Steering towards happiness: An experience sampling study on the determinants of happiness of truck drivers

Indy Wijngaards[a,b,*], Martijn Hendriks[a], Martijn J. Burger[a,c]

[a] Erasmus Happiness Economics Research Organization, Erasmus University Rotterdam, Rotterdam, the Netherlands
[b] Erasmus School of Health & Policy Management, Erasmus University Rotterdam, Rotterdam, the Netherlands
[c] Erasmus School of Economics and Tinbergen Institute, Erasmus University Rotterdam, Rotterdam, the Netherlands

ABSTRACT

The relatively low levels of employee well-being reported among truck drivers directly relate to some of the key challenges faced in the transportation industry, including high turnover of staff and difficulties attracting people to the profession. Drawing on the job demands-resources model, this study addresses this problem by examining how various state-like and trait-like job demands and resources relate to truck drivers' momentary happiness at work. Using an experience sampling study comprising 82 Dutch truck drivers, truck drivers were found to be happier during off-job activities and non-work-related job activities, such as breaks, than during work-related job activities. Furthermore, this study shows that road congestion aggravates the inverse relationship between work-related job activities and momentary happiness. Social support of colleagues and flexible work hours alleviate this relationship. These findings provide valuable information to the industry about the road to happiness for truck drivers.

1. Introduction

Truck drivers continue to play an integral part within the world economy. However, due to high job demands, truck drivers are at high risk for anxiety (Apostolopoulos et al., 2016; De Croon et al., 2004), depression (Da Silva-Júnior et al., 2009), and fatigue (Boyce, 2016). More generally, data on subjective well-being (SWB) show that employees working in the transportation sector score well below average on life satisfaction and job satisfaction (De Neve and Ward, 2017). The struggles of truck drivers are powerfully illustrated by an interview subject of Apostolopoulos et al. (2016): "It's rough and rugged … it's hard and it's stressful. You know, maybe that's why I turn to drugs, I don't know. It's not the type of life I really want to live but, you know, it gives me what I need to maintain my family and to maintain me and my lifestyle" (p. 55).

Low levels of well-being among truck drivers can have various adverse effects, including lower work productivity (Stewart et al., 2003), poor health outcomes (Apostolopoulos et al., 2013) and reduced personal and public safety (Apostolopoulos et al., 2016). In addition, due to the prospect of low truck driver happiness, logistics companies have difficulties attracting new talent. These adverse effects are particularly pertinent because many Western countries currently face a shortage of transportation workers because of a combination of high voluntary turnover (Prockl et al., 2017; Staats et al., 2017), a rapidly aging workforce (American Trucking Association, 2018), and difficulties finding young, capable drivers (Rauwald and Schmidt, 2012; Schulz et al., 2014). For instance, the United States currently faces a shortage of 50,000 drivers, a figure that could increase to 174,000 drivers by 2026 (American

Trucking Association, 2017). Similarly, it is expected that in Germany, 40% of truck drivers on the road today will retire in the next ten years, leading to a large shortage of drivers (Weiss, 2013). As noted by Suzuki et al. (2009) and Fournier et al. (2012), these low retention rates and labor shortages turn out to be a very costly issue for transportation companies.

To adequately address these issues faced by the transportation industry, a better understanding of the subjective experience of its employees is crucial (Schulz et al., 2014). Various studies have addressed truck drivers' job satisfaction and its antecedents (e.g., De Croon et al., 2002; Johnson et al., 2011; McElroy et al., 1993; Prockl et al., 2017), but to the best of the authors' knowledge, no studies have investigated truck drivers' momentary happiness and its antecedents. This gap in the literature is deemed significant, because the former, exclusive focus on job satisfaction is unwarranted. First, although overall job satisfaction provides some useful information regarding truck drivers' overall happiness at work, studies focusing exclusively on statically measured job satisfaction ignore much of the variation in happiness that takes place over the course of a day (Fisher, 2000; Ilies and Judge, 2002), and they fail to examine the effects of specific (work) events (Miner et al., 2005). Second, past studies' close attention to job satisfaction may be disproportionate because it constitutes only one dimension of subjective well-being (Diener, 1984; Diener et al., 1999), and because affective states (e.g., moods and emotions) are better predictors of certain work outcomes than evaluative states (e.g., job satisfaction, Bakker and Oerlemans, 2011; Van Katwyk et al., 2000).

Thus, the current study contributes to the existing literature in several ways. First, this study intends to build on current studies of the well-being of truck drivers by focusing on the momentary happiness (i.e., affective and transient feelings) of truck drivers. Specifically, this study examines the differences in momentary happiness during various job and off-job activities and assesses the impact of occupation-relevant job characteristics on the momentary happiness of truck drivers. The consideration of off-job activities is important, as happiness during off-job activities can spill over into the work context and vice versa (Ten Brummelhuis and Bakker, 2012), and plays an important role in a person's general happiness set-point (Diener et al., 2006). The findings of this study can offer logistics companies insights about what makes truck drivers happy and unhappy, and this information can be used to improve the well-being of truck drivers and address commonplace problems in the transportation sector, such as difficulties in attracting new staff and employee turnover.

Second, this study tests the core proposition of the job demands-resources (JD-R) model (Demerouti et al., 2001)—that job demands (e.g., long working hours and job insecurity) and job resources (e.g., social support and job variety) are, respectively, negative and positive determinants of well-being in every occupation—by examining how momentary happiness relates to several core job demands and resources of truck drivers. Additionally, to the best of the authors' knowledge, this study is the first to investigate not only how truck drivers' happiness relates to relatively stable *trait* job demands and resources (e.g., job insecurity and pay) but also the role of various highly fluctuating *state* job demands and resources (e.g., road congestion and road quality during a specific trip or work day). State job demands are important because they can play a significant mediating role in the relationship between trait job demands and resources and trait well-being (Schaufeli and Van Rhenen, 2006) and may have particularly strong and unique effects on transient feelings of happiness.

Third, this study offers a methodological contribution to the transportation literature by capturing momentary happiness and state-like job characteristics using an experience sampling method measure (ESM, Csikszentmihalyi and Hunter, 2003), a method that asks respondents to report on their moods and time spending several times per day, thereby explicitly incorporating the dynamic aspect of day-to-day happiness and activities (Scollon et al., 2009). This type of multiple-moment assessment method reduces memory bias, relies less on global heuristics, increases ecological validity, controls for the top-down effect in the assessment of SWB, and allows for a better view on the situational circumstances that influence an experience (Kahneman et al., 2004; Scollon et al., 2009).

In summary, this study intends to answer the following three research questions:

Q1: How do the momentary happiness levels of truck drivers differ across job and off-job activities?
Q2: How do trait-like job demands and job resources moderate the relationship between truck-drivers' work-related job activities and their momentary happiness?
Q3: How do state-like job demands and job resources moderate the relationship between truck driving and momentary happiness?

The remainder of this paper is structured as follows. First, a conceptualization of SWB is provided, and multiple sets of hypotheses are presented. Next, the study's sample and research procedure, survey instruments, and approach to statistical analyses are discussed, followed by a presentation of the research findings. Finally, a discussion of the research findings and conclusions are offered.

2. Theoretical background

2.1. Subjective well-being

The concept of SWB concerns the appreciation of one's personal condition and comprises affective experiences (i.e., moods, emotions, affectivity) and cognitive comparisons (Diener, 1984; e.g., life satisfaction, Diener et al., 1999; Veenhoven, 2000).[1] SWB comprises context-free states (e.g., life satisfaction or general mood) as well as context-specific states (e.g., job satisfaction and job

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[1] SWB should therefore be considered a general concept or field of study rather than a metric in and of itself that can be operationalized by aggregating construct scores (Diener et al., 1999).

affect, Taris and Schaufeli, 2015). This study focuses on context-free states by considering truck drivers' moods: "diffuse affect states, characterized by a relative enduring predominance of certain types of subjective feelings that affect the experience and behavior of a person" (Scherer, 2005, p. 705). These affective states are also often characterized as momentary happiness (e.g., Bryson and MacKerron, 2017; Csikszentmihalyi and Hunter, 2003; Howell et al., 2011). Momentary happiness encapsulates various positive (e.g., joyful, engaged) and negative states (e.g., stressed, angry) (Bakker and Oerlemans, 2011). Although SWB constructs generally show significant intercorrelations (Bowling et al., 2010; Krueger and Schkade, 2008), the correlations between affective SWB and cognitive SWB and between context-free and context-specific states are only modest. For example, the relationship of affectivity with job satisfaction (Bowling et al., 2010), job facet satisfaction (Bowling et al., 2008) and life satisfaction (Kahneman and Deaton, 2010) are typically less than 0.4.

2.2. Activities and momentary happiness

The truck driving occupation is characterized by high job demands (De Croon et al., 2004), including frequently working overtime, and low task variety, among other demands, as well as a lack of recovery opportunities (Chen and Xie, 2014; Morrow and Crum, 2004; for evidence from the Netherlands, see Van Zenderen et al., 2017). Both can be expected to negatively affect happiness, possibly leading to momentary happiness levels below a driver's happiness set-point (Kuykendall et al., 2015). Their combined negative effect may surpass their individual negative effects, because recovery in the form of leisure activities plays an important role in mitigating the effects of job demands on job stress (Sonnentag and Fritz, 2015) and happiness more generally (Kuykendall et al., 2015), and vice versa for a lack of recovery. Many theories have been proposed that underlie this notion (for an extensive reviews, see Newman et al., 2014; Sonnentag and Fritz, 2015). A prominent example in this regard is the conservation of resources (COR) theory (Hobfoll, 1989), which proposes that individuals build resources (e.g., energy, concentration, motivation) during leisure activities that, in turn, can be used at work. Another example is activity theory (Havighurst, 1963), which argues that happiness is increased by engagement in meaningful and social leisure activities outside work, such as meeting others and doing volunteer work. Accordingly, in most occupations, people generally feel happier during leisure activities than during work activities (Bryson and MacKerron, 2017), and we believe truck drivers are no exception given the relatively high job demands and lack of recovery opportunities in this occupation. For these reasons, the following hypothesis is posed:

H1a. Off-job activities are associated with higher momentary happiness than job activities among truck drivers.

Whereas truck drivers mostly engage in work-related job activities during work time (e.g., driving, deliveries, and pick-ups), they also engage in some non-work-related job activities (typically eating and resting breaks). COR theory as well as the effort-recovery model (Meijman and Mulder, 1998) predict that the buffering effect of engaging in recovery activities such as breaks also holds for recovery activities during the work day (Hunter and Wu, 2016). Empirical studies confirm that lunch breaks (Hunter and Wu, 2016; Trougakos et al., 2014) and microbreaks (Kim et al., 2017) can help people to recover from daily stressors (e.g., by satisfying the basic need to interact with other people). Some studies suggest that these theories could also apply to the truck driving occupation, as breaks reduce fatigue and crash risks (Chen and Xie, 2014) and improve overall occupational health (Apostolopoulos et al., 2012). As such, it is expected that non-work-related job activities (i.e., breaks) trigger greater momentary happiness than work-related job activities. Therefore, the following hypothesis is posed:

H1b: Non-work-related job activities are associated with higher momentary happiness than work-related job activities among truck drivers.

2.3. Job characteristics and momentary happiness

This study draws on the JD-R model (Bakker et al., 2004; Bakker and Demerouti, 2017; Demerouti et al., 2001) to further expand upon hypothesis 1a. The negative relationship between work-related job activities and momentary happiness is likely to be dependent on the favorability of truck drivers' job characteristics.

The JD-R model posits that every job characteristic can be classified into two general categories: job demands and job resources (Schaufeli and Taris, 2014). Job demands refer to "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (e.g., exhaustion)" (Demerouti et al., 2001, p. 501). Job resources can be defined as "those physical, psychological, social or organizational aspects of the job that may do any of the following: be functional in achieving work goals, reduce job demands at the associated physiological and psychological costs or stimulate personal growth and development" (Demerouti et al., 2001, p. 501). This theoretical model posits that both job demands and job resources work as proximal determinants of various aspects of employee well-being. Although the traditional focus is on motivational states (e.g., work engagement) and health states (e.g., stress, burnout), the model can also be applied to affective feelings of (un)happiness (Bakker and Oerlemans, 2011). Typically, job demands negatively affect employee well-being, and job resources positively affect employee well-being. In turn, employee well-being determines organizational outcome variables such as productivity, absenteeism, and turnover (Bakker and Demerouti, 2007; for empirical evidence, see Crawford et al., 2010). Because this study is interested in the relationship between activities and momentary happiness, it does not follow the tradition of examining the direct impact of job demands and resources on well-being but instead looks into their alleviating or aggravating potentials in the hypothesized negative relationship between work-related job activities and momentary happiness.

The JD-R model is a flexible model, as at its core lies the proposition that while there may be occupation-specific job demands and resources, their general relationships with well-being are relevant across all sectors and occupations (Korunka et al., 2009; Van Droogenbroeck and Spruyt, 2016). It is, however, vital to select job demands and resources that are relevant or specific to the occupation because their exact manifestation can be highly dependent on the occupational setting (e.g., De Croon et al., 2002).

Furthermore, JD-R theory distinguishes between *state-like* and *trait-like* job demands, job resources, and well-being (Bakker, 2015). States mirror a person's feelings about the environment (e.g., job demands and resources) and the self (e.g., well-being) at particular moments in time and are considered to be highly fluctuating (Kühnel et al., 2012; Xanthopoulou et al., 2008). In contrast, traits are regarded as individual dispositions or global experiences that remain relatively stable over time (Bakker, 2015). This distinction is important because stable long-term effects and transient short-term effects can have divergent determinants and consequences due to differences in their phenomenological nature. For instance, trip duration can be both state-like (e.g., making a longer trip than usual) and trait-like (e.g., making long trips on a daily basis), and these may have unique effects on momentary happiness.

The current study focuses on a selection of state-like and trait-like job demands and job resources that are relevant for the truck driving occupation. This selection was made by reviewing the truck driving literature. In addition, we collaborated with the Dutch Sector Institute of Transportation and Logistics (in Dutch: *Sectorinstituut Transport en Logistiek*) to discover which job charactersitics are particularly salient to Dutch truck drivers. However, given the large number of potentially relevant job demands and resources, this selection is inevitably incomplete.

2.3.1. Trait job demands

This study focuses on three trait job demands: the frequency of working overtime, job insecurity, and average trip duration.

The high frequency of working overtime, often associated with long driving hours and extreme workloads, is a straining job demand for truck drivers (Morrow and Crum, 2004; for evidence from the Netherlands, see Boeijinga et al., 2017). Working overtime can interfere with truck drivers' ability to balance their work and private lives (Berg et al., 2003), hamper people's ability to recover from work (Beckers et al., 2008), and disturb their sleeping rhythms (Kanazawa et al., 2006), which can in turn reduce their well-being (Beckers et al., 2008) and result in chronic fatigue (Hege et al., 2015).

Job insecurity functions as another job demand for truck drivers; in recent years, an increasing number of Dutch truck drivers have started working under temporary employment contracts (Wagenaar, 2018). Although truck drivers are generally in high demand (Johnson et al., 2011), job insecurity can foster feelings of powerlessness and uncontrollability (De Witte, 1999), which in turn lead to increased work stress (De Witte, 1999), lower job satisfaction (De Cuyper and De Witte, 2006), and lower life satisfaction (Silla et al., 2009).

Truck drivers' average trip duration is a likely occupation-specific job demand. Even though many just-in-time deliveries in a working day can be stressful (Kemp et al., 2013), it is expected that, compared to short-haul truck drivers, truck drivers who have longer average trip durations tend to experience resource depletion by increased feelings of social isolation and monotonous work as well as work overload and work-family conflicts (Apostolopoulos et al., 2013; Crizzle et al., 2017). In line with the above argumentations, the following hypotheses are posited:

> **H2a.** Frequently working overtime aggravates the negative relationship between work-related job activities and truck drivers' momentary happiness.
> **H2b.** Job insecurity aggravates the negative relationship between work-related job activities and momentary happiness.
> **H2c.** A long average trip duration aggravates the negative relationship between work-related job activities and momentary happiness.

2.3.2. Trait job resources

This study examines the role of four resources that are relevant for the truck driving occupation: pay, colleague support, flexibility of work hours, and task variety. Pay, or income more generally, tends to have a positive relationship with emotional well-being for people with relatively low or modest incomes, such as most truck drivers (Kahneman and Deaton, 2010). This is illustrated by the fact that truck drivers have indicated that better salary is the most important factor for changing jobs (Van Zenderen et al., 2017). The positive effect of receiving relatively high pay may be reinforced by the controversy surrounding the pay of Dutch truck drivers. Dutch employers have followed the trend of employing an increasingly large number of truckers from low-income European Union countries (Hilal, 2008; Pijpers, 2010) who have started participating in the international transportation market as an excuse to underpay Dutch truck drivers (Cremers, 2014). The effort-reward imbalance model (Siegrist and Peter, 1996; Van Vegchel et al., 2005) predicts that employee perceptions of being insufficiently rewarded based on one's efforts reduces employee well-being. The salience of pay unfairness in the truck driving setting might make pay a particularly important determinant of truck drivers' well-being.

The individualistic nature of the truck driving occupation could cause truck drivers to feel socially isolated and experience limited social support (Crizzle et al., 2017; Orris et al., 1997), resulting in mental health complaints (Kemp et al., 2013; Shattell et al., 2010). Social support works as a resource for truck drivers (Van Zenderen et al., 2017), as it satisfies individuals' desire for relatedness (e.g., pleasant social interactions with colleagues), facilitates coping (e.g., blowing off steam after a stressful situation) and can be used to decrease workload (e.g., a colleague taking over a ride, Bakker and Demerouti, 2007).

Furthermore, truck drivers regularly cope with tight and sometimes unrealistic schedules (Apostolopoulos et al., 2016; Hege et al., 2015) and extended periods away from home (Shattell et al., 2010). This lack of flexibility in work schedules is likely to diminish

truck drivers' sense of autonomy (Thompson and Prottas, 2006) and consequent well-being (Bakker and Demerouti, 2007). Accordingly, it is expected that flexible work hours would help alleviate truck driver stress, as they facilitate the reduction of role conflicts and work-life conflict (Rau and Hyland, 2002).

The task variety available to truck drivers is generally considered low, as truck drivers often engage in driving for long periods of time (Shattell et al., 2010). This monotonous driving could diminish the meaningfulness of the job (Hackman and Oldham, 1974) and increase feelings of boredom (Parker et al., 2008).

Hence, following the assumption that job resources have a positive effect on happiness, the following hypotheses are posed:

H3a. High pay alleviates the negative relationship between work-related job activities and momentary happiness.

H3b. Social support of colleagues alleviates the negative relationship between work-related job activities and momentary happiness.

H3c. Having flexible work hours alleviates the negative relationship between work-related job activities and momentary happiness.

H3d. Task variety alleviates the negative relationship between work-related job activities and momentary happiness.

2.3.3. State job demands

Thus far, this study has hypothesized the moderating effect of job demands and resources in the relationship between work-related job activities and momentary happiness. However, it is essential also to examine job demands and resources that are specifically relevant during individual job activities—in particular, those related to the main task of truck drivers: driving a truck. One prominent source of job demands relevant to this activity are environmental conditions (Crizzle et al., 2017; Shattell et al., 2010), and we will focus here on two such environmental conditions: road congestion and poor road conditions.

Road congestion functions as a job demand (Rowden et al., 2011; Shattell et al., 2010), as it often result in negative emotions (Eckenrode, 1984; Hennessy and Wiesenthal, 1999; Rowden et al., 2011) such as frustration and aggression (Shinar and Compton, 2004). Moreover, busy roads force truck drivers to deplete energy resources to concentrate on the road (Shattell et al., 2010).

Poor road conditions may also act as a job demand (Shattell et al., 2010), although the road quality in the Netherlands is generally good (Bruntlett and Bruntlett, 2018). For example, driving on roads with many potholes results in increased levels of whole-body vibration, in turn causing discomfort and, if sufficiently continuous, pain (Bovenzi, 2009). Driving on poorly lit roads make truck drivers drowsy and pressure them to pay extra attention.

Following this argumentation, two hypotheses are put forward:

H4a. Road congestion aggravates the negative relationship between truck driving and momentary happiness.

H4b. Poor road conditions aggravate the negative relationship between truck driving and momentary happiness.

2.3.4. State job resources

Social support can also be viewed as state job resource. Truck drivers typically spend most of their working hours on the road without any physical company and lack the opportunity to virtually connect. Situations in which drivers have passengers in the truck provide a valuable opportunity for social support and distraction. For instance, when a driver has passengers with whom he or she can interact, he or she will be "more occupied with something" (Smith, 1981) and distracted from the "boring road" (Ettema et al., 2012). Some evidence from commuting studies suggests that the negative emotions resulting from job stressors can be attenuated by the presence of passengers (Ettema et al., 2012; Lancée et al., 2017). In a study among truck drivers, Hatami et al. (2019) have shown that having a codriver decreases feelings of stress and loneliness, thereby increasing SWB. As such, the following hypothesis is posited:

H5. Having passengers alleviates the negative relationship between truck driving and momentary happiness.

In Fig. 1, a conceptual model is presented that summarizes all hypotheses. Hypothesis 1a represents the top arrow, and hypothesis 1b represents bottom arrow. Hypotheses 2 to 5 concern the arrow in the middle. Hypotheses 2 and 3 involve the moderating effect of trait job demands and trait job resources on the relationship between work-related job activities and momentary happiness. Hypotheses 4 and 5 summarize the argumentation about the moderating effect of state job demands and resources in the relationship between work-related job activities and momentary happiness.

3. Methods

3.1. Procedure and sample

The data collection was conducted by a Dutch academic research institute in collaboration with the Dutch Sector Institute of Transportation and Logistics from February to December 2016. Transportation workers were recruited via the Sector Institute's newspaper, digital newsletter, and website. To incentivize participation, it was announced on these platforms that three randomly selected survey respondents would win a power bank, which is a portable battery that can charge USB-connected devices, such as smartphones and tablets. This convenience sampling procedure resulted in 339 national and international truck drivers participating in a one-time survey asking about trait-like work characteristics and their demographic characteristics.
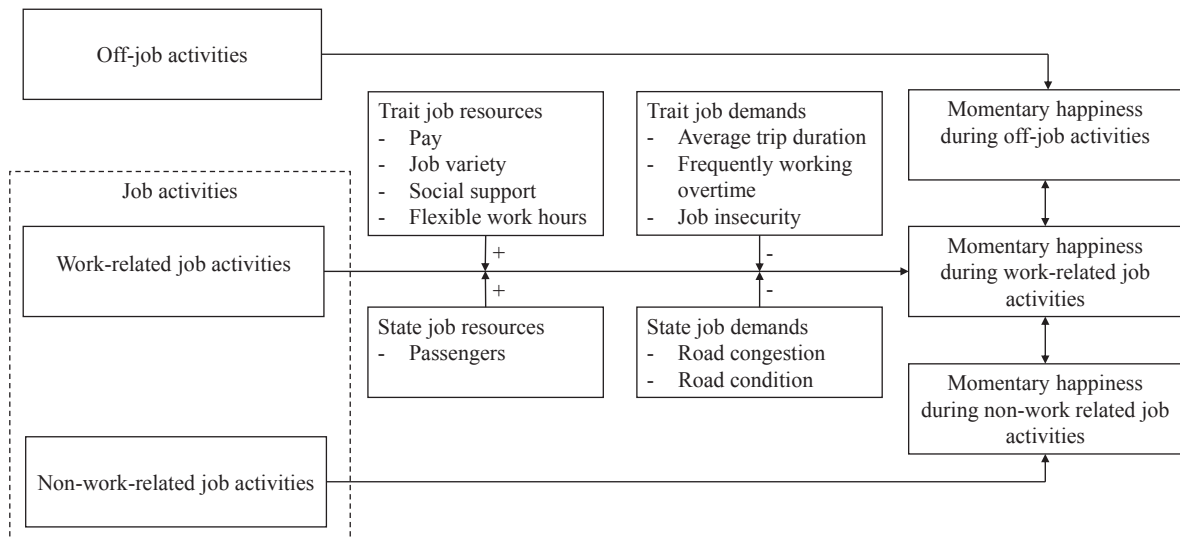
Fig. 1. Conceptual model.

After this one-time survey, 82 truck drivers voluntarily participated in a follow-up ESM study.[2] The goal of the ESM study was to capture state-like variables and momentary happiness. After stating their agreement to participate in this follow-up study, participants were informed on how to download the ESM application onto their mobile phones. When they had downloaded the application, participants were provided a tutorial with instructions on how to use the application in order to maximize the quality and quantity of responses. Next, in line with common practice in ESM research (Fisher and To, 2012; Larson and Csikszentmihalyi, 2014), respondents received four notifications each day asking them to indicate (i) how they were feeling, (ii) what they were doing, (iii) and who was with them in the past hour. The notifications were distributed throughout daytime, covering the entire waking day. Two consecutive signals were always more than an hour apart. Out of safety considerations, the truck drivers were instructed to answer this question when they were off the road (e.g., on a break or at a drop-off or pick-up location).[3] The total number of observations in the utilized ESM dataset was 4175, and the median number of responses was 30. The data were fully anonymized and treated confidentially.

The table in Appendix A summarizes the demographic composition and well-being of the sample of ESM respondents and compares these to the Dutch truck driver population and the attrition sample (i.e., those who participated in the initial study but not in the follow-up ESM study). The sample of ESM participants was generally representative in terms of demographic composition and well-being of the attrition sample and general population, with some exceptions (see Appendix A). For reasons of anonymity, respondents were not asked to indicate for which company they worked. However, because the Sector Institute is a cooperative of the main employers' associations and employees' organizations in the Dutch transportation and logistics sector, the survey respondents likely worked for a great variety of companies in the transportation and logistics sector.

3.2. Measures

Trait-like variables were measured using survey instruments in a cross-sectional survey, because they were expected to be rather stable over time. Because of their transient nature, state-like variables were measured through survey instruments in the ESM procedure. The items were presented in Dutch. A list of all the current study's variables and the number of observations per category is provided in Table 1.

Except for momentary happiness, all scales were collapsed into fewer categories based on the logical ordering of answer categories (e.g., merging "Strongly agree" and "Agree" into "Agree"). Most variables were measured on ordinal Likert-scales. Likert scales are commonly treated as interval variables when survey data is normally distributed and a linear associations is expected (MacCallum et al., 2002). Yet, because Shapiro-Wilk's test of normality showed that all variables followed a non-normal distribution ($p < 0.05$), variables had to be treated as ordinal (Agresti, 2018). In addition, we did not necessarily expect linear associations; for instance, a lack of task variety can be expected to relate to lower momentary happiness, but too much task variety can become overwhelming and reduce momentary happiness. Finally, since the limited number of observations and infrequent use of some categories, collapsing the scales into fewer categories was deemed necessary to have acceptable levels of statistical power and avoid type 1 errors. The scales of other categorical variables were collapsed for the same reason.

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[2] A threshold of five ESM observations was adopted, as some participants participated just once or twice.

[3] For this reason, we were unable to collect data on *true* momentary activities, feelings, or company (e.g., "What are you doing *right now*?") and had to prompt with a question that allowed more flexibility.

Table 1
Variable overview.

Variable category	Variable	Categories	$N_{observations}$//Mean (SD)
State-like variables	Momentary happiness[a]	0 ("Very unhappy") to 10 ("Very happy")	7.45 (1.42)
	Activity	*	–
	Passengers[b]	Passengers	45
		No passengers	916
	Road congestion[b]	Road congestion	257
		No road congestion	435
	Road quality[b]	Good road quality	891
		Poor road quality	72
	Road familiarity[b]	High road familiarity	928
		Low road familiarity	34
Trait-like variables	Working overtime[c]	Once or multiple times a week	47
		Less than once or multiple times a week	35
	Job insecurity[c]	Few worries	60
		Some worries	10
		Many worries	12
	Average trip duration[c]	3 h or less	48
		Longer than 3 h	34
	Pay[c]	€1800 or less	17
		€1801 or more	65
	Colleague support[c]	Disagree	15
		Neutral	9
		Agree	59
	Flexible work hours[c]	Disagree	36
		Neutral	14
		Agree	32
	Task variety[c]	Disagree	9
		Neutral	17
		Agree	56

Note. SD = Standard deviation.
  [a] $N = 4175$.
  [b] $N = 962$ (number of driving episodes).
  [c] $N = 82$.
  * The observations per category can be found in Fig. 2.

3.2.1. State-like variables

The considered state-like variables can be classified into four groups: state-like employee well-being, activity, state job demands, and state job resources.

3.2.1.1. State-like happiness. Momentary happiness was assessed with a single-item question: "How happy did you feel in the last hour?" Responses were rated on an 11-point Likert scale ranging from 0 ("Very unhappy") to 10 ("Very happy").

3.2.1.2. Activity. Respondents were asked to report what they had been primarily doing in the last hour. They first had to select whether they were engaged in a job or an off-job activity. For job activities, they could subsequently select one of the following activities: driving, eating, delivery and pick-up, rest/relaxation, administrative task, logistics task, or other. The categories eating and rest/relaxation were combined into a category of non-work-related job activities. For off-job activities, subjects could choose one of the following activities: sleeping, taking care of oneself, taking care of another person, travelling, studying, doing household tasks, eating, communicating with another person, relaxing, watching TV or using a computer, working out, engaging in outdoor activity, or other.

3.2.1.3. State job demands. When respondents answered "driving" as their activity, they were asked how busy the road was (1 = "Very unbusy", 2 = "Reasonably unbusy", 3 = "Reasonably busy", 4 = "Very busy") and what the quality of the road was (1 = "Very bad", 2 = "Reasonably bad", 3 = "Reasonably good", 4 = "Very good"). The 4-point Likert scales were dichotomized by combining the lowest two scores and the highest two scores (e.g., 0 = "No road congestion", 1 = "Road congestion").

3.2.1.4. State job resources. As a follow-up to the activity question, respondents were asked if they were alone or with colleagues, customers or friends. This variable was dichotomized to having passengers or not while driving (0 = "No", 1 = "Yes").[4]

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[4] The most frequent passengers were colleagues (26 observations), followed by customers (9 observations), friends/acquaintances (5 observations) and other (5 observations).

3.2.2. Trait-like variables

The considered trait-like variables can also be classified into four groups: trait job demands and trait job resources.

3.2.2.1. Trait job demands. Working overtime was measured with the item "How often do you have to work overtime for your job?" This categorical variable was dichotomized to working overtime one or multiple times per week or not (0 = "No", 1 = "Yes") in order to have two categories of approximately the same sample size. Following the same rationale, average trip duration assessed using the question "In general, how long does an average trip from your pick-up location to your drop-off location take you?" was dichotomized (0 = "3 h or less", 1 = "longer than 3 h"). Job insecurity was measured with the item "To what extent do you worry about the possibility of losing your job?" with answer categories on a 7-point Likert scale (1 = "No worrying at all" to 7 = "Worrying a lot"). The variable was recoded into three categories (1 = "Few worries", 2 = "Some worries", 3 = "Many worries") by combining the lowest three scores and the highest three scores.

3.2.2.2. Trait job resources. Pay was assessed with the item "To what category does your net monthly income belong?" For the analysis, this categorical variable was dichotomized to create two approximately equally large groups (0 = €1800 or less, 1 = €1801 or more). Colleague support was assessed with the item "Do you have the feeling that you can count on the support and help of your colleagues?" Flexibility in work hours was assessed with "To what extent do you have the feeling that you have flexibility in determining your work hours?" Task variety was measured by the question "Do you have enough variation in your work?" These three questions had answer categories on a 7-point Likert scale (1 = "Totally disagree" to 7 = "Totally agree"). The variables were recoded into three categories (1 = "Disagree", 2 = "Neutral", 3 = "Agree") by combining the lowest three scores and the highest three scores.

3.3. Statistical analyses

Within-subject fixed-effects regressions were performed to test the hypotheses. The results were stratified into three parts. First, the authors provided an overview of momentary happiness during various activities using descriptive statistics and three fixed-effects models. A major advantage of fixed-effects models is the exclusion of top-down effects of a person's general well-being on momentary happiness (Bryson and MacKerron, 2017; Lancée et al., 2017; Morris and Guerra, 2015). In other words, individual fixed effects control for individual-specific characteristics that remain constant over time, including people's baseline or reference happiness level. This distortion is caused by the reciprocal relationship between state-like and trait-like SWB constructs. As an explanation, momentary happiness adds to general well-being (bottom-up effect), whereas general well-being also affects momentary happiness during different activities (top-down effect; Headey et al., 1991; for evidence from transportation research, see De Vos, 2019).[5] Since the authors are most interested in the types of activities that affect the momentary happiness of truck drivers, it is important to account for this top-down effect.

All fixed-effects models were estimated using individual-clustered robust standard errors. The first model concerned the difference between momentary happiness at work and off work. The second model distinguished between momentary happiness during work-related job activities, non-work-related job activities, other job activities and off-job activities. The last model was identical to the second model, but it instead estimated the impact of specific work-related job activities (i.e., driving, pick-up/drop-off, logistical tasks and administrative tasks).

Subsequently, several fixed-effects models were estimated to explore what trait-like job characteristics moderate the relationship between work-related job activities and momentary happiness. In particular, these models were used to investigate whether specific trait job demands and job resources increase or decrease the difference in momentary happiness between work-related job activities and off-job activities. These models controlled for specific job and off-job activities (driving, relaxing, etc.) to capture variation in momentary happiness caused by these specific activities. Off-job activities were included as a reference category to eliminate the possible confounding effect of between-person differences in affective disposition, which became relevant when trait job characteristics were introduced to the model.

Notably, job demands and resources could theoretically also influence happiness levels during off-job activities and could thus bias the fixed-effect model estimates. To test this, a between-subject linear regression that assessed the influence of different job characteristics on an individual's average happiness during off-job activities was conducted. As shown in Appendix C, the results of this linear regression model indicate that job characteristics play basically no significant role in predicting momentary happiness during off-job activities. Therefore, the presented differences between job and off-job activities can be interpreted as the influence of job characteristics on momentary happiness during work-related job activities.

Additionally, four fixed-effects models were estimated to assess the extent to which state job demands and resources experienced while driving have the potential to decrease or increase the difference in momentary happiness between driving and off-job activities.

For all models, this study controlled for time of day (i.e., morning, afternoon, evening, night) and day of the week to capture common daily and weekly happiness patterns that are unrelated to specific activities or job characteristics.

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[5] This assumption was verified, as Pearson correlation analyses examining the relationships between momentary happiness, job satisfaction, life satisfaction, self-reported health and stress at work suggested that trait-like and state-like well-being constructs are highly related. The results can be found in Appendix B.
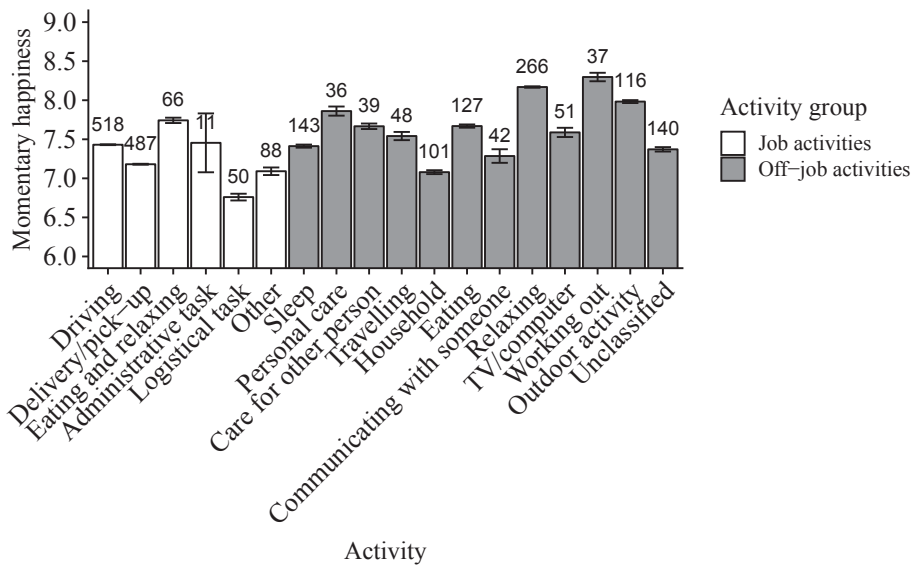
Fig. 2. Bar chart depicting average momentary happiness per activity (including 95% confidence intervals and total observations). *Note.* Unadjusted means reported with 95% confidence intervals, depicted on the top of the bars. Number of observations depicted above the bars. Activity categories with fewer than 20 observations were omitted from this plot.

4. Results

This section begins with an overview of some descriptive statistics about momentary happiness at work and momentary happiness off work. Then, the results of the fixed-effects models are presented and the antecedents of momentary happiness at work are discussed.

4.1. Descriptive statistics

The average momentary happiness score of truck drivers was 7.45 (SD = 1.42). The average momentary happiness score for off-job activities (M = 7.69, SD = 1.36) was greater than the average momentary happiness score for job activities (M = 7.24, SD = 1.43). A between-subjects *t*-test showed that the difference in average momentary happiness during off-job activities and job activities was statistically significant, $t(4172) = 10.46$, $p < 0.001$.

Zooming in on the more specific activities, as visualized in Fig. 2, some activities were associated with higher levels of happiness than others. In terms of job activities, truck drivers reported higher momentary happiness while driving than during other work-related job tasks, though they did not perceive it to be as pleasant as non-work-related job activities (i.e., eating and relaxing). With respect to leisure activities, truck drivers appeared to be happiest while relaxing or during active leisure activities, particularly working out and outdoor activities.

4.2. Activities and momentary happiness

As shown in Table 2, the results from the within-subject analyses show that truck drivers were happier off work than they were at work, providing support for hypothesis 1a. Furthermore, the lower happiness during job activities was driven by work-related job activities as opposed to non-work-related job activities, supporting hypothesis 1b. Model 3 showed that truck drivers were particularly unhappy during logistical tasks and delivery/pick-up tasks, and Wald tests confirmed that truck drivers were significantly happier while driving than during delivery/pick-up tasks ($\chi^2 = 12.63$, $p < 0.001$) and logistical tasks ($\chi^2 = 6.57$, $p < 0.05$).

4.3. Job activities, trait job demands and trait job resources

As exhibited in Table 3, the within-subjects analyses showed that none of the considered trait-like job demands (i.e., working overtime, job insecurity, and average trip duration) aggravated the relationship between work-related job activities and momentary happiness. As such, hypothesis 2 was not supported. With respect to trait-like job resources, colleague support and flexible working hours alleviated this relationship, whereas pay and job variety did not. Although the results suggested a moderate interaction effect of job variety, there is too much uncertainty about the true value of the parameter estimate. As a consequence, hypotheses 3b and 3c were supported, while hypothesis 3a and 3d were not supported

Table 2

Within-subjects fixed-effects model linking activity classes and specific activities to momentary happiness levels.

Variable	(1)	(2)	(3)
Off-job activities	Reference	Reference	Reference
Job activities	−0.409*** (0.064)		
Work-related job activities		−0.393*** (0.060)	
Driving			−0.281*** (0.059)
Delivery/Pickup			−0.517*** (0.075)
Administrative task			−0.280 (0.186)
Logistical task			−0.621*** (0.145)
Non-work-related job activities		−0.071 (0.083)	−0.072 (0.082)
Other job activities		−0.968*** (0.234)	−0.968*** (0.234)
Controls for the time of day and day of the week	Yes	Yes	Yes
Within R^2	0.061	0.072	0.078
ICC	0.515	0.517	0.519
Total N of respondents	82	82	82
Observations	4175	4175	4175

Note. *** $= p < 0.001$; ** $= p < 0.01$; * $= p < 0.05$; [†] $= p < 0.10$; $t =$ Time; $R^2 =$ Explained variance; ICC = Interclass correlation; $N =$ Sample size.

4.4. Driving, state job demands and state job resources

The results of the last within-subjects fixed-effect models are displayed in Table 4. The data showed that only road congestion functioned as job demand in the prediction of truck drivers' momentary happiness. Quality of the road did not have a significant moderating effect on the relationship between truck driving and momentary happiness. Accordingly, hypothesis 4a was supported, whereas hypothesis 4b was not supported. Hypothesis 5 was not supported, as having passengers did not aggravate the negative relationship between work-related job activities and momentary happiness.

5. Discussion

In Table 5, the outcomes of the hypothesis testing are presented. The results of the present study indicate that truck drivers are happier during off-work activities than during job activities. Moreover, truck drivers reported more momentary happiness during non-work-related job activities (e.g., breaks) than during work-related job activities (e.g., driving, administrative tasks). One job demand, road congestion, was found to aggravate the relationship between work-related job activities (i.e., truck driving) and momentary happiness. The other considered job demands—frequently working overtime, job insecurity, average trip duration, and poor road quality—did not function as significant moderators, although here as well all of the coefficients besides that of working overtime were in the expected direction. Two job resources—social support of colleagues and task variety—were found to alleviate the negative relationship between work-related job activities and momentary happiness. The other considered job resources—pay, task variety, and having company while driving—did not significantly moderate this relationship, although the coefficients were in the expected direction. Given the limited sample size, the present study's results should be interpreted as showing which job characteristics and activities affect momentary happiness most strongly, but insignificant relationships do not necessarily imply that those job characteristics are irrelevant to momentary happiness. An additional factor that should be taken into consideration is the variation within these job demands and job resources. For instance, although all passenger types were categorized into one category for reasons of sample size, there may be variation in how different passengers influence the happiness of truck drivers. For instance, it is theoretically plausible that the presence of a colleague would evoke more enjoyable conversation and social support than the presence of a customer or supervisor.

The present study found mixed evidence for the robustness of the JD-R model in a truck driving occupation. More specifically, half of the hypotheses about trait job resources were supported by the data. Conversely, although road congestion turned out to be an important moderator in the relationship between truck driving and momentary happiness, no other significant interaction effects of job demands were found. This finding demonstrates the importance selecting job aspects that are relevant for the target population (Bakker and Demerouti, 2007; De Croon et al., 2004). To illustrate, the insignificant interaction of working overtime frequently may have been explained by the fact that the truck driving profession is typically characterized by long and overtime working hours (Beckers et al., 2008), as corroborated in the present study's data, i.e., only 17% of truck drivers never work overtime. Because truck drivers are apparently used to working overtime, they most likely have accepted this job stressor and have adjusted to the situation, which in turn could have reduce the stressor's negative impact on their happiness (Diener et al., 2006, p. 200; Ritter et al., 2016).

5.1. Limitations and future research directions

The present study's limitations regarding the (i) selection of variables, (ii) validity of the measures, and (iii) generalizability of the sample can be addressed in future research.

First, this study considered only a limited selection of job demands and resources that are potentially relevant to the truck driving

Table 3
Within-subjects fixed-effects model linking trait job demands and resources during work activities to momentary happiness at work.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Off-job activities	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Work-related job activities[a]	−0.392*** (0.092)	−0.354*** (0.073)	−0.386*** (0.066)	−0.430*** (0.096)	−0.700*** (0.144)	−0.513*** (0.096)	−0.782*** (0.222)
Work-related job activities * Working overtime: one or multiple times a week[b]	−0.003 (0.123)						
Work-related job activities * Job insecurity: some worries[c]		0.130 (0.240)					
Work-related job activities * Job insecurity: many worries[c]		−0.281 (0.189)					
Work-related job activities * Average trip duration: longer than 3 hours[d]			−0.019 (0.130)				
Work-related job activities * Monthly net income €1801 or more[e]				0.047 (0.120)			
Work-related job activities * Support of colleagues: neutral[f]					−0.168 (0.262)		
Work-related job activities * Support of colleagues: agree[f]					0.445** (0.152)		
Work-related job activities * Flexible work hours: neutral[f]						0.052 (0.122)	
Work-related job activities * Flexible work hours: agree[f]						0.260** (0.124)	
Work-related job activities * Task variety: neutral[f]							0.456 (0.280)
Work-related job activities * Task variety: agree[f]							0.415† (0.231)
Controls for time of day and day of week	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls for all specific activities[g]	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Within R^2	0.072	0.075	0.072	0.072	0.082	0.075	0.075
ICC	0.517	0.515	0.516	0.517	0.519	0.513	0.513
Total N of respondents	82	82	82	82	82	82	82
Observations	4175	4175	4175	4175	4175	4175	4175

Note. *** = $p < 0.001$; ** = $p < 0.01$; * = $p < 0.05$; † = $p < 0.10$; R^2 = Explained variance; ICC = Interclass correlation; N = Sample size.

a = Work-related job activities include driving, pick-up/drop-off, administrative tasks, and logistical tasks.
b = Reference category is working overtime a few times a month or less.
c = Reference category is "few worries".
d = Reference category is average trip duration of 3 h or less.
e = Reference category is monthly net income €1800 or less.
f = Reference category is "disagree".
g = Dummies for all specific off-job and job activities were included.

Table 4

Within-subjects fixed-effects model linking state job demands and resources during driving to momentary happiness at work.

Variable	(1)	(2)	(4)
Off-job activities	Reference	Reference	Reference
Driving	−0.235** (0.073)	−0.511*** (0.179)	−0.289*** (0.059)
Driving * Road congestion [a]	−0.169* (0.082)		
Driving * Poor road quality[b]		−0.246 (0.162)	
Driving * Passengers[c]			0.157 (0.132)
Controls for time of day and day of week[d]	No	Yes	Yes
Control for other job activities[e]	Yes	Yes	Yes
R^2	0.079	0.079	0.078
ICC	0.519	0.518	0.518
Total N of respondents	82	82	82
Observations	4175	4175	4175

Note. *** = $p < 0.001$; ** = $p < 0.01$; * = $p < 0.05$; [†] = $p < 0.10$; R^2 = Explained variance; ICC = Interclass correlation; N = Sample size.

[a] = Reference category is "No road congestion".
[b] = Reference category is "Good road condition".
[c] = Reference category is "Being alone".
[d] = Because road congestion is heavily dependent on time of the day and day of the week, these were not included as controls.
[e] = These activities include pick-up/drop-off, administrative tasks, logistical tasks, non-work-related job activities (i.e., eating, relaxing), and other job activities

Table 5

An overview of the present study's research findings.

Hypothesis	Status
H1a. Off-job activities are associated with more momentary happiness states than job activities among truck drivers.	Supported
H1b: Non-work-related job activities are associated with more momentary happiness than non-work-related job activities among truck drivers.	Supported
H2a. Having to work overtime frequently aggravates the negative relationship between work-related job activities and momentary happiness.	Not supported
H2b. High job insecurity aggravates the negative relationship between work-related job activities and momentary happiness.	Not supported
H2c. Having a long average trip duration aggravates the negative relationship between work-related job activities and momentary happiness.	Not supported
H3a. High pay alleviates the negative relationship between work-related job activities and momentary happiness.	Not supported
H3b. Social support of colleagues alleviates the negative relationship between work-related job activities and momentary happiness.	Supported
H3c. Having flexible work hours alleviates the negative relationship between work-related job activities and momentary happiness.	Supported
H3d. Task variety alleviates the negative relationship between work-related job activities and momentary happiness.	Not supported
H4a. Road congestion alleviates the negative relationship between truck driving and momentary happiness.	Supported
H4b. Poor road conditions alleviate the negative relationship between truck driving and momentary happiness.	Not supported
H5. Having passengers alleviates the negative relationship between truck driving and momentary happiness.	Not supported

occupation. Other job demands and resources could also play an important role in predicting truck driver well-being during work activities, and job demands and resources may interact with each other in influencing well-being (Bakker and Demerouti, 2007). For instance, the negative effect of road congestion on well-being may be aggravated when truck drivers deal with very tight schedules or buffered when they have the autonomy to plan their own routes. Valuable future research directions would be the consideration of a complementary or larger set of job demands and resources, an explicit test of interactions between specific job demands and job resources, as well as testing considering other well-being variables, such as state work engagement, momentary fatigue, and stress.

Second, all survey measures in this study were single-item measures. Single-item momentary happiness measures are considered valid (Tadić et al., 2013), and the use of too many items in an ESM study is even undesirable (Scollon et al., 2009); however, the measurement of the trait-like variables in particular could have been better if multiple-item survey measures had been used. For instance, the Work Design Questionnaire (Morgeson and Humphrey, 2006) could function as means to more reliably and validly measure task variety, social support, and working overtime. In addition, most measures used in this study were subjective in nature. As objective data and subjective evaluations of a phenomenon (e.g., heavy traffic) are often complementary (Jahedi and Méndez, 2014), future researchers are encouraged to triangulate subjective and objective measures. For instance, administrative records (e.g., when and where truck drivers often work) combined with open-source traffic data can be used as objective indicators of road familiarity, road congestion, and road quality. Even more ambitiously, behavioral and physiological data generated by sensors (e.g., a smart watch, cameras in trucks) could help researchers measure the interactions between employee well-being and driving behavior (for an example, see Lee et al., 2015). One specific issue regarding the reporting of activities was that respondents were asked about their primary activity in the past hour. However, drivers may engage in several activities within an hour, and the duration of the activity may not always have the strongest effect on their happiness.

Third, the study's sample is subject to limitations. Although the sample was reasonably representative of the Dutch truck driving population in terms of demographic characteristics and well-being, the generalizability of the results to truck drivers in other countries remains an open question and merits attention in future research. In addition, as discussed, the limited sample size sets the bar high for finding supporting evidence for the hypotheses.

5.2. Practical recommendations

Within the aforementioned limitations, this study offers practitioners several interesting guidelines for policy making. In line with research that evidenced the importance of high-quality work breaks (Hunter and Wu, 2016; Trougakos et al., 2014), the higher momentary happiness during work breaks than during work-related job activities underscore that the happiness of truck drivers benefits from the facilitation of sufficient relaxing breaks by transportation companies. The finding that busy roads take a toll on the momentary happiness of truck drivers provide an argument for the prioritization of investments in clever scheduling of deliveries to avoid extremely busy roads, for example, during rush hour (Kok et al., 2012). As indicated by Johnson et al. (2011), adequate on-the-road training could also make a difference in making truck drivers feel more confident and capable on busier roads. Furthermore, the results show that practitioners can positively influence truck driver happiness by facilitating colleague support and making sure that truck drivers have some flexibility in their scheduling. For example, truck driving companies can create a platform for colleague support by organizing team events and creating social media groups (Kemp et al., 2013; Williams et al., 2011). On a more general level, truck driving companies are advised to pay more attention to the well-being of truck drivers (Boyce, 2016), in turn reducing their turnover intentions (Kemp et al., 2013). This can be done by starting a dialogue and asking truck drivers for feedback about their jobs, their experiences and, more generally, their lives as a whole (Kemp et al., 2013).

6. Concluding remarks

Transportation companies are at a turning point. With a growing shortage of truck drivers and considerable turnover rates, there is a strong incentive to invest in promoting the well-being of truck drivers a priority. Although measuring work stress, fatigue and other health-related constructs functions as a starting point, it is pivotal to adopt a more comprehensive approach to truck driver well-being. In particular, by tracking the momentary happiness of truck drivers over time, transportation companies can better understand when, with whom, and why truck drivers are happy. In this regard, this study shows that social support from colleagues and a flexible work schedule are pivotal job resources for feeling happy at work, while road congestion is a particularly important factor that impairs truck drivers' happiness at work.

Appendix A

See Table A.1.

Table A.1
Comparison of reduced sample (*N* = 82), attrition sample (*N* = 257) and representative sample (*N* = 76,537).

Variable	Category	ESM sample	Attrition sample	Representative sample[b]
Demographics				
Gender	Male	96.3%	98.1%	91.0%[c]
	Female	3.7%	1.9%	9.0%[c]
Age	Mean	45.67	52.9[a]	44.0[c]
	SD	12.37	9.3	–
Contract status	Temporary	15.8%	20.6%	8.0%
	Permanent	81.7%	75.5%	83.0%
	Self-employed	1.2%	0.8%	4.0%
	Employment agency	1.2%	3.1%	5.0%
Relationship status	No partner	23.2%	13.4%[a]	–
	Partner	76.8%	66.9%	–
Children	No children	40.2%	33.1%	–
	Children	59.8%	66.9%	–
Education level	Primary or secondary school	52.2%	58.4%	59.0%[c]
	Professional or higher education	48.8%	41.6%	41.0%[c]
Driver type	National driver	61.0%	71.2%	–

(*continued on next page*)

Table A.1 (*continued*)

Variable	Category	ESM sample	Attrition sample	Representative sample[b]
	International driver	39.0%	28.8%	–
Personal income (net/monthly)	≤ €1800	20.7%	26.8%	–
	≥ €1801	79.3%	73.2%	–
Subjective well-being				
Life satisfaction	Mean	7.35	7.44	7.57
	SD	1.12	1.33	–
Trait happiness	Mean	5.30	5.22	–
	SD	1.19	1.18	–
Stressful feelings at work	Mean	3.54	3.74	–
	SD	1.97	1.82	–

Notes. – = No data available;

[a] = The ESM and attrition samples were compared using chi square-tests (for categorical variables) and independent t-tests (for continuous variables). Significant differences at the 5% significance level were found for age and relationship status.

[b] = Data of a representative sample of the truck driver population in the Netherlands are based on research by the Dutch Sector Institute of Transportation and Logistics (Van Zenderen and Sombekke, 2016)

[c] = While standard deviations were not available and statistical comparisons of means were not possible, it seems that the ESM's distributions of education, gender and contract status diverged from the representative sample. Average age and mean life satisfaction in the two samples seemed to correspond; SD = Standard deviation.

Appendix B

See Table B.1.

Table B.1
Between-subject bivariate Pearson correlations between well-being variables (*N* = 82).

	1.	2.	3.	4.	5.
1. Momentary happiness	–				
2. Job satisfaction	0.46***	–			
3. Life satisfaction	0.66***	0.38***	–		
4. Self-reported health	0.30***	0.21[†]	0.21[†]	–	
5. Feelings of stress at work	−0.39***	−0.13	−0.44***	−0.19[†]	–

Note. *** = $p < 0.001$; ** = $p < 0.01$; * = $p < 0.05$; [†] = $p < 0.10$; *N* = Sample size. As commonly done in studies assessing happiness (Cheung and Lucas, 2014; Wanous et al., 1997) and health states (Macias et al., 2015), all measures were single-item. The questions had answer categories ranging on a 7-point Likert scale (e.g., 1 = "Never" to 7 = "Very often", and 1 = "Very dissatisfied" to 7 = "Very satisfied"). Job satisfaction was assessed with the question "How satisfied are you with your current job?". Life satisfaction was assessed with the question "Taking all into consideration, how satisfied are you with your life?". Self-reported health was assessed with the question "In general, how is your health?". Feelings of stress at work were assessed with the question "In the last 4 weeks, how often did you experience feelings of stress during work?".

Appendix C

See Table C.1.

Table C.1

Between-subject linear regression model on the relationship between average momentary happiness during off-job activities and job characteristics.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept	7.423*** (0.537)	7.259*** (0.518)	7.337*** (0.517)	7.392*** (0.566)	7.384*** (0.602)	7.237*** (0.544)	6.591*** (0.659)
Education level	−0.028 (0.255)	0.061 (0.262)	−0.018 (0.255)	−0.027 (0.256)	−0.020 (0.256)	0.017 (0.261)	−0.120 (0.254)
Age	−0.007 (0.010)	0.007 (0.010)	0.007 (0.010)	0.007 (0.010)	0.007 (0.010)	0.007 (0.010)	0.012 (0.010)
Working overtime: one or multiple times a week[a]	−0.133 (0.255)						
Job insecurity: some worries[b]		0.495 (0.397)					
Job insecurity: many worries[b]		−0.115 (0.369)					
Average duration trip: more than 3 hours[c]			0.057 (0.261)				
Monthly net income €1801 or more[c]				−0.064 (0.313)			
Support of colleagues: neutral[e]					−0.310 (0.503)		
Support of colleagues: agree[e]					0.008 (0.333)		
Flexible work hours: neutral[e]						0.260 (0.369)	
Flexible work hours: agree[e]						0.072 (0.281)	
Task variety: neutral[e]							1.072* (0.471)
Task variety: agree[e]							0.522 (0.401)
R^2	0.011	0.030	0.008	0.008	0.015	0.013	0.075
Total N of respondents	81	81	81	81	81	81	81

Note. *** $= p < 0.001$; ** $= p < 0.01$; * $= p < 0.05$; † $= p < 0.10$; $t =$ time; $R^2 =$ Explained variance; $N =$ Sample size.

To ensure that the nature of the different off-job activities did not bias the results of this analysis, the dependent variable, average momentary happiness during off-job activities, was corrected for the more specific off-job activities (based on a fixed effects regression in which momentary happiness scores were regressed on dummies for all specific off-job activities). One person was excluded from the analysis ($N = 81$ instead of $N = 82$), as this person did not provide any ESM-responses during off-job activities.

[a] = Reference category is working overtime a few times a month or less.

[b] = Reference category is 'few worries';

[c] = Reference category is average trip duration of 3 h or less;

[d] = Reference category is monthly net income €1800 or less.

[e] = Reference category is 'disagree'.

Appendix D. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.tra.2019.07.017.

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