

Review of Research Methodologies in Investigating Work-Related Driving Behaviour

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Abstract

This paper reviewed research in work-related driving safety with a particular focus on the current methodologies used to investigate driving behaviours in work settings. Results from this review demonstrated that the majority of past research have utilised questionnaires to measure work-related driving behaviours, but an increasing number of research are utilising in-vehicle monitoring systems as an alternative method. Other methodologies include: interviews, observational studies and crash analysis. Strengths and limitations of each methodology will be discussed as well as the practical implication and benefits of implementing both traditional and innovative measures in work-related driving safety research.

Background

Due to the over representation of work-related road trauma and injury, there is a growing interest in examining work driving safety and recent years have seen an increase of studies in the field of work-related driving research. Yet gaps in the knowledge gaps still exist, in particular, current methodologies utilised to measure work-related driving behaviour poses several limitations and challenges. Some of the issues include: over-reliance on self-report measures and lack of psychometrically validated instruments. For instance, most research on work driving behaviours utilises the Manchester Driving Behaviour Questionnaire (DBQ) (Reason, Manstead, Stradling, Baxter, & Campbell, 1990) that was initially developed to measure general driving behaviours (Newnam, Greenslade, Newton, & Watson, 2011). However, this questionnaire fails to adequately capture other risky behaviours that are specific to the work-related context such as, driving under work pressure, or answering work-related calls and messages while driving (Newnam et al., 2011). This paper will review research on work-related driving safety with a focus on current methods used to measure work-related driving behaviours.

Method and Results

PsycINFO, ScienceDirect, CINAHL and Medline were searched for relevant literature on work-related driving behaviours using the keywords: *driving behaviour*, *work-related*, *organisations*, *fleet* and *commercial*. Inclusion criteria for the review were: (1) papers written in English; (2) peer-reviewed; (3) articles published within the last 30 years (from 1986 to present); (4) studies that assessed work-related driving behaviours. Papers that specifically focus on heavy vehicles (e.g., trucks and buses) were excluded as driving heavy vehicles require additional skills from driving light vehicle fleets (Roads and Maritime Services, 2014). Over 30 studies met the criteria. Results showed that research on work driving behaviours typically utilises questionnaires to measure driving behaviours in work settings, which often lack psychometric validity. The Manchester DBQ and variations of it were typically used to measure work driving behaviours. However, this questionnaire often fails to fully capture the risks that are specific to work drivers. Recently, increasing number of research are utilising in-vehicle monitoring system to measure work driving behaviours. While this methodology offers a more objective approach to measuring driving behavior, it also has its challenges and limitations (e.g., costs, data collection and analysis, expertise of use). Other methodologies include: interviews, crash data analysis and observational methods.

Conclusions

Research on work driving safety have mostly utilised self-report measures to investigate work driving behaviours. With the advent of new technologies and increased accessibility of in-vehicle monitoring systems, innovative methodologies could be combined with traditional research methodologies to improve the measurement of work-related driving behaviour and consequently, advance the current knowledge of work-related driving safety. For instance, self-report questionnaires could provide subjective data on work driving behaviours, while in-vehicle monitoring systems could provide objective measures of driving behaviours along with an opportunity to collect and analyse data that may relate to critical events (e.g., crashes, harsh braking and excessing speeding) (Horrey, Lesch, Dainoff, Robertson, & Noy, 2012; Newnam, Lewis, & Warmerdam, 2014).

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