Do management practices support or constrain safe driving behaviour? A multi-level investigation in a sample of occupational drivers

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ABSTRACT

It has been estimated that one-third of all work-related deaths occur while driving for work-related purposes. Despite this, many organisations are unaware of the practices, beyond those that identify and control the impact of unforeseen events (i.e., risk management), that predispose drivers to risk. This study addresses the issue by identifying the management practices operationalised as, High Performance Workplace Systems (HPWS) that influence safe driver behaviour. The study also explores the value given to safety by senior level management as a moderator of the relationship between HPWS practices and driver behaviour. Each factor was tested within a two level hierarchical model consisting of 911 drivers, nested within 161 supervisors and 83 organisations. The findings highlight that under conditions of high investment in job and work design, communication and selection practices, drivers reported poorer driving behaviour. An interaction effect also demonstrated that under conditions of high investment in remuneration, drivers reported safer behaviour, but only when they perceived that managers valued and prioritised safety. The findings challenge current thinking in the management of workplace road safety.

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1. Introduction

Road traffic injury is the leading cause of work-related death in Australia. It has been estimated that one-third of all work-related deaths occur while driving for work purposes (Driscoll et al., 2005). This emerging public health issue is not unique to Australia, with work-related road traffic deaths estimated to account for 22% of work fatalities in the United States and 16% in New Zealand (Driscoll et al., 2005). Despite this, many organisations employing individuals to drive a vehicle as part of their work are unaware of the factors that may act to reduce work-related road traffic injury and deaths.

Research has demonstrated the relationship between a positive safety climate and safer driving behaviour. Although this knowledge has advanced preventive activities (eg., cultural change programs; Newnam et al., 2012), safety goals can conflict with other organisational imperatives such as profitability. Both goals are important but can make competing demands upon limited resources (Rasmussen, 1997). It is not clear how organisational practices that enhance overall performance relate to the driving safety of employees. On the one hand, management practices that improve performance might have a positive impact on employee work safety (Zacharatos et al., 2005). On the other hand, employee driving activities are often poorly integrated with other work practices (Newnam et al., 2008), so investment in better work practices might create competing demands with safer driving.

The current study investigates management practices that have been found to support performance-based activities in the organisation, namely High Performance Workplace Systems (HPWS). HPWS practices have been defined as distinct but interconnected human resource management practices that are designed to maximise individual employee contributions. This study aimed to address this issue by exploring a range of HPWS that are capable of supporting or constraining safe driver behaviour. This study also explored how drivers' perceptions of the value and priority given to safety plays a role in creating safe driving practices.

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1.1. Importance of the organisational context

Better understanding of the organisational factors influencing a safe working environment is critical to our ability to reduce work-related road traffic injury and deaths. In recent years, a growing body of research has emerged demonstrating that leadership is a key factor in supporting organisational performance and that effective safety leadership has a positive influence on supporting safe performance, and the prevention of incidents and injuries in high-risk industries (Donovan et al., 2016). For example, the quality of management practices within organisations have been linked to reduced injury rates (Zacharatos et al., 2005). However, these processes might not apply in a context where performance (ie., driving activities) falls outside typical line-management responsibilities and are often supervised by a person (e.g., a fleet manager) who is not part of the same management structure associated with other work roles. That is, fleet managers are traditionally employed to manage the risk associated with the asset (ie., the vehicle), not the behaviour of the personnel operating the asset (Newnam et al., 2008; Warmerdam et al., 2017).

There is evidence that in order to achieve reductions in work-related road traffic injury, it is necessary to focus beyond an individual's compliance with safety procedures (Newnam et al., 2012; Stuckey et al., 2007; Wills et al., 2009). Stuckey et al. (2007) proposed a systems framework for light vehicles in the workplace with five potential determinants of crash, injury and fatality. These elements, located at different levels within the systems framework included locus of injury, physical work environments (immediate and external), organisational environment, and the policy environment. Research has supported this model by showing that behaviour within this environment is strongly influenced by a system of inter-linked contexts operating at multiple levels within the organisation. For example, it has been demonstrated that drivers' perceptions of the value and priority given to safe driving by their supervisors predicts crashes (Newnam et al., 2008). The frequency of exchange of safety-related information between supervisors and their drivers has also been found to predict safe driver behaviour (Newnam et al., 2012). This research supports Stuckey's model by showing that leadership within the workgroup context contributes to creating a safe driving environment.

Research is yet to demonstrate the impact of leadership at the senior-management or organisational level. This context is characterised by the promulgation of policies, procedures and practices designed to guide role-behaviour expectancies at all levels within an organisation. The paucity of research exploring organisational-level influences on workplace road safety may, in part, be attributed to the challenges inherent in managing behaviour in the workplace road safety context. In addition to the structural characteristics that distinguish this context from the management of other organisational safety activities, the work-task (i.e., driving) is conducted outside the physical boundaries of the workplace; thus, direct employer or supervisory control is limited (Huang et al., 2013; Newnam et al., 2012). This separation poses a managerial challenge in creating policies, procedures and practices that are both relevant and specific to the driving task.

Despite the challenge of systematically linking OHS improvement to the driving task, there is some evidence to suggest that senior management commitment to safety is critical in creating a safe driving environment (Newnam et al., 2002; Wills et al., 2006). For example, Darby et al. (2009) examined the effectiveness of an online fleet driver assessment program to identify, target, and reduce occupational road safety risk. These findings are important because they establish that senior-level management are capable of creating an environment that supports safe driving. However, the types of management practices, independent of risk management, that both shape and constrain safe driving behaviour are yet

Table 1
The Nine HPWS practices explored.

Practice	Definition
Remuneration	Direct rewards and payments that employees receive.
Job and work design	Elements of the work-role task, relationships between tasks, and the organisational structure.
Development	Competency training required to complete work-role tasks and future work-role tasks.
Selection	Selection of applicants, both from within and external to the organisation.
Job Security	Level of confidence in retaining employment.
Communication	Formal information sharing programs.
Performance Appraisal	Measuring and improving individual performance for all employees across the organisation.
Promotion	Opportunities and methods to move up to higher level positions within the organisation.
Retention	Identifying and taking steps (i.e., modifying traditional workplace practices) to address the reasons for voluntary turnover.

to be determined. This is an important question to consider given the conflict that can exist between productivity and safety within the workplace.

1.2. High performance workplace systems

This study, therefore, explored the role of HPWS practices in influencing safe driver behaviour. Types of HPWS practices previously explored in the literature include selection (e.g., Michie and Sheehan, 2005), communication (e.g., Gibson et al., 2007; Gittell et al., 2010) and performance management (e.g., Zhang and Li, 2009). Much attention has focused on the role of HPWS practices in increasing the intensity of workplace inputs (e.g., commitment and motivation) and maximising outputs (i.e., increased performance and reduced turnover) (Combs et al., 2006). There is also research that demonstrates a relationship between HPWS and occupational safety (Zacharatos et al., 2005). Although the research to date suggests the positive impact of HPWS on productivity and, more importantly, safety performance, these practices have yet to be investigated within the unique context of workplace road safety.

The key study objective was to identify and understand the management practices that support or constrain safe driver behaviour. There is some research that suggests that joining together individual complimentary practices into configurations or 'bundles' create superior synergistic effects, whereby certain practices reinforce and support one another (Posthuma et al., 2013). There is, however, limited consensus regarding the number, terminology, and specific bundling of these practices that promote organisational efficiency (Sun et al., 2007). For this reason, this study will explore the independent relationships between nine HPWS practices and work-related driver behaviour. These practices are described in Table 1. These practices were identified based on a review of the HPWS literature (Posthuma et al., 2013) and were selected as relevant to the workplace road safety context.

1.3. Safety climate in the work environment

Much research has demonstrated that workers' perception of the value and priority given to safety (ie. safety climate) is a determinant of safe working performance (eg., Zohar, 2000; Griffin and Neal, 2000). These findings have also been extended to the work-