of 1260 incidents recorded in the period 2010 to 2014, which was referenced against the DriverMetrics® Profiling dataset of 2145 assessment completions. The datasets were combined using employee reference numbers to match profiling participants with incident records.

Analysis was carried out to identify relationships between DriverMetrics® Profiling outcomes and incident involvement, and the results are outlined below. Given the complexity of the combination of contributory factors which lead to a crash, any ability of a behavioural assessment in detecting differences in crash involvement is compelling evidence of its diagnostic ability.

The analysis indicated:

- Incident-involved drivers were slightly older on average than incident-free drivers, indicating that age (and experience, as these are very strongly linked) is unlikely to be having a significant impact on incident risk. There were more high-mileage drivers in the incident-involved group than in the incident-free group, which indicates some relationship between exposure and crash frequency, but the majority of incident-involved drivers were not high mileage.

- Incident-involved drivers were more commonly high risk on Aggression, Work Related Risk, Fatigue and Confidence than incident-free drivers, supporting the utility of the DriverMetrics® Profiling factors in detecting crash-involved drivers.

- Statistically significant differences were found between incident-involved and incident-free drivers for Aggression, Driving Excitement and Work Related Risk. Non-significant differences were seen on the Driving Fatigue, Driving Concerns, Self-Evaluation and Impression Management factors.

Case Study

Results

The relationship between incident frequency and Work Related Risk was linear (e.g. as crash frequency increased, so did Work Related Risk scores), and the same was seen for Self-Evaluation. The other factors showed a different pattern, suggesting a degree of behavioural adjustment corresponding to an incident (e.g. incident acting as behavioural intervention), but with a subset of drivers who do not calibrate their behavioural approach in response to an incident and go on to have further incidents.

The Impression Management factor was lowest among highest crash-frequency drivers, which may be the result of interventions triggered after repeated incident involvement which enhance self-appraisal accuracy.

- Higher total incident costs over the time period studied were associated with higher levels of Aggression, Driving Excitement, Confrontation and Impression Management. These findings are consistent with expectations based on previous research on the relationship between aggressive and thrill seeking tendencies and crash involvements.

  High total cost was associated with lower Work Related Risk, Driving Fatigue and Driving Concerns, which is an interesting finding. The relationship could be mediated by a number of factors including low self-awareness, a prevalent "don't care" attitude, or incident-as-intervention, but this would benefit from further exploration with a broader dataset.

- Differences between car, van and commercial vehicle drivers were observed for Aggression, Driving Fatigue, Driving Concerns, Impression Management and Confidence. This supports the use of the separate Truck profiling tool for large vehicle drivers as they have a different typical profile, and possibly the use of a separate profiling benchmark for car drivers and van drivers.

  Van drivers were high in Impression Management, indicating that they feel higher pressure to provide the "right answers" in response to the assessment. This may be the result of a cultural difference between the fleets within the organisation.

- Injury incidents were associated with significantly higher risk on Impression Management and non-significant differences on Confrontation, Driving Concerns, Driving Focus and Self-Evaluation. This supports the utility of DriverMetrics® Profiling in identifying elevated levels of key risk factors in drivers with a propensity to be involved in injury collisions.

Overall the data shows that DriverMetrics® Profiling differentiates effectively between incident-involved and incident-free drivers and between drivers with different types and levels of incident involvement, supporting its utility in identifying the core behavioural factors contributing to drivers' crash risk, and enabling the deployment of targeted interventions to mitigate these risks in order to minimise their likelihood of resulting in further incidents.