Title: Predictive power of selected factors on driver stress at work

Reduced title: Predictors of Driver Stress

Abstract:

Professional drivers are considered prone to health risks. For this reason we have conducted a predictive study to analyze variables that may be predictors of stress in driving. Participating in this study were 372 drivers (93.4% men, 6.6% women) recruited through non-probabilistic sampling. The aim of the study is to develop a prediction model for Job Stress in professional drivers using the following indicators: Personality, Impulsiveness, Hardy personality, Job, Age, Seat comfort, Seat suspension, Lumbar support, and Driving Hours. We found that the variables with predictive power over driving stress were: Commitment over Relaxed driving (ΔR^2 = .101; β= .135), Danger prevention (ΔR^2 = .139; β= .342) and Fatigue & anxiety (ΔR^2 = .063; β= -.227); Control over Alertness & Vigilance (ΔR^2 = .069; β= .278); and Agreeableness over Sensation-seeking (ΔR^2 = .047; β= -.268). In conclusion, driver stress can be predicted by certain variables. This study contributes to a better understanding of driver stress and promotes safety at the wheel, thus helping to prevent traffic accidents.

Keywords: Stress in driving; driver stress; predictive factors; prevent traffic accidents; vehicle characteristics.

1. Introduction

Freight and passenger transport is a dynamic sector in the European Union. Indeed, passenger coach transportation comes in second after car transport (1). According to a report by the European Agency for Safety and Health at Work (2010), professional drivers are exposed to a higher risk of mortality on the road. Moreover, the prevalence of psychosocial risks and unsafe on-the-job behaviors is higher among this group.

Professional drivers are seen as a group that is considered prone to health risks due to physical agents (vibrations). Frequently, professional drivers are associated with a high prevalence of pain due to various causes (3). In addition to this, research studies have related job stress to substance use (4–6), driving (7), individual differences (8), pain and musculoskeletal symptoms (9), fatigue (10), chronic fatigue (11), employee emotional well-being and road rage (12), and exhaustion (13).

Fletcher and Dawson (14) related fatigue at work with number of hours worked. Chen and Xie (15) considered that driving hours and breaks are closely related to truck driver fatigue, and fatigue is a major contributor to truck accidents. Fatigue and the need to rest have also been reported to mediate in the associations between work stress and risky driving and between social support and risky driving, but not in the associations between effort/reward imbalance (ERI) and risky driving (16).

Some research studies (7,17) conclude that working alone may lead to psychosomatic disorders such as stress. Job stress affects more than one areas of a person's life. Perhaps the most exposed area is our health and our perception of it since stressful situations induce an increased physiological response by our body (18).

Other influences are the conditions in which professional drivers work. In this context, Santos and Lu (2016)(19) show that bus drivers work an average of 16 hours a

day, performing risky behaviors such as fast passenger loading and rushing to avoid being late. The most common health symptoms experienced by bus drivers are fatigue, back pain, coughs and colds. Some authors show that drivers' mental health problems are associated with increased work pressure, less support from co-workers, fewer rewards, and greater signal conflict while driving (20). There are also significant associations between measures of socio-labor variables and traffic accidents and sanctions. Work stress has also been shown to be a predictor of accidents (21).

In recent years academics and researchers have pointed to the importance of personal factors such as hardiness and vulnerability to *burnout*. *Hardiness* has been linked to health since it was first used by Kobasa (22). People with a hardy personality deal with stressing stimuli more actively and with greater commitment, and perceive them as less threatening (23).

In this study we have also taken into account job models. These are defined as a series of activities, functions or tasks that may be performed by individual workers. Hence, job posts are aggregates of tasks. The latter constitute the unit of analysis whereas job posts are the management unit. Various job analysis models exist, including the Job Characteristics Model (24) the Demand/Control Model (25) and the Effort/Reward Imbalance Model (26).

We have also taken into account personality. In this respect, several studies have linked personality to traffic accidents (27), sensation seeking (28), aggressive driving (29), speeding among young drivers (28), risk perception (30), driving attitudes (31) and reckless driving behaviors in bus drivers (32).

1.1. Objective and Hypothesis

The general aim of this study is to develop a prediction model for Job Stress in professional drivers using the following indicators: Personality, Impulsivity, Hardy Personality, Job, Age, Seat comfort, Seat suspension, Adjusted seat lumbar support and Driving Hours. Our study hypotheses are as follows:

***Hypothesis* 1**. If Relaxed Driving is influenced by Personality, Hardy Personality, the Job, Age, Seat comfort, Seat suspension, Driver Seat adjusted lumbar support and Driving Hours, then we can make a good prediction of relaxed driving based on a model that incorporates these predictors.

***Hypothesis* 2.** If Danger Prevention is influenced by Personality, Hardy Personality, the Job, Age, Seat comfort, Seat suspension, Driver seat adjusted lumbar support and Driving Hours, then we can make a good prediction of danger prevention based on a model that incorporates these predictors.

***Hypothesis* 3.** If Alertness and Vigilance is influenced by Personality, Hardy Personality, the Job, Age, Seat comfort, Seat suspension, Driver seat adjusted lumbar support and Driving Hours, then we can make a good prediction of Alertness and Vigilance based on a model that incorporates these predictors.

***Hypothesis* 4**. If Sensation seeking is influenced by Personality, Hardy Personality, the Job, Age, Seat comfort, Seat suspension, Driver seat adjusted lumbar support and Driving Hours, then we can make a good prediction of Sensation Seeking based on a model that incorporates these predictors.

***Hypothesis* 5**. If Fatigue and Anxiety is influenced by Personality, Hardy Personality, the Job, Age, Seat comfort, Seat suspension, Driver seat adjusted lumbar support and Driving Hours, then we can make a good prediction of Fatigue and Anxiety based on a model that incorporates these predictors.

2. Method

2.1. Participants

The sample consisted of 372 Spanish professional drivers (93.4 % men, 6.6 % women), whose average age was 40.9 (*SD*= 10.54). Passenger transportation 33.3 %, Freight transport 28.0 %, Ambulances drivers 2.4 % and Taxis drivers 36.3 %, the average years of experience was 10.46 (SD=13.05). The average length of time they have been driving professionally was 10.46 (*SD*= 13.05). Marital status: Married or in a couple (70.8%), single (21.2%), divorced/ separated/ widowed (8.0%). As regards their education level the distribution was as follows: not finished primary education (20.6 %), Upper secondary school, Professional Training-I or Compulsory secondary education diploma (55.2%), Lower secondary school, Professional Training-II or Prep School (21%), University studies (3.2 %). The average number of hours worked per week is 44.22 (SD = 16.9) and the average number of minutes spent per day sitting in the vehicle is 374.93 (SD = 237.30).

2.2. Instruments

In order to evaluate stress in driving we used the Trans Driver Stress (TDS-38) (33), which is a version of the Bus Driver Stress (BDS-59) (34) adapted into Spanish. The TDS-38 with a 6-point Likert scale, made up of five factors: "F1.- Relaxed driving". This refers to the driver's state of relaxation or tension during, before and after driving (7 items, α=.70), "F2.- Danger Prevention". This indicates the effort the driver makes whilst driving and the possible dangers that the driver may come up against during driving as well as the possible dangers they may encounter whilst driving on roads (8 items, α=.*77), "F3.-Alertness and Vigilance" refers to the ease with which*

drivers can relax behind the wheel or after driving. (6 items, α =.70), "F4.- Sensations Seeking" has to do with the way of driving (5 items and α=.80) and "F5.- Fatigue and Anxiety" indicates the fatigue and state of nervousness that driving produces in the Chauffer (12 items and α=.76).

The Overall Personality Assessment Scale (OPERAS) (35) is an instrument based on the five big personality factors: "*Extraversion" (*α = .86; e.g. "2. I am the life of the party"*), "Emotional Stability" (*α = .86; e.g. "32. I often change moods"), "*Conscientiousness" (*α = .77; e.g. "5. I always keep my word"), *Agreeableness (*α = .71; e.g. "12. I respect others") and "*Openness to Experience" (*α = .81; e.g. "24. I like trying out new things"). *The scale has a total of 40 items and the responses are on a 5-point Likert scale ranging from 1= Totally disagree* to *5= Totally agree*.

The Spanish version of Dickman's Impulsivity Inventory Scale (36) in its Spanish version (37) comprises 23 items and 2 subscales and has a dichotomous response format (1 = *true* / 0 = *false*). "F1. Functional impulsivity" assesses impulsiveness that is beneficial and helps one to adapt to unexpected situations that require a quick response. This is made up of 11 items (α = .77) (e.g. "5. Most of the time I can concentrate on my work very quickly". "F2. Dysfunctional impulsivity" refers to impulsiveness that, far from helping us, may be counterproductive. It is made up of 12 items (α = .76) (e.g. "2. I frequently say the first thing that comes into my head without giving it much thought").

The Trans-18 Scale (38) detects safety behaviors (personal and in-vehicle) and psychophysiological disorders. It is made up of 18 items (3 subscales). "F1. Psychophysiological Disorders" of the driver (α = .81) is related to things the driver may suffer from and refers to the appearance of anxiety, stress, digestive and musculoskeletal disorders, depression and hypertension (e.g. "11. I have had bouts of

depression caused by my job"). "F2. Personal safety behaviors" (α = .80) refers to abstaining from driving after drinking alcohol or eating a big meal as well as to not eating or drinking while driving (e.g. "7. I avoid driving when I'm smoking and I do not hold a cigarette, cigar...in my hand"). "F3. Vehicle safety behaviors" (α = .70) refers to putting on work gloves to perform job tasks, knowing how to use extinguishers, being alert while driving, and resting the mandatory number of hours (e.g. "3. I use work gloves when I handle and load freight, change a tire, etc.").

The Hardiness scale (CPR) (39) comprises 21 items and three dimensions each containing 7 items. "F1. Control" is the sensation participants have regarding influencing events (e.g. "I do all I can to make sure I have control over my work results"; α = .74). "F2. Commitment" is defined as the tendency to develop behaviors that entail personal involvement or the tendency to identify with what one does (e.g. "1. I get seriously involved in what I do because it is the best way to accomplish my own goals"; α = .79). "F3. Challenge" indicates that potentially stressing stimuli are perceived as opportunities for growth (e.g. "5. In my work I am especially attracted to innovations and new developments in procedures"; α =.83). The responses are on a 4-point Likert scale and range from 1 (*totally disagree)* to 4 (*totally agree)*.

The Job Diagnostic Survey (JDS-21) (40–42) consists of 21 items grouped into seven factors, each of 3 items and with responses on a Likert scale ranging from 1 to 7. The seven factors are: "F1. Skill Variety" (α =.78; e.g. "5. The job is quite easy and repetitive"); "F2. Task identity" (α = .78; e.g. "11. The job offers me the opportunity to completely finish off the tasks that I take on"); "F3. Task Significance" (α = .71; e.g. "8. Many people may be affected by the quality and level of my work"); "F4. Autonomy" (α =.73; e.g. "13. In this job I have quite a lot of freedom to decide on how to do it"); "F5. Feedback from Job" (α =.70; e.g. "4. The simple fact of doing my job

enables me to know how I am doing it"); "F6. Feedback from Agents" (α = .75; e.g. "10. My superiors frequently let me know what they think about my performance at work); and "F7. Dealing with others" (α = .78; e.g. "2. The job requires a lot of cooperation with other people").

Effort-Reward Imbalance (ERI) (43) evaluates psychosocial factors at work. This scale consists of 23 items with responses on a 5-point Likert scale. The factors are: "F1. Effort" (α =*.63*; e.g. "2. In my job I put up with many interruptions and inconveniences"); "F2. Reward" (α =*.80; e.g. "9. I receive the necessary support in difficult situations"); and "F3. Imbalance"* (α =*.80; e.g. "3. When I get home I find it very easy to relax and switch off").*

We also gathered data on age, seat comfort, seat suspension, driver's seat adjustable lumbar support and driving hours.

2.3. Procedure

The sample was obtained by *non-probabilistic* sampling (44), which is also called *accidental-random* sampling (45). To collect the data, we made telephone contact with the directors of several transport companies and agreed on the best time to meet the drivers.

We produced a booklet that included all the questionnaires to be used and instructions on how to complete them. A psychologist was responsible for collecting all the data at a particular company and for ensuring that no questionnaire was missing any data. The response rate was 80%. All participating drivers had voluntarily agreed to participate in the study. Several ethical guidelines were taken into account (Declaration of Helsinki, the Belmont Report and the CIOMS Guidelines) and informed consent was provided by all participants.

2.4. Data Analysis

We began our analysis by using Pearson's correlation coefficients to calculate the correlations between the predictor variables and the criterion variables. We then performed multiple regressions using the *stepwise* option, whereby the programme enters each predictor variable in the model according to the extent to which it accounts for variance. We used the SPSS version 23.0 programme.

3. Results

3.1. Reliability analysis

Table 1 shows the instruments used in this study. The indices for internal consistency are appropriate since they range from .86 (Extraversion, Emotional Stability, Challenge) to .70 (Relaxed driving).

INSERT TABLE 1 HERE

3.2. Multiple regression

The multiple linear regression models conducted were intended to test the effects of twenty-seven predictor variables on five criterion variables with respect to driving stress (Table 2).

The first model studied the predictive power of the criterion variable Relaxed Driving (TDS-38). We observe in the summary of the model that the predictor variables Commitment, Safe Personal Behaviors, Task Identity, Age, Challenge and Dysfunctional Impulsivity account for 22.7% of the criterion variable's variance.

Commitment, with 10.1% variance, seems to be the best predictor. Among the most important aspects are the standard coefficients. We can see from these coefficients that the introduced predictor variables that were statistically significant were: Commitment (β = .135), Safe Personal Behaviors (β =.185), Task Identity (β = .198), Age (β =.155), Challenge) (β =.196) and Dysfunctional Impulsivity (β = -.135).

The second model studied the predictive power of the criterion variable Danger Prevention (TDS-38). We observe in the summary of the model that the predictor variables Commitment, Effort, Conscientiousness and Task Identity account for 20.5% of the criterion variable's variance. Commitment, with 13.9% variance, is the best predictor. The standard coefficients showed that the following predictor variables were statistically significant: Commitment (β =.342), Effort (β =.168), Conscientiousness (β =.166) and Task identity (β =.148).

The third model studied the predictive power of the criterion variable Alertness and Vigilance (TDS-38). The summary of the model features the predictor variables Control, Personal Safety Behaviors and Feedback from Agents, which account for 14.7% of the criterion variable's variance. Control, accounting for 6.9% of variance, was found to be the best predictor. After the beta coefficients were applied, the following predictor variables were found to be statistically significant: Control (β =.278), Personal Safety Behaviors) (β = .229) and Feedback from Agents (β = -.182).

The fourth model studied the predictive power of variables for the criterion variable Sensation Seeking (TDS-38). The summary of the model shows that it features the predictor variables Age, Agreeableness, Personal safety behaviors, Over-involvement, Dysfunctional Impulsivity and Driver seat adjustable lumbar support, which altogether account for 25.2% of the criterion variable's variance. After the beta coefficients were applied, the predictor variables found to be statistically significant

were: Age (β = -.233), Agreeableness (β = -.268), Personal safety behaviors (β = -.161), Over-involvement (β =.193), Dysfunctional Impulsivity (β =.187) and Driver seat adjustable lumbar support (β = -.129).

The final model studied the predictive power of the criterion variable Fatigue and Anxiety (TDS-38). The summary of the model shows that it includes the predictor variables Commitment, Feedback from Job, Reward and Age, which account for 13.7% of the criterion variable's variance. Commitment, with 6.3% of variance, was found to be the best predictor. The standard coefficients showed that the following variables were statistically significant: Commitment (β = -.227), Feedback from Job (β = -.187), Reward (β =.166) and Age (β =.135).

INSERT TABLE 2 HERE

4. Discussion

The results outlined above are in line with the fact that certain variables have predictive power over the driving stress factors studied. The first hypothesis (Relaxed driving) was partially fulfilled since we observed that the best prediction model is made up of six variables: Commitment, Personal Safety Behaviors, Task identity, Age, Challenge and Dysfunctional Impulsivity. The Personality variables that were included in the model were dysfunctional impulsivity, commitment and challenge, which is in line with the findings of other authors on individual variables such as risk perception, attitude towards road safety and driver personality, which were found to be related to a greater likelihood of unsafe driving (30,31). Other studies have also concluded that the personality of young drivers generally displays riskier driving behavior, contributing to a higher road accident rate (46,47). The personal safety behavior variable is included in

the prediction model. Hunter (2002) explored this relationship and concluded that inadequate risk perception can lead drivers to ignore or misinterpret external signals, which has an impact on the driver's decision making (48). On the other hand, unwarranted optimism concerning one's safety behavior can be detrimental to safety (49), age also appeared among the predictor variables. Svenson (1981) found that young drivers perceived that they were less likely to be involved in a road accident and considered themselves to be more skillful than other drivers(50). Matthews, Joyner and Newman (1999) found that older drivers showed impairments in hazard detection and vehicle control and that they compensated for this by driving at a lower speed (51). Task identity is also a positive predictor of relaxed driving. According to González (1997) this is because it brings about changes in the driver's psychological mood (40).

The second hypothesis (Danger Prevention) was partially fulfilled since we observed that the best prediction model is one that consists of four variables: Commitment, Effort, Conscientiousness and Task identity. The personality variables included in the model that positively affect danger prevention are Conscientiousness, Effort and Commitment. Along these lines, Deffenbacher (52) demonstrated that drivers with a high anger level as a personality trait constitute a risk group, are more likely to damage their vehicle and to get injured as a result of their aggressive behaviors, and display riskier driving behaviors (16,53). The altruism, sensation seeking and the absence of regulations directly predict bus drivers' attitudes towards road safety (32). Moreover, some personality traits, such as emotional stability, directly predict risky driving behaviors in bus drivers. Some authors (16) find that fatigue and the need to rest do not mediate the association between the effort/reward imbalance (ERI) and risky driving. According to González (40) task identity also has an influence on predicting dangers since it brings about changes in the driver's psychological state. The same is

true of exhaustion (16). The third hypothesis (Alertness and Vigilance) was partially fulfilled and provided a prediction model consisting of three variables: Control, Personal safety behaviors and Feedback from Agents. Control and personal safety behaviors were found to be direct predictors. In this respect, in reference to control, point out that people who have more accidents are more individualistic, daring and aggressive and find it harder to control their impulses (54). Useche et al. (21) showed that work stress is a predictor of accidents. The safety behaviors variable is also a positive predictor. In line with this, Abe and Richardson (55) pointed out that *Advanced Driver Assistance Systems (ADAS)* have been introduced to reduce drivers' workloads and promote safe driving. In this sense, Santos and Lu (19) showed that bus drivers work excessive hours and engage in risky behaviors.

The fourth hypothesis (Sensation Seeking) was partially fulfilled since the best predictor model contains six variables: Age, Agreeableness, Personal Safety Behaviors, Over-involvement, Dysfunctional Impulsivity and Adjustable driver seat lumbar support. Age was found to be the best predictor of sensation seeking. Along these lines, Ledesma, Poó and Peltzer (56) established a positive relationship between sensation seeking and risk behaviors in driving. Moreover, they found that men tend to obtain higher scores on the scale and that these scores tend to decrease with age. On the other hand, Bachoo, Bhagwanjee and Govender (57) corroborated that men have more risky driving behavior events than women and that older drivers (over 25 years of age) display safer driving attitudes and less sensation seeking.

With regard to impulsivity, Dahlen, Martin, Ragan and Kuhlman (58) also identified positive relationships between impulsivity and risky driving behaviors. Sensation seeking also emerges as the best predictor of traffic violations, as well as anger, hostility and a combination of these three variables (sensation seeking, anger and

hostility) (28,57). Sensation seeking is reinforced by alcohol consumption (59). Prosocial driving, as the antithesis of sensation seeking, is associated with drivers who are less prone to boredom and with higher scores in Agreeableness, Conscientiousness, Openness, Scrupulousness and Neuroticism, as well as lower scores in Competitiveness, Sensation seeking, Hostility and Extraversion (60). Conscientiousness and safety behaviors are negative predictors of sensation seeking. Yildirim-Yenier, Vingilis, Wiesenthal, Mann and Seeley (61) recommended that anti-speeding campaigns in Canada should address factors such as competitive attitudes towards driving and changes in attitude. We also found a negative relationship with Adjustable driver seat lumbar support. In 1985, Bellmunt (62) explains that it is important to provide support for the back vertebra (12a – 4a) and that the rest must prevent lateral swaying from side to side when the driver is subjected to forces from the side. It is also important to ensure that the drivers are not stuck in the same position (over time this is uncomfortable) and that they can slightly shift their position.

The fifth hypothesis (Fatigue and Anxiety) was partially fulfilled since the prediction model contains four variables: Commitment, Feedback from Job, Reward and Age. Age and reward were found to be positive predictors. Along these lines, Fernandes, Hatfield and Soames Job (63), in a sample of young drivers, found a relationship between personality and attitudinal factors (age, gender, sensation seeking, driver anger, emergency time, perceived personal risk, perceived costs, perceived benefits and peer influence) in predicting speeding, drink driving, driving in a state of fatigue, and not wearing a seat belt. These results highlight the importance of designing individual road safety initiatives to address individual driving behaviors.

As far as Feedback from the Job is concerned, Gwyther and Holland (64) also pointed out that self-regulation in driving increased with driver experience. Greater

experience behind the wheel facilitates higher levels of control over one's state of anxiety, which in turn leads to safer behavior on the road. Useche et al. (21) showed significant associations between measures of socio-labor variables, traffic accidents and sanctions. Chen and Xie (15) consider that driving hours and breaks are closely related to truck driver fatigue, which is a major contributor to truck accidents.

In conclusion, the results of this study contribute to our knowledge of driving stress in various aspects. The dimensions of stress in drivers are partially predicted by several variables. The variables with the greatest predictive capacity are: Commitment vs Relaxed driving ($\Delta R2 = .101$; $\beta = .135$), Danger prevention ($\Delta R2 = .139$; $\beta = .342$) and Fatigue and anxiety ($\Delta R2 = .063$; $\beta = -.227$); Control vs Alertness & Vigilance ($\Delta R2 = .069$; $\beta = .278$); and Agreeableness vs. Sensation seeking ($\Delta R2 = .047$; $\beta = -.268$). Safety behind the wheel can therefore be affected by driving stress and road accidents can be prevented.

5. Implications

Our findings present important practical implications for driver stress that should be taken into account by passenger transportation companies in their strategic management of human resources. It is important that those responsible for Human Resources and Occupational Health assess the stress levels of professional drivers beyond what is required by current legislation in order to reduce both the accident rate and absenteeism. It is also necessary to prioritize Strategic Human Resources Management to help employees achieve better psycho-social well-being. Moreover, certain personality variables should be taken into account during selection and/or internal promotion processes so that a good match between job position and chosen candidate can be made.

6. Limitations of the study

This study presents several limitations: First, the data were obtained via self-report measures, which, according to Razavi (65), can lead to bias ranging from social desirability to lack of sincerity. Also, factors such as positive or negative affectivity can influence the type of responses participants may present (34). Secondly, the methodology should be examined as in some variables it may lead to biased results since the drivers may not be aware of the symptoms or the effects of the variable we are measuring. Future research should consider the use of qualitative information collection strategies that would enable better understanding of the characteristics of the work and the impact this may have on stress (driving shifts, time pressure, rest periods, performance, etc.).

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Table 1. *Descriptive statistics and reliability values with Cronbach's alpha coefficient.*

Variable	Minimum	Maximum	Mean	*SD*	α
TDS15_RD Relaxed driving	-3	12	4.98	3.39	.70
TDS15_PH Danger prevention	3	18	15.92	2.51	.73
TDS15_AS Alertness & Vigilance	3	18	14.54	3.13	.71
TDS15_TS Sensation seeking	3	18	6.90	3.32	.75
TDS15_FA Fatigue & anxiety	3	18	7.36	3.46	.70
OP.EX Extraversion	25	67	46.70	9.39	.86
OP.CO Conscientiousness	31	70	50.36	9.05	.77
OP.AG Agreeableness	20	79	50.49	11.48	.71
OP.ES Emotional Stability	25	66	48.95	9.10	.86
OP.OE Openness Experience	33	68	50.42	8.71	.81
IMP.F Functional Impulsivity	0	11	5.65	2.44	.75
IMP.D Dysfunctional Impuls.	0	11	3.12	2.50	.74
T18_TP Psychophysiological Dis.	6	30	11.32	3.71	.74
T18_SP Personal safety behaviors	6	30	22.36	4.90	.75
T18_SV Vehicle safety behaviors	14	30	24.85	3.80	.73
CPR Control	7	28	22.08	3.00	.71
CPR Commitment	10	28	22.14	3.63	.82
CPR Challenge	7	28	20.69	3.90	.86
JDS Skill Variety	5	21	14.35	3.38	.77
JDS Task Identity	5	21	16.31	3.82	.75
JDS Task Significance	5	21	13.42	2.76	.72
JDS Autonomy	5	21	12.81	2.72	.73
JDS Feedback from job	7	21	13.74	2.18	.71
JDS Feedback from agents	3	21	11.61	2.76	.74
JDS Dealing with others	4	21	14.57	3.06	.77
ERI Effort	0	6	3.32	.87	.74
ERI Reward	0	9	4.16	1.58	.81
ERI Imbalance	1	6	3.61	.89	.81

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579 Table 2. *Summary of the prediction models for the five TDS-38 criterion variables.*

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PREDICTIVE VARIABLES	Factor 1 Relaxed driving		Factor 2 Danger prevention		Factor 3 Alertness & Vigilance		Factor 4 Sensation seeking		Factor 5 Fatigue & anxiety	
	ΔR^2 Corrected	β	ΔR^2 Corrected	β	ΔR^2 Corrected	β	ΔR^2 Corrected	B	ΔR^2 Corrected	β
OP.CO Conscientiousness	---	---	.023	.166	---	---	---	---	---	---
OP.AG Agreeableness	---	---	---	---	---	---	.047	-.268	---	---
CPR Commitment	.101	.135	.139	.342	---	---	---	---	.063	-.227
CPR Challenge	.022	.196	---	---	---	---	---	---	---	---
CPR Control	---	---	---	---	.069	.278	---	---	---	---
IMP.D Dysfunctional Impuls.	.014	-.135	---	---	---	---	.023	.187	---	---
JDS Task Identity	.026	.198	.018	.148	---	---	---	---	---	---
JDS Feedback from job	---	---	---	---	---	---	---	---	.044	-.187
JDS Feedback from agents	---	---	---	---	.029	-.182	---	---	---	---
ERI Effort	---	---	.025	.168	---	---	---	---	---	---
ERI Reward	---	---	---	---	---	---	---	---	.016	.166
ERI Imbalance	---	---	---	---	---	---	.022	.193	---	---
T18_SP Personal safety behaviors	.043	.185	---	---	.049	.229	.054	-.161	---	---
Age	.021	.155	---	---	---	---	.094	-.233	.014	.135
Driver seat adjustable lumbar support	---	---	---	---	---	---	.012	-.129	---	---
Total explained variance (%)	22.7		20.5		14.7		25.2		13.5	

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