ARTICLE IN PRESS

Transportation Research Part F xxx (2014) xxx–xxx

Contents lists available at ScienceDirect

Transportation Research Part F

journal homepage: www.elsevier.com/locate/trf

Trip-focused organizational safety climate: Investigating the relationships with errors, violations and positive driver behaviours in professional driving

Bahar Öz *, Türker Özkan, Timo Lajunen

Department of Psychology, Middle East Technical University, Ankara, Turkey

ARTICLE INFO

Article history:
Received 2 April 2013
Received in revised form 4 March 2014
Accepted 17 March 2014
Available online xxxx

Keywords:
Professional drivers
Work-related driving
Work-related road safety
Driver behaviours
Organizational culture
Organizational safety climate

ABSTRACT

The aim of this study was to investigate the relationship between trip-focused organizational safety climate, and driver behaviours, (i.e., errors, violations and positive driver behaviours) in professional driving. A total of 219 male professional drivers participated in the study. The participants were asked to fill out the Driver Behaviour Questionnaire together with the Positive Driver Behaviours Scale; Trip-focused Organizational Safety Climate Scale (TOSCS); and a demographic information form. Factor analysis of the TOSCS, which has been used for the first time in the present study, resulted in a two-factor solution. The factors were named as 'Trip Safety Monitoring and Control' (TSMC) and 'Tacit Agreement to Trip Safety' (TATS). In order to test the main and interaction effects of organizational safety climate on driver behaviours of professional drivers, Analyses of Covariance were conducted after controlling for the statistical effects of age and annual mileage of the drivers, and the type of the organizations for which they are working. According to the results, professional drivers with low scores of TATS reported higher frequencies of errors and violations as compared to the drivers with high scores of TATS. Interaction effect between TSMC and TATS dimensions was found on the frequencies of positive driver behaviours. Such that, the highest frequencies of positive driver behaviours were reported when both TSMC and TATS scores were high, while the lowest frequencies of positive driver behaviours were reported when TSMC scores were low but TATS scores were high. In the present study, driver behaviours of professional drivers have been studied for the first time on the basis of the trip-focused aspect of organizational safety climate. This study is also the first one evidencing the relationship between organizational safety climate and positive driver behaviours.

1. Introduction

Professional drivers (i.e., the drivers whose job is driving) have been a research interest for many years regarding the factors being related to the process and outcomes of their task of driving. Previous studies and statistical figures evidenced that road traffic accidents were climbing to the top of the list to be one of the leading factors of occupational fatalities. This fact makes it critical to have a more detailed understanding of the safety related factors in professional driving (Charbotel,

* Corresponding author. Tel.: +90 312 210 5945; fax: +90 312 210 7975.
E-mail address: ozbahar@metu.edu.tr (B. Öz).

http://dx.doi.org/10.1016/j.trf.2014.03.004
1369-8478/

Martin, & Chiron, 2010; Clarke, Ward, Bartle, & Truman, 2005; Haworth, Tingvall, & Kowadlo, 2000; World Health Organization-WHO, 2013). Additional demands for driving might be included in professional driving when it is compared to non-professional driving. In addition to the general traffic rules and regulations and daily life conditions which are valid for each driver on the roads, professional drivers need to comply with the rules and regulations of the organizations for which they are working. Besides, some organizational factors like safety climate within the organization may be critical for safety outcomes or the behaviours being related to those outcomes (e.g., Öz, 2011; Öz, Özkan, & Lajunen, 2013; Wills, Watson, & Biggs, 2006).

1.1. Organizational safety climate

Since the nuclear accident at Chernobyl in 1986, the role of organizational culture has gained importance in accident investigations in industrial settings; the effects of poor safety culture has been focused on in relation to safety performance/outcomes in organizations (see Cox & Flin, 1998; Pidgeon, 1998). In addition to the considerable literature evidencing the relationship between culture and job performance in industrial settings (e.g., Christian, Wallace, Bradley, & Burke, 2009; Guldenmund, 2010; Neal & Griffin, 2006; Ostrom, Wilhelmsen, & Kaplan, 1993); organizational safety climate, as a specific aspect of organizations, started to take a noticeable attention as an organizational antecedent of driver behaviours in road traffic settings (e.g., Freeman, Davey, & Wishart, 2007; Nævestad & Bjørnskau, 2012; Öz, 2011; Öz et al., 2010; 2013; Wills et al., 2006).

Although there have been considerable number of studies on safety culture and climate, the exact nature and content of these concepts, distinctions and similarities between them have yet to be clearly determined in the literature. This lack of clarity has been observed in some definitions of safety culture and climate as well (Edwards, Davey, & Armstrong, 2013; Guldenmund, 2010). For example, according to Geller (1994) in a total safety culture in organizations, everyone feels responsible for safety and pursues it on a daily basis. Safety climate in organizations, on the other hand, can be interpreted as the objective measurement of attitudes and perceptions toward occupational health and safety issues (Coyle, Sleeman, & Adams, 1995). According to Schein (1992) organizational climate is not different from manifestations and reflections of cultural assumptions. The attempts to understand the exact differences between these two concepts have resulted in some differentiations. For instance, Wiegmann, Zhang, von Thaden, Sharma, and Gibbons (2004) argued that as compared to the culture, safety climate is accepted as a temporary state of an organization and being affected from specific changes and characteristic of the organization. Culture research is mainly based on qualitative methods like field notes and diaries, whereas climate research is conducted mostly by using quantitative methods like questionnaires. While employee perception on selected characteristics of the organization is accepted as a key attribute of organizational climate, deep understanding of the underlying mechanisms is emphasized in culture research. Culture is stressed as a property of the organization whereas climate is seen as the property of individuals (James et al., 2008). Despite the mentioned differences, it has been agreed that both culture and climate include shared characteristics of the organization, and organization related conditions, structural and interpersonal characteristics are important for the formation of both concepts (Antonsen, 2009).

In the very beginnings of the studies on organizational safety climate, that concept was considered as fuzzy and inclusive as well as having fuzzy measures (see, Guion, 1973; Schneider, 1975). Although different studies that have been conducted on safety climate ended up with various factor structures so far, it is possible to talk about some common dimensions and conclusions (see Guldenmund, 2010). According to Flin, Mearns, O'Connor, and Bryden (2000), for instance, 'management', 'safety system', 'risk', 'work pressure', and 'competence' are the most common dimensions of safety climate. Safety climate might be accepted as a robust ruling predictor of safety outcomes for varying industries and countries (Zohar, 2010) as well as being a critical factor for estimation of hazards by employees (Cheyne, Cox, Oliver, & Tomas, 1998).

The previous attempts to end up with the same factor structures of organizational safety climate in different studies including similar type of organizations did not reveal the desired results. It has been argued that the sector differences of the similar type organizations might result in the found differences (Guldenmund, 2010). In addition to the type of organizations, sector characteristics might influence the employees' perceptions of the organizations. For this reason, it is possible for the employees who are working in different sectors to have different objects for their attitudes. Consequently, various dimensions which are not much similar in content may be obtained in different settings like traffic (Cabrera, Isla, & Vilela, 1997; Öz et al., 2013). Moreover, results of the studies investigating companies from the same sector were not able to replicate the previously found factor structures (Collins & Gadd, 2002; Guldenmund, 2010); different aspects of the same construct might be related to different characteristics of the task being done, like professional driving. When safety climate perceptions of professional drivers are investigated, the focus group is the employee group for which interaction with the organization, co-workers and the physical organization is different from the employees working in industrial settings and spending their work time mostly in the organization.

It is possible to argue that for professional drivers, like truck and bus drivers, the vehicle they are driving is the work place they are working in (Wills, Watson, & Biggs, 2009). As professional drivers spend most of their working time by driving on the roads; investigating trip focused aspects of safety climate could provide additional understanding for the previously evidenced relationship between organizational safety climate and driver behaviours in professional driving. That is, studying organizations' safety concerns focusing on the work-related trips of professional drivers would present a more comprehensive understanding of professional driving and its relation with organizational safety climate. Those safety concerns might include organizations' trip-focused monitoring, driving related practices, rules, regulations and arrangements to make the

Please cite this article in press as: Öz, B., et al. Trip-focused organizational safety climate: Investigating the relationships with errors, violations and positive driver behaviours in professional driving. *Transportation Research Part F* (2014), http://dx.doi.org/10.1016/j.trf.2014.03.004