Road safety in corporate fleet settings: Approaches from organisational and industrial psychology

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ABSTRACT

Research into work-related driver safety in corporate vehicle fleets has provided some descriptive information about driving for work and some of the common approaches to fleet safety. However, a lack of theoretical underpinnings has constrained the scope of this research. This paper outlines some theories and conceptual approaches from organisational and industrial psychology which are applicable for researching work-related driving and designing fleet safety countermeasures. Approaches described relate to contextual performance, occupational stress, organisational culture and climate. In using these approaches, work-related driving is conceptualised as an organisational behaviour – a behaviour of employees which occurs in the organisational setting. These are consolidated into an integrated approach to fleet safety. In addition to enhancing the understanding of work-related driving, utilising this integrated approach will result in intervention strategies designed to target the key psychosocial and organisational factors involved.

INTRODUCTION

Work-related driver safety has become the subject of increasing attention for road safety research in recent years (e.g. Downs, Keigan, Maycock, & Grayson, 1999; Haworth, Tingvall, & Kowadlo, 2000; Murray, Newnam, Watson, Davey, & Schonfeld, 2002; Wills, Watson, & Biggs, 2004). This is not surprising given that work-related traffic crashes are the single largest cause of work-related fatality in Australia, accounting for approximately 25% of all occupational fatalities (Harrison, Mandryk, & Frommer, 1993; National Occupational Health and Safety Commission, 1998) and approximately 6-7% of all road fatalities in Australia each year (Federal Office of Road Safety, 1999). The issue has also been recognised as a major public health and safety problem in the United States, the United Kingdom, and Europe (Bibbings, 1997; Bylund, Björnstig, & Larsson, 1997; Gregersen, Brehmer, & Moren, 1996; Moser, 2001).

A review of fleet safety initiatives utilised in industry shows that common approaches include the selection of safe vehicles, driver management, safety programs, driver incentives, driver selection and induction programs, driver training/education programs, fleet safety guidelines (policies), crash monitoring, ongoing evaluation, and communication and driver awareness

(Haworth et al., 2000; Murray et al., 2002). Haworth et al. concluded that research on these initiatives in fleet settings is limited, and at best is lacking in empirical evaluations. To date for example, research on 'behind the wheel' driver training is limited. This is largely due to methodological difficulties in evaluating the effect of such programs upon on-road driver behaviour. The predominant limitation of these common (often 'reactive') approaches to improving fleet safety is a lack of psychological, behavioural, and theoretical underpinnings and research-based support. Although, more recent research has started to apply some psychological theories to predicting work-related driving (e.g. Newman, Watson, & Murray, 2004; Wills et al., 2004). Murray et al. (2002) also applied some theoretical approaches to the further development of fleet safety initiatives.

PERSPECTIVES FROM ORGANISATIONAL PSYCHOLOGY

In order to understand, predict, and ultimately manage, work-related driver safety it is imperative to place the behaviour within a relevant theoretical or conceptual framework. Such a framework allows researchers to begin to describe the nature of the behaviour and some of the important factors of influence, and to make informed recommendations to practitioners. Given that work-related driving occurs in the context of work, this paper discusses applicable and useful perspectives drawn from research and theory in organisational and industrial psychology. In particular, it discusses placing work-related driving into a behavioural and occupational framework using organisational and industrial psychology principles.

Work-related driving as an aspect of job performance

For many workers driving constitutes an important, although informal, part of their work role. For example, sales workers, technical and trade workers, managers and executives at various levels may regularly drive for work. In some cases it is not uncommon for employees in such jobs to spend the majority of their work day driving a vehicle. While many organisations have adopted formal safe driving policies, safe driving behaviour may not be explicitly recognised as a core job responsibility unlike other technical, operational, or sales targets. In such instances, driving behaviour can be viewed as representing an informal part of job performance.

Job performance is defined as including behaviours or activities that are orientated towards the organisation's objectives and goals (Motowidlo, Borman, & Schmit, 1997). Research has provided empirical evidence in support of the multidimensional nature of job performance, and has broken it into two major dimensions: task performance and contextual performance (Borman & Motowidlo, 1993; Goodman & Svyantek, 1999; Hattrup, O'Connell, & Wingate, 1998; Motowidlo & Van Scotter, 1994). *Task performance* includes those aspects of a job that contribute directly to the technical objective of the organisation. These behaviours are predominately task orientated and are included in formal job descriptions and may represent a key performance indicator (KPI). Conversely, *contextual performance* includes activities that may not represent formal work tasks, although they still make an important contribution to the effectiveness of the organisation. For example, behaving courteously, following rules and procedures, and endorsing organisational objectives are categorised as examples of contextual performance (Borman & Motowidlo, 1993). As described above, in many cases driving for work (and in particular safe driving practice) can be categorised as contextual job performance.

Framing work-related driver safety as contextual performance allows for consideration of those factors, which research suggests, influence occupational behaviour in other work settings. For example, conscientiousness has been identified as a strong predictor of contextual but not task performance at work, whereas cognitive ability has been shown to have a stronger relationship to task performance (Hattrup et al., 1998; Miller, Griffin, & Hart, 1999). Other predictors of contextual performance include job satisfaction, attitudinal factors, and dispositional factors (Organ & Paine, 1999). In the context of driving, research also supports a relationship between dispositional factors (such as sensation seeking and attitudes) and driver safety (e.g. Jonah, 1997; Parker, Stradling, & Manstead, 1996).

Griffin, Neal, and Neale (2000) found that contextual performance was dependent upon situational difficulty, suggesting that as task or cognitive demands increase, individuals have less opportunity to engage in contextual performance. In the context of work-related driving for example, endeavouring to make an appointment on time (task performance) may interfere or take precedence over safe and courteous driving (contextual performance). Improving the on-road safety of workers has various benefits for organisations in terms of safety outcomes and the associated financial costs. In other industrial settings it has also been argued that contextual performance behaviours have additional benefits towards organisational effectiveness such as increasing productivity, teamwork, and co-worker job satisfaction (Borman & Motowidlo, 1993; Motowidlo, 2000; Podsakoff & MacKenzie, 1997).

Viewing work-related driving as a form of job performance recognises that the behaviour is an important part of many job roles, one that needs to be in alignment with organisational objectives. Furthermore, understanding the multidimensional nature of job performance recognises that the factors that impact on work-related driving may be different to those that impact upon other more formal role behaviours at work. When workers are placed in situations with high cognitive demand, task orientated behaviours may also take precedence over contextual behaviour, leading to potential deficits in driver safety.

Occupational stress

Research and theory on occupational stress has been the subject of extensive research providing information about the type of factors (*stressors*) that may negatively impact upon work performance. The type and amount of stressors that can be experienced are numerous and include social, interpersonal factors, and family factors as well as other life-related events and trauma (Buunk, de Jonge, Ybema, & de Wolff, 1998). In viewing work-related driving as a form of job performance, it is argued that occupational stressors may have an important influence upon driver safety. While this section does not attempt to summarise all possible occupational stressors, it mentions some which may impact upon work-related driving across different settings.

The preceding discussion on job performance suggested that workers may drive less safely when pressured with situational or other task demands. Similarly, workers can experience stress as a result of intra-role conflict (i.e. incongruence among their own job roles) (Jex, 1998). For example, a technical worker may experience *role conflict* or *role ambiguity* if they are faced with making the decision to speed in order to meet several appointments in a limited amount of time. Workload is another related source of work stress. Indeed, research suggests that factors such as time pressures, thinking about work, and lack of concentration are key risk factors for work-related drivers (Downs et al., 1999; Salminen & Lahdeniemi, 2002).

Various models of occupational stress have been proposed by industrial and organisational psychology which summarise some of the antecedents and outcomes of occupational stress including psychological, physiological, and organisational effects (e.g. Kahn & Byosiere, 1992; Karasek, 1990; Katz & Kahn, 1978; Michie, 2002). While a review of these models is beyond the scope and intent of this paper, it is important to note that the extent to which stress occurs is thought to be moderated by a number of person-related factors such as coping ability, personality characteristics, and social support networks.

Although the extent to which work factors lead to an experience of stress may be moderated or mediated by person-related factors, it is important to consider the role played by organisational factors including organisational processes, structure, and culture. In doing so, organisations may begin to understand how management practices and behaviours can influence work-related driver safety. Similarly, giving consideration to the culture and climate operating within their organisation may allow management to identify other work-related influences upon driver safety.

Organisational safety culture and climate

In recent years it has been argued that, in addition to traditional approaches to fleet safety such as training programs, organisations should aim to create a proactive *safety climate/culture* amongst drivers and their managers (Murray, 2003; Wills et al., 2004). This is a holistic approach derived from theory and research in organisational psychology and management science. It is grounded in the idea that *organisational culture* is a behavioural and psychological phenomenon which manifests as the shared values, attitudes, beliefs and behaviours occurring within the organisation (Schein, 1990). Occupational safety researchers have further refined this line of thought by specifying organisational *safety culture* as including the shared values, norms, beliefs, attitudes, ideas, and behaviours of workers which impact upon their exposure to risk at work and ultimately their involvement in accidents (Cooper, 2000; Glendon & Stanton, 2000; Guldenmund, 2000).

Consistent with this concept of organisational culture, fleet safety literature proposes that *fleet safety culture* is the by-product of the attitudes held by organisational stakeholders; driver training practices; management commitment to fleet and driver safety; and fleet safety policies, practices, and procedures (Haworth et al., 2000; Moser, 2001; Murray, 2003; Murray & Dubens, 1998). In other words, fleet safety culture is characterised not only by how safely employees drive, but also how management practices impact on driving and how safe driving is valued within the organisation. It is argued that a proactive fleet safety culture is characterised by the positive alignment of these factors (Murray & Dubens, 1998), wherein best practice policies and procedures are complemented by workers and managers who are committed to safe driving. Thus leading to safer actual on-road driving practices and successful organisational outcomes

Organisational *safety climate* is a related concept which has undergone an extensive amount of research. Safety climate is defined as the psychological mechanism through which safety culture impacts upon the way in which workers ultimately behave at work (e.g. their on-road driving practices). An organisation's safety climate represents workers' shared perceptions about how safety is managed and treated within their workplace (Flin, Mearns, O'Connor, & Bryden, 2000; Zohar, 1980). As climate represents an employees' psychological perception about a specific aspect of the organisation, it can be quantitatively measured by utilising survey methodology to gather employee perceptions about a specific aspect of the

organisation, much like other psychological constructs such as attitudes, personality, or cognitive ability (Glendon & Litherland, 2001; Mearns & Flin, 1999). In other organisational settings such as off shore mining, research has shown links between safety climate and other safety outcomes including occupational accidents and injuries (e.g. Mearns, Flin, Gordon, & Fleming, 1998; Mearns, Whitaker, & Flin, 2003; Oliver, Cheyne, Tomas, & Cox, 2002). In the fleet setting, research has started to support the link between workers' safety climate perceptions and their on-road driver safety at work (Wills et al., 2004) and has identified some of the important dimensions of safety climates in fleets such as communication, work pressure, and management commitment (Wills, Watson, & Biggs, 2005). Further research is expected to provide more extensive description about the nature of this link, including other mediating and moderating factors.

Theory and research on safety culture and climate offers a multidimensional approach to driver safety within organisational settings. From this perspective, driving should be viewed as a behaviour that is not the result of individual characteristics alone, but one that is also influenced by management practices and the extent that driver safety is valued within and by the organisation.

DISCUSSION

Conceptualising work-related driver behaviour as job performance provides a theoretical framework for understanding the nature of work-related driving and the importance of driver safety within organisations. Research on informal role performance suggests that such behaviours are often linked to person-related factors such as disposition and job satisfaction. On the other hand, task behaviours may be more strongly linked to organisational influences, given that they are formally tied to policies and procedures and may represent workers' KPIs. It may be useful for organisations to consider viewing driving as a more central part of employees' work roles. While it may not need to be classified formally as an indicator of job performance, it is essential that organisations work towards acknowledging safe driving practice as a behaviour that is expected of workers (one that is equally as valued as other task-focussed behaviours, such as making appointments on time). For this to occur there is much that can be learnt from the literature on safety climate and culture.

The level of communication is a key part of an organisation's fleet safety culture (Wills et al., 2005). Communication channels should be open, ensuring not only that managers and supervisors communicate justified expectations to workers, but also that workers have the opportunity (both formally and informally) to express opinion and concerns up the chain. Similarly, organisational structure is another factor whose impact upon workers is recognised by each of the approaches outlined in this paper. Evidence also suggests that person-organisation fit (the extent to which employees values match organisational culture/climate) is related to contextual performance (Goodman & Svyantek, 1999). This indicates, for example, that work-related driver safety may be more closely tied to person-organisation fit than other more formal role-tied behaviours. Similarly, organisational culture and climate have been shown to be linked to workers' experiences of stress (Michela, Lukaszewski, & Allegrante, 1995; van der Velde & Class, 1995).

Role conflict and ambiguity are recognised as common causes of stress in organisational settings and these are likely to impact upon work-related driver safety. This also emphasises the importance of open and consistent communication. Workers need to hold an

understanding of the importance of safe driving to their job role. Similarly, open commitment from management to safe driving will help to instil a proactive fleet safety culture. If safe driving is treated as a behaviour that is not strongly tied to the organisational culture or one that is perceived as having little value, task needs (such as achieving expected or scheduled task-related objectives) will take precedence, leading to less safe driving (and disregard for road rules such as speed limits). Such scenarios are also more likely to occur when workers are under high situational demands such as feeling pressured. It is also essential that workers perceived role expectations and operational processes are in alignment. Organisational communication processes may help to ensure such congruency.

An integrated approach to fleet safety

Cox and Cox (1996) argue that contemporary practice in occupational safety should adopt an approach of 'interdependency', recognising the need for a reciprocal relationship between managers and employees. This is characteristic of a *systems thinking* approach. Systems thinking evolved from research in various sciences including biology, physics, mathematics, and information technology. It has also been applied to industrial and organisational psychology as a framework for recognising the complex way in which individuals and organisations interact (Senge, 1993; Stacey, 2003). In terms of fleet safety management, this implies that driver safety is neither the responsibility of managers nor drivers alone, but a combination of both. Safe driving at work should result from processes, structures, relationships, and values which recognise that driver safety is a key part of workers' roles and organisational values (i.e. the organisational culture). Through the current review it is clear that a complex set of relationships between psychological, behavioural, social, and organisational factors interact to influence workers' on-road driver behaviours and resultant fleet safety outcomes, supporting the applicability of the systems approach.

Practical considerations

Due to the nature of managing large organisational fleets, as well as having health and safety implications, fleet management involves logistics, purchasing, maintenance, engineering, and finance. It is a complex aspect of organisations which can be an overwhelming management issue both in terms of process and structure. The current outline and discussion also suggests that work-related road user behaviour is a complex aspect of job performance in organisational settings. Given this, the issue is relevant to various sets of stakeholders within organisations, including not only fleet management teams, but workplace health and safety teams and operational team leaders (who may have regular contact with drivers), and of course – drivers themselves. It is essential that through an integrated approach to fleet safety, organisations incorporate each group of stakeholders into relevant processes and stages.

The current review and discussion outlined some of the ways in which organisations may influence the on-road driver safety of their employees. When viewed from a distance, these factors combine to form a key part of an organisation's safety culture. Improving driver safety is therefore a complex organisational issue that will not be significantly improved in the long term by any one management or intervention strategy but requires an overall systems approach. In summary, it is important for those involved in managing fleet safety to consider how the following may impact of driver behaviour in their organisation:

- organisational structure and operational processes;

- formal and informal expectations regarding employee job performance (the role of driving);
- formal and informal values;
- rules and procedures relating to vehicles and driving (including how these are communicated); and
- level of management commitment.

Conclusion

Driving is a complex behaviour with various types of antecedents. This becomes even more complicated when considered in the context of work. The current discussion suggests that in order to develop strategies for managing work-related driving it is important to understand the nature of the behaviour as an aspect of job performance and the importance of the behaviour to workers' roles. These factors can be integrated through adopting a systems approach, which when applied to the fleet setting suggests that safe driving at work results from processes, structures, relationships, and values which recognise that driver safety is a central part of workers' roles and organisational values. A key part of this is considering the safety culture and climate operating within the organisation. In terms of implications for road safety in general, lessons may be learnt from investigating fleet drivers which will assist the understanding of driving behaviour amongst other driver groups, particularly those with strong formal or social ties to institutions or other drivers.

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