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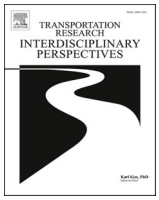

From work environment to roadway: A narrative review on organizational psychology's role in road safety

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ABSTRACT

Following the impetus to implement preventive road-safety programs, understanding how work-related dimensions intersect with road safety is noteworthy. That is, every day, people use roads to commute to work or travel for work (e.g., truck drivers, food delivery). Work-related travel results in distinctive and usually higher patterns of risk. This narrative review aims to offer a vision of the intersection between road transport safety and organisational psychology, a discipline devoted to the study of individuals' psychology in the workplace. By bridging distinct aspects of research, the paper highlights the value of an interdisciplinary perspective and presents a framework comprising four major research levels (i.e., institutional, organisational, individual, and situational), thereby advancing new strategies for research and practice to promote road safety. Even though these levels are related, handling them separately enables a thorough analysis of the suggested interdisciplinary framework. The paper proposes ideas for future research that can combine the purposes of the two research fields while also advancing road transport safety.

1. Introduction

The large number of people who are on the road every day for work-related aspects (e.g., gig workers, Cropanzano et al., 2023; Petriglieri et al., 2019; truck drivers, Delhomme & Gheorghiu, 2021; work-related commuters, Calderwood & Mitropoulos, 2021) reminds us of the risk of accidents and traffic issues of this vast population. However, despite such an implicit reference, the literature presents only a few studies connecting the research field of road safety studies and disciplines devoted to the study of the psychology of work (e.g., work and organisational psychology) (see Calderwood & Mitropoulos, 2021; Tommasi et al., 2023; Costantini & Oviedo-Trespalacios, 2022). This is surprising given that many individuals on the road every day are there for work-related reasons. Thus, it becomes pivotal to understand how workers' psychology and lived experience can affect road transport safety. Notably, to support such an interdisciplinary perspective, scholars need a unified approach that fosters cross-fertilization between road transport safety research and work and organizational psychology. For instance, a recent review has initiated a research agenda focusing on the association between commuting and organisational behaviour (Calderwood & Mitropoulos, 2021). Similar empirical studies have begun to define concepts and directions in this transdisciplinary field by examining the combined effects of work and traffic stressors on occupational health, organisational behaviour, and risk behaviour in traffic (HaGani et al., 2022; Turgeman-Lupo & Biron, 2017). Despite this, a series of open questions remain, e.g., how do institutional policies, regulations, and incentives affect employees' road safety behaviours? What are the effects of work-related factors (e.g., burnout, workload) on road incident risk? How do combined stressors of work and traffic affect organisational dynamics and employee well-being? Which psychological factors (e.g., consciousness, social anxiety) affect employees' road safety behaviours? Do external conditions and contextual factors (i.e., morning commutes) have an impact on employees' road incidents?

Following this impetus, the present paper aims to provide an interdisciplinary research agenda on work-related dimensions and road transport safety by combining empirical-based perspectives from the field of road transport safety and work and organisational psychology. This comprehensive approach is essential to assessing the challenges

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arising from the intersection of work-related issues and road transport safety, such as road incident rates driven by excessive workload. We revise the explicit and implicit incorporation of organisational psychology in existing road transport research. We aim to provide tools for mapping existing interdisciplinary studies and developing an integrated theoretical model. Accordingly, in reviewing existing literature, we adopt a multilevel analysis comprising four primary levels of research interest in organisational psychology: namely, institutional, organisational, individual, and situational levels. Although these four levels appear to be interconnected, treating them as separate concepts allows tackling all aspects of the proposed transdisciplinary perspective.

This study makes several contributions. The narrative review advances the research area of road safety in transport through cross-fertilisation with the disciplines of work and organisational psychology across four major research levels (i.e., institutional, organisational, individual, and situational). While there are existing studies that merge organisational psychology with transportation and road safety literature (e.g., Auliani et al., 2024; Chen et al., 2022; Morris et al., 2025; Lin et al, 2025), research in these domains is frequently restricted to specific variables or a singular level of analysis. The primary contribution of this narrative review is its reconstruction of various research traditions within a coherent and holistic framework, rather than merely addressing the literature at the level of fragmented findings. This multilevel perspective provides a structured foundation for developing theoretically informed hypotheses, methodological approaches, and intervention strategies aimed at promoting road safety. Ultimately, this review enables the development of new research questions that allow researchers to examine road safety and organisational variables at different levels, either individually or in interaction.

In the rest of the paper, we proceed as follows. First, we present our multilevel integration of different research perspectives, combining work and organisational psychology theories and models with road transport safety issues. We do so by reviewing the existing sparse literature. In fact, the lack of a unifying framework prevents conducting a systematic review of the existing literature. Scholars have used various terms and models to account for the roles of work and organisations in the study of road transport safety. Moreover, engaging in a narrative review allows us to raise new questions and perspectives, particularly in unexplored areas. In the second part, we present how our unified model can offer new vistas for research and practice and realise a developing research agenda. Limitations and other implications are presented later in the paper.

2. A developing research agenda

Organisational psychology investigates behaviour and psychological factors in work settings, while a key area of interest in transport research is road safety. Reviewing the literature, there is an inherent connection between the two fields, particularly regarding how work-related factors influence road transport safety. Although the binomial formula of work-related dimensions and transportation studies resonates in a limited number of empirical studies (e.g., Elfering et al., 2012; Nguyen-Phuoc et al., 2023), there has been a growing acknowledgement of the overlap between organisational psychology principles and transportation research in recent years. For example, a recent study investigated the influence of workday experience on road transport safety, offering initial empirical evidence of the connection between work-related experiences and risk of commuting injuries (Tommasi et al., 2023). The authors examined how work-related attitudes (e.g., work engagement) and post-work states (e.g., recovery from work) influence risky behaviours (i.e., mobile phone use) during daily commutes and how these behaviours relate to road transport safety. Similarly, risky commuting behaviours (i.e., smartphone usage) both influence and are influenced by job crafting, a set of proactive work behaviours used by employees to modify the responsibilities and resources of their jobs (Costantini & Oviedo-Trespalacios, 2022). In addition, extended working hours, perceived work stress, and constraints due to delivery deadlines are positively correlated with low road safety behaviours among truck drivers (Delhomme & Gheorghiu, 2021). Moreover, the literature provides considerable evidence on the effects of commuting experiences on work outcomes. Morrow (2010) reported that commuting stress is negatively associated with road safety and job satisfaction, and that it also increases disengagement from work and work-to-family conflict.

Taken together, these studies are only a few examples of the many studies in the literature that show how work and road transport safety studies are interconnected (see Calderwood & Mitropoulos, 2021). To enhance our understanding of the relationship between these two fields, scholars have analysed organisational psychology and road transport safety across four dimensions: institutional, organisational, situational, and individual. At the *institutional* level, studies underlying the structure of the systems, policies, and practices within the realm of road transport safety. This level delves into how governing bodies or authorities shape workers' lived experience of their roles daily and how these regulations can affect their behaviour on the streets. For instance, Page and Nilsson (2017) found that institutional incentives for road safety positively affect employees' job performance. The institutional level differs from the organizational level because it refers to broader, macro-level structures that exist above organizations. On the other hand, at the *organisational* level, scholars have examined how organisational factors can affect road transport safety. For example, Christie and Ward (2019) and Nguyen-Phuoc et al. (2022) explored how the pressures of courier work often push employees to break speed limits, drive fatigued, and use phones – behaviours that significantly elevate the risk of accidents. On the *individual level*, scholars have explored how relatively stable personal characteristics and attitudes shape road safety outcomes. For example, Elfering and colleagues (2012) found that conscientious individuals who approach their work with greater diligence tend to experience fewer cognitive failures, thereby reducing the risk of road accidents. Finally, at the *situational level*, road safety outcomes are shaped not by who the driver is, but by external conditions and contextual elements. For instance, morning commuting stressors (an external condition) have a direct impact on morning commuting strain (contextual element), which in turn leads to negative work-related outcomes (Zhou et al. 2017).

The literature presents several evidence-based perspectives that support the binomial formula, i.e., work-related dimensions in transportation studies, yet it lacks an integrated model. That is, existing empirical studies employ multiple research lenses and theoretical perspectives without a clear depiction of how work-related dimensions are relevant to road transport safety and vice versa. Thus, we aim to combine these disciplines into an integrated model (see Fig. 1) to deepen understanding of the connections among institutional, organisational, individual, and situational levels in the context of work-related and road safety. *Theoretically*, this integrated model creates space for interdisciplinary frameworks that connect different levels. This paper assesses the impacts of various job roles on daily commuting risks, examines how work-related pressures affect road safety behaviours, and emphasises the correlation between work-induced stress and accident probability. Additionally, it specifies what is needed for further exploration in the existing literature. *Practically,* understanding the intersection of work-related dimensions and road transportation safety can facilitate the development of prevention strategies and policies, potentially reducing the likelihood of accidents.

As Fig. 1 shows, the multifaceted nature of work-related dimensions can be situated in road transport safety. This figure is organised by placing three of the four levels at the core, namely situational, individual, and organisational levels. These are surrounded by the institutional level. The lived experience of workers is strongly influenced by personal and individual characteristics (e.g., personality traits, motivation) as well as by situational conditions (e.g., daily work demands) and organisational conditions (job demands and resources). What is more, such conditions are reciprocally influencing road transport safety and logistics. For example, streets are organised to save specific spaces for

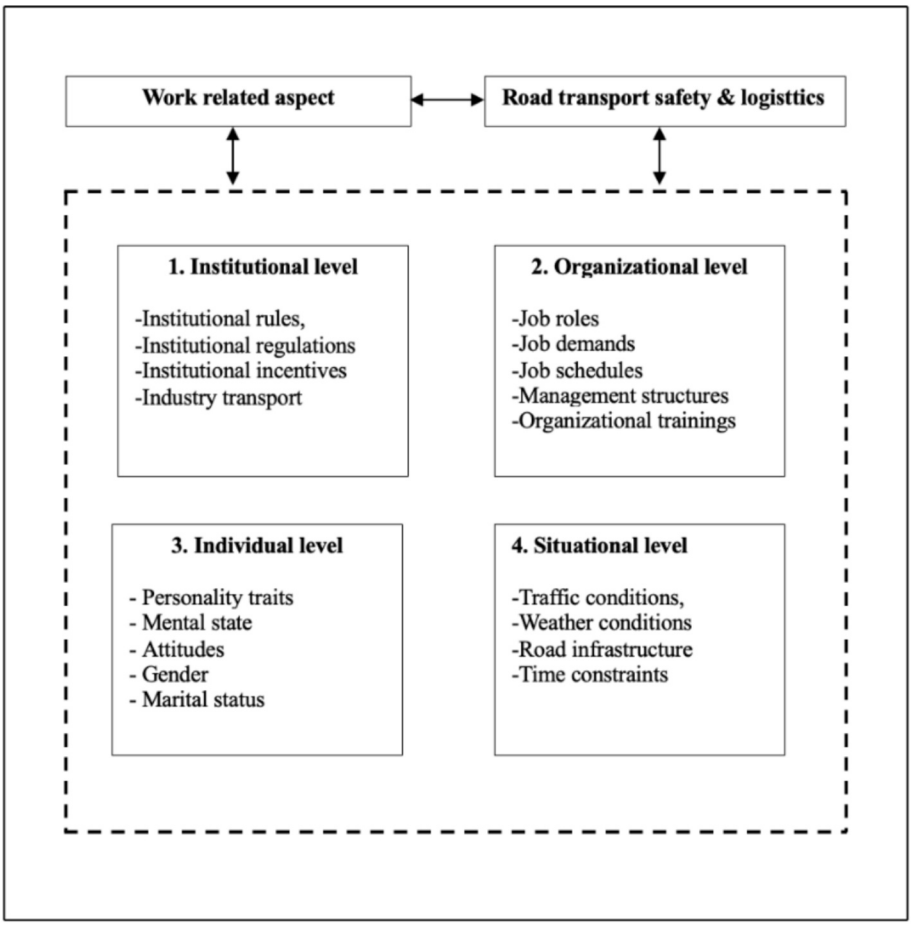

Fig. 1. Graphical depiction of the conceptual model.

bus or tram drivers. Likewise, road traffic depends on daily commuters and on specific individual workers (e.g., food delivery drivers and truck drivers). Institutionally, these dimensions are marked by institutional levels comprising policies and programs that regulate road conditions and road users.

2.1. *Institutional level*

As depicted in Fig. 1, the more distant level is represented by institutional dimensions (e.g., transport system, industry transport, work environment). Institutional level at which workers perform their daily roles within the realm of road transport. Institutional rules, regulations, and incentives strongly influence road safety behaviours. For example, Zepf and colleagues (2010) found that public transport leads to shorter work absences than car driving, and they proposed institutional incentives, such as "job tickets", as a potential means of providing a financial incentive for the practical utilisation of public transport. Ma and Ye (2019) suggest providing institutional incentives, such as safe bike parking and showers at work sites, because they found that Australian full-time employees demonstrated a positive correlation between active commuting methods (i.e., walking and cycling into daily routines) and job performance. Moreover, active commuting (i.e., using e-bikes) positively correlates with more productive organisational behaviour outcomes (Page & Nilsson, 2017). Accordingly, evaluating the impact of institutional incentives on work performance and commuting mode can provide valuable insight to organisations, encouraging more secure commuting practices. For example, it is worth exploring the role of institutional incentives (i.e., changing rooms for active commuters, job tickets) in encouraging active commuting and its impact on work outcomes.

Especially, health sector institutions need to focus on incentives related to commuting injuries. Dorrian and colleagues (2008) reveal that Australian hospital nurses report elevated stress and physical and mental exhaustion during many shifts. The main reasons for severe drowsiness during a commute are struggling to remain awake, exhaustion, and consecutive shifts. Researchers propose that short naps during work can help night workers recover from sleep deprivation at home (Ribeiro-Silva et al., 2006). It is noteworthy to explore how providing free transportation for healthcare workers can help reduce the opposing sides of sleep deprivation and fatigue on road safety. Hospitals are recommended to adopt policies such as mandatory 12-hour rest periods between shifts and scheduling shorter evening or night shifts to give workers enough time to rest and recover, thereby improving both workers' well-being and safety (HaGani et al., 2022). Also, technologies designed to prevent drowsy driving could be beneficial (Jang & Ahn, 2020). For instance, eye-tracking systems or in-vehicle cameras that monitor alertness have been developed (Bergasa et al., 2006); these systems should be made more widely available to professional drivers who work long or irregular hours.

Not only incentives but also institutional restrictions can play a crucial role in preventing road accidents, especially for the sectors that require being on the road all day to complete their tasks, such as the gig economy, where workers are employed on a per-task basis without a fixed salary via mobile, app-based digital platforms (Woodcock & Graham, 2019). Christie and Ward (2019) report that gig drivers need more health and safety training, besides experiencing occasional collisions and near misses daily. Namely, couriers face challenges such as fatigue-induced impairment, pressure to exceed speed limits, and frequent use of mobile phones while driving. In addition, according to surveys, couriers claim that payment per parcel led to cars or vans being loaded

to the point that the driver's view through the windows was obstructed. In contrast, managers accept no responsibility for the health and safety of the gig workers. Accordingly, couriers prefer shorter distances, payment based on time rather than per delivery, and receiving safety information. In essence, the findings suggest that institutional restrictions and well-defined policies regarding gig workers' road safety are needed.

Employees' perception of institutional policies and rules is also crucial. Research on the organisational safety climate has revealed that employees' perceptions of policies and procedures significantly impact their safety-related behaviours (Zohar, 1980; Zohar & Luria, 2005). When employees view regulations solely in terms of governmental oversight or financial burdens, their commitment to stick to safety protocols is more likely to diminish. Especially truck drivers, who perceive safety and compliance standards mandated by state and federal authorities as overly restrictive and burdensome, are more likely to engage in risky behaviours on the road. Additionally, feelings of emotional exhaustion and physical fatigue contribute to negative perceptions towards institutional regulations (Kemp et al., 2013). Thus, researchers are encouraged to explore how employees' perceptions of road safety policies influence their risky driving behaviour.

All the studies above indicate the interrelatedness of institutional-level road behaviours and work experience. We can see how institutional regulations, incentives and rules should be implemented for professionals who face heightened risks of commuting crashes and drowsy driving. Through this, researchers can develop guidelines for institutional policies and safety inspections while also examining their impact on gig workers' traffic rule violations. For example, limiting the maximum loads per vehicle for parcels can prevent gig workers from engaging in risky behaviours on the road. Training programs can improve memorability and comprehension of guidelines and limitations. According to Dorrian and colleagues (2008), training exercises that address exhaustion, drowsiness, and sleep loss can help commuters become more aware of commuting risks and help them enhance techniques to prevent potential harm from incidents. These strategies include obeying the speed limits, identifying the warning signs and prioritising work safety. This finding may suggest that a transparent internal structure contributes to clarity in terms of discipline, control, rule implementation, and job specifications for both organisations and employees (Hofstede, 2011). Researchers can examine the effectiveness of well-specialised training programs on employee safety by raising awareness of sleep-related hazards. They can also assess how these corporate initiatives develop employees' recognition of warning signs, effective coping strategies, and prioritise road safety.

To conclude, institutional factors such as incentives and regulations significantly impact work and road safety behaviours. Future studies may focus on innovative institutional incentives and specific challenges employees encounter on their way to work from home. In addition, understanding employees' perceptions of institutional policies and their effectiveness (e.g., shift scheduling policies) can improve road safety outcomes.

2.2. Organisational level

The way employees behave on the road can be influenced by organisational factors such as specific job roles, associations, job demands, schedules, management structures, and training programs. The following studies reveal the complex combination of organisational and psychological factors that lead to road safety. For instance, time pressure in the workplace often leads to a primary focus on task completion goals, while safety goals become less prominent (Zohar, 2004). This pressure extends to commuting as well; research conducted in Swiss organisations found that time pressure at work was significantly related to commuting accidents, driven by the desire to quickly complete the commute to meet urgent work needs and to facilitate post-work leisure time (Elfering et al., 2013). Nguyen-Phuoc and colleagues (2022) assess factors affecting the road safety behaviours of food delivery riders in Vietnam and reveal that higher job demands (i.e., time pressure) are associated with increased safety behaviours, and that job burnout mediates the negative influence of job demands on safety behaviours. They suggest implementing methods to reduce mental stress, such as eliminating daily targets to alleviate pressure from time constraints.

In the specific domain of railway control, factors such as time pressure, high concentration demands, and frequent interruptions contribute to high cognitive load. These factors heightened cognitive load, leading to increased work-related cognitive failures both during work and commuting (Elfering et al., 2012). These findings indicate that work-related time pressure is negatively associated with road safety. Therefore, examining the impact of organisational influences on time pressure and its subsequent effect on road safety can provide valuable insights into the complex interplay between workplace dynamics and driving behaviour. For example, employees are advised to take a short break between finishing work and commuting to escape carryover effects.

A primary determinant of time pressure in the workplace often stems from leadership behaviour and authority. Employees experience time pressure to meet expectations in the face of leadership pressures (Khan et al., 2023). In terms of road safety, leaders are responsible for identifying situations in which their employees may be tired, stressed, or under pressure to meet deadlines, and for managing these situations through effective safety leadership (Newnam & Oxley, 2016). Researchers also prove that social support from supervisors and colleagues is negatively associated with risky driving behaviours. Drivers who receive assistance, guidance and emotional support from their colleagues and supervisors are less likely to engage in risky driving behaviours such as operational errors or traffic violations. (Useche et al., 2017). Conversely, when leaders engage in boundary-crossing or abusive behaviours, this can undermine employee well-being and compromise road safety. Turgeman-Lupo and Biron (2017) reveal that abusive supervision is positively correlated with unsafe commuting behaviour since it leads to significant psychological distress. Thus, exploring leadership styles as an underlying factor in time pressure and the consequent risky behaviour can offer valuable insights for organisations seeking a safe environment.

The safety atmosphere within an organisation plays a crucial role in predicting engagement in safety initiatives within the organisational framework, as well as encouraging the desired behavioural changes (Banks et al., 2016; Meyer et al., 2024; Öz et al., 2013). Rispler and Luria (2021) explore employees' perceptions of safety interventions provided by their organisations and assess whether organisational influence could reduce employees' phone use while driving. Participants who perceive their organisation as having a high-safety climate indicate that it is a good channel for initiating safety interventions. Conversely, those with low perceptions of organisational safety climate are less likely to trust management's intentions behind safety interventions, and they perceive the organisation as less effective in promoting safety. For example, as one employee says, "If managers continue to send texts and messages while driving and don't give a personal example, it doesn't matter what they say we should do".

Moreover, when professional drivers (e.g., truck, bus, and taxi drivers) view their workplace within well-defined time schedules and display a high level of work orientation, even under time pressure, they report fewer driving errors and violations. In addition, when they perceive that the organisation prioritises safe driving over work pressure (e.g., conducting vehicle maintenance checks) and schedules related training programs, drivers report fewer violations (Öz et al., 2013). These findings suggest that employees are more likely to change their behaviour when their workplace encourages them to do so authentically. Thus, researchers are advised to investigate how perceptions of trust in leaders influence perceptions of organisational safety climate and, subsequently, perceptions of road safety. In parallel, how road experiences affect work dynamics has also attracted researchers' attention. Morrow (2010) reveals that commuting stress reduced job

satisfaction, increased work disengagement, and heightened work-to-family conflict. Zhou and colleagues (2017) confirm that stress during morning commutes directly affects commuting strain, which subsequently negatively affects self-regulation at work. Commuting stress also increases burnout, but is not significantly associated with job satisfaction (Amponsah-Tawiah et al., 2016). Deding and colleagues (2009) further underscored the positive correlation between commuting stress and turnover intentions, particularly with respect to commuting time and distance.

The main factors that lead to commuting stress are undoubtedly commuting time and distance. Commuting time and distance are negatively associated with job satisfaction (Robles, 2018) and job performance (Atis et al., 2022), while they are positively associated with cognitive failure at work (Elfering et al., 2013) and absenteeism at work (Ma & Ye, 2019). Lewis (2004) proposed an average commute duration of 45 to 60 min, based on comparing the heart rate and blood pressure of 125 commuters with those of pilots and trainee police officers. Thus, to reduce commuting stress due to time or distance, researchers emphasise the importance of controlling commuting time. Morrow (2010) explores that people with more control over their commute time and work scheduling experienced less commuting stress. Similarly, commuters with flextime report lower driver stress levels and fewer feelings of time urgency (Lucas and Heady, 2002). Ralston (1989) points out that flexible work arrangements improved commuting, better balance between work and personal responsibilities, reduced lateness, and increased job satisfaction. Garling (2004) supports increasing time control and particularly flexible working hours to help employees avoid traffic peaks and decrease commuting needs.

It is essential to focus on the underlying factors contributing to time pressure for minimising risky behaviours due to time constraints. Thus, organisations can consider improving employees' time management by implementing flexible work schedules to avoid traffic jams. It may also decrease the dependence on daily commuting. Accordingly, researchers are encouraged to investigate how flexible working arrangements and technological advancements, such as virtual workspaces (e.g., Asana) and remote collaboration tools, increase commuting stress and boost work-life balance. Organisational factors such as job roles, demands, and management structures are the main aspects impacting road safety behaviours. Since time pressure, influenced by leadership behaviour and organisational culture, emerges as a key determinant of driving behaviour, strategies to alleviate it, such as promoting flexible work schedules and enhancing time management skills, are recommended for future studies. Furthermore, providing targeted interventions that promote a safety-oriented organisational culture can encourage safer commuting practices (i.e., He et al., 2022; Huang et al., 2021). Thus, future research can focus on the benefits of flexible work arrangements on commuting safety and the role of technology in mitigating commuting stress.

2.3. Individual level

Individual-level factors such as personality traits, mental state, attitudes, gender, and marital status can impact employee performance and their experience in transportation. They play a significant role in shaping risky driving behaviour by influencing how individuals perceive danger, make decisions, and respond in risky situations. For example,

conscientiousness is a personality trait that reflects organised, responsible, and rule-abiding people (Goldberg, 1990). Elfering and colleagues (2012) find that conscientious individuals tend to experience fewer workplace cognitive failures since they usually approach their work with greater diligence and thus make fewer cognitive mistakes, which in turn is associated with a lower risk of road transport accidents. Similarly, a *meta*-analysis indicates that low conscientiousness predicts involvement in an accident, while emotional stability prevents accidents (Clarke and Robertson, 2005).

Researchers also prove that mental states and personality traits play a significant role in risky driving behaviours among professional drivers (e.g., bus, truck, and taxi drivers). According to the study conducted with taxi drivers, the most common predictors of violations are social anxiety and selfishness; aggressive behaviour is a strong predictor of aggressive violations; errors are impacted by urgency; and, lastly, the best predictors of lapses (unintentional violations which occur due to memory or attention failures that may result in an accident; Rimmö & Åberg, 1999) are conscientiousness, life satisfaction, sensation seeking, and urgency. Hereby, taxi drivers are suggested to be trained based on their individual characteristics as well as the types of violations that they generally commit (Aghabayk et al., 2020).

Useche and colleagues (2020) reveal the positive association between job strain and the likelihood of work traffic crashes, especially among professional drivers characterised by "reckless & careless", "anxious", and "angry & hostile" driving styles. Interestingly, the "patient & careful" (positive) driving style did not significantly correlate with work traffic crushes. The study suggests that more attention should be given to "reckless & careless", "anxious", and "angry & hostile" under the stressful work conditions (e.g., high job strain). It is proven that educational and training initiatives, such as behaviour feedback and coaching, diminish engagement in risky road situations and buffer risky driving behaviours (Kontaxi et al., 2025). These interventions may be particularly effective when used in conjunction with monitoring technologies, such as video-based in-car monitoring systems, helping transportation companies detect and provide feedback on drivers' risky behaviour while driving (Hickman & Hanowski, 2011).

Attitudes towards commuting are also significant points that need to be taken into consideration. Commuting can be perceived as an effective experience (Gatersleben & Uzzell, 2007), such as an option for relaxation (Redmond and Mokhtarian, 2001), recovery from work demands (van Hoof, 2015) or time for personal activities. For example, knowledge workers (i.e., executives, engineers, and salespeople) often use commute time for personal activities like listening to music, thinking, and reflecting on compensating for lost personal time (Teodorovicz et al., 2022). Van Hooff (2015) revealed that when employees face high job demands, those experiencing psychological detachment (a sense of being mentally disengaged from work during off-hours; Sonnentag, 2012) during the commute feel much calmness and reduced anxiety. In addition, commuting can be observed as a chance for physical activity. Friman and colleagues (2017) find that individuals who walk or cycle to work report higher satisfaction during daily travel. Similarly, those who prefer to walk to work and utilise public transportation are associated with better mental health outcomes compared to commuting by car. In contrast, those who commuted by car were more likely to report difficulties concentrating and experiencing constant strain (Martin et al., 2014).

Gender and marital status are other individual factors affecting commuting experiences. While men spend more time on daily commuting, women often report higher stress levels during the commute by car (Roberts et al., 2011; Useche et al., 2023), which also explains that working men and women are differently impacted by commuting (Havet et al., 2021). Additionally, women's domestic responsibilities and married lifestyles contribute to increased stress during daily commuting (Hanson & Pratt, 1991). Thus, marriage can be considered another individual factor influencing road safety; individuals with family responsibilities prioritise safer commuting options, seeking proximity to their homes to reduce travel time and potential risks (Havet et al., 2021

Ultimately, addressing work experience and road safety effectively depends on understanding individual factors such as gender differences, marriage status, driving styles and personality traits. By enacting gender-sensitive policies, supporting employees to manage family obligations, and encouraging alternative modes of transportation, it is possible for organisations to enhance safer and more supportive commuting environments. Additionally, programs designed to improve traits such as conscientiousness and emotional stability could diminish the likelihood of accident risk. Furthermore, considering commuting as

a period of personal activities, relaxation, and exercise can boost employee satisfaction and well-being.

2.4. Situational level

Situational influences are affected by external conditions and contextual factors that shape employees' psychological responses and driving behaviours. These influences can range from environmental variables, such as traffic conditions, weather conditions and road infrastructure, to time constraints. For example, railway workers face difficulties complying with rules due to situational factors, such as job-related pressure from extreme weather and working at night (Farrington-Darby et al. 2005).

Research by Zhou and colleagues (2017) suggests that certain stressors during commuting, such as encountering traffic jams, dealing with traffic control, or experiencing delays in commuting schedules, can lead to time setbacks, hindering commuters from making sufficient progress in reducing the distance between their current location and their workplace. Additionally, morning commuting stressors have a direct impact on morning commuting strain and a subsequent negative effect on self-regulation at work (Drawing on Beal et al.'s (2005) model of self-regulation explains the use of mental and emotional energy for tasks aiming to achieve work goals).

Gerpott and colleagues (2022) report the negative association between aversive morning commutes and employee effectiveness. Specifically, an aversive morning commute negatively impacts subjective performance, work engagement, and organisational citizenship behaviour. Moreover, they revealed that high competence needs satisfaction, which is feeling a strong sense of competence or ability to do tasks, buffers the negative consequences of the morning commute. Therefore, employees are encouraged to assign tasks according to their employees' skills and capabilities and provide assistance for challenging tasks (Van den Broeck et al., 2016).

Daily shift conditions are the other situational factors affecting both road safety and workers' psychology. Laske and colleagues (2022) investigate chemical manufacturers' shift conditions in the Southeastern United States. They explore the effect of consecutive shifts and shifts close to holidays on near misses and incidents. As a result, day shifts have a higher frequency of incidents and near misses compared to night shifts. The study also reveals no increase in incidents or near misses when shift work was scheduled close to a holiday break. Daily shift conditions should especially be considered for health sector workers. According to a survey conducted among healthcare professionals (HaGani et al., 2022)—physicians, nurses, paramedics, and administrative staff—incidents of drowsy driving and commuting crashes are more common on the way home from work than on the commute to work. In particular, 92% of the occurrences involved nurses, 95% involved doctors, and 92% of all incidents happened when they were leaving the workplace. Furthermore, there is a high percentage (79%) of crashes on the way from work to home for physicians, 48.6% for nurses, and 57% in total.

Upon evaluating these situational levels, future researchers can delve more deeply into distinctions between components on the way to and from work. In particular, a more thorough investigation can identify the specific conditions, such as certain hours or road conditions (i.e., traffic density), that contribute to more accidents and incidents of drowsy driving on the way from work. Also, future studies are encouraged to explore effective strategies to decrease the detrimental effects of morning commuting. Such studies can assist in developing a more focused, targeted strategy to implement preventive measures. It can be beneficial to focus on developing strategies such as providing shuttle services and incentivising carpooling to alleviate employee stress during commuting. Empirical evidence also shows that drivers exhibit safer behaviour in organised carpooling situations (Bastos et al., 2021).

3. Conclusions

To conclude our conceptual paper within the context of our developing research agenda on work-related dimensions in transportation studies, we highlight the need for empirical evidence to explore these dimensions. This framework not only enhances the understanding of work-related dimensions in transportation studies but also guides institutions and organisations in adopting best practices to mitigate work-related risks and promote safer commuting. We note that although organisational psychology is explicitly or implicitly incorporated into road transport research, there remains a substantial need for theoretical and practical advancement in this field.

This study highlights the significance of developing a comprehensive model that covers four primary research levels: institutional, organisational, individual, and situational. Firstly, when the impact of *institutional factors,* such as incentives and regulations, on work and road safety behaviours is considered, future studies are encouraged to focus on innovative institutional incentives and regulations, as well as the specific challenges employees encounter on their way to work from home. Secondly, *organisational factors* such as job roles, demands, and management structures are the main aspects impacting road safety behaviours. Future studies can examine the impact of targeted interventions that promote a safety-oriented organisational culture and how these interventions encourage safer commuting practices. Thirdly, understanding the relationship between work experience and road safety effectively depends on understanding *individual factors,* such as gender differences, driving styles, and attitudes. Future studies can explore how training programs designed to improve traits such as conscientiousness and emotional stability could reduce accident risk. Additionally, the impact of gender-sensitive policies, such as supporting employees to manage their family commitments, on road safety behaviour and how they affect employee work outcomes is worth further investigation. Lastly, the relationship between *situational factors*, such as road traffic culture and weather conditions, and employee well-being and work outcomes is a significant topic that may interest scholars. Future studies encourage investigating and identifying the effect of specific conditions, such as certain hours or road conditions (i.e., traffic density), on employees' safe driving behaviour on the way to work.

As with every study, this article has limitations. Given the lack of a unified theoretical framework that integrates institutional, organisational, individual, and situational factors in the context of road transport safety, a traditional systematic review was not feasible for our study. Instead, our narrative approach enables us to explore the relevant studies in a more flexible and comprehensive way. This flexibility allowed us to define cross-level interactions between organisational psychology and transportation safety. Because our literature covers the areas which span different disciplines (i.e., psychology, public policy, occupational health, etc.), applying strict selection criteria could have excluded many important studies. The absence of specific inclusion and exclusion criteria may limit the transparency and replicability of our review; however, it should be noted that this was not our aim. We aimed to provide an interdisciplinary research agenda on work-related dimensions and road transport safety by combining empirical-based perspectives from the field of road transport safety and work and organisational psychology.

Note

The authors declare that Grammarly Pro (AI-based language assistance tool) was used solely to improve language clarity, readability, and grammar. The tool was not used to generate scientific content, or influence the study design or conclusions. All scientific responsibility remains with the authors.

CRediT authorship contribution statement

Tülüce Tokat: Writing – original draft, Writing – review & editing, Methodology. **Francesco Tommasi:** Conceptualization, Writing – review & editing, Methodology. **Andrea Ceschi:** Supervision. **Oscar Oviedo Trespalacios:** Writing – review & editing, Conceptualization. **Riccardo Sartori:** Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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