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Research Article

Organisational Sources of Pressure as Predictors of Mental and Physical Health and Satisfaction in Italian Public Transport Employees

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Workers in the transport sector face significant occupational risks related to their roles and environmental conditions, which contribute to their physical and psychological distress. This study examined the relationship between stressors and the health and job satisfaction of Italian transport workers, while investigating the moderating role of personal resources. A cross-sectional study was conducted using the self-reported occupational stress indicator (OSI) questionnaire, which was completed by 289 transport workers. The findings confirm that compared to the Italian normative sample, transport workers reported higher work pressure and lower physical and psychological health and job satisfaction scores. The results align with prior research, particularly on the prevalence of type A behaviour among drivers. Three primary stressors were identified: interpersonal relationships (affecting both satisfaction and mental health), job-specific factors (affecting physical health) and organisational structure (affecting job satisfaction). Additionally, type A behaviour negatively moderated stress-related outcomes, while coping strategies, such as logic and social support, served as protective factors. In terms of practical implications, the need for improved training in customer interactions, stress management and de-escalation techniques was emphasised. Strengthening coping strategies through training programmes may enhance worker well-being and overall service quality. Given the sector's societal importance, targeted interventions are necessary to mitigate stress-related consequences and enhance worker resilience.

Keywords: job satisfaction; mental health; organisational stressors; physical health; public transport employees; type A personality

1. Introduction

The literature supports the idea that work-related stress represents a significant psychosocial risk factor in almost all existing occupations (e.g., [1, 2]). This stems from the fact that stress compromises work performance and has profound negative consequences for individuals' physical and psychological health [3, 4], also interacting with biological and neuropsychological markers of vulnerability highlighted in clinical populations [5].

Workplace stress is defined as a harmful psychological and physical response that arises due to a conflict between the demands placed on a worker and the resources available to address such demands [6, 7]. A stressful work environment can lead to absenteeism, a lack of creativity and motivation, indifference and apathy and job dissatisfaction, thereby affecting workers' quality of life [8]. In addition to their consequences on organisational behaviour, stressful workplaces are well documented as being related to many health issues, such as cardiovascular diseases, fatigue, drowsiness, overweight and/or obesity, gastrointestinal disorders and physical inactivity (e.g., [9]). Issues, such as burnout, reduced attention and decision-making capacity and risky behaviours may also arise (e.g., [10]), underlining the importance of adequate

assessment tools for risky behaviours in occupational contexts [11].

The literature highlights that the amount of stress an individual experiences results from various factors, such as the presence of different organisational stressors (e.g., the type of job performed and the social support provided by the organisation), and subjective factors such as coping mechanisms and locus of control (e.g., [10, 12]). Transport drivers represent a particularly vulnerable occupational group exposed to various risk factors related to their work profiles and work environments, which explains the growing number of studies on this topic in recent decades [13]. They are considered vulnerable due to the higher severity and frequency of injuries compared to other occupations. For example, drivers are highly involved in road accidents, which threaten the well-being and health of all road users [14].

In other areas of the transport sector, the literature has also highlighted the presence of significant sources of work-related stress among drivers. Airline pilots, for example, are exposed to high levels of psychophysiological stress due to irregular shifts, high levels of responsibility and intense cognitive loads, which negatively affect alertness, decision-making quality and overall well-being [15]. Similarly, in the maritime sector, recent research has highlighted the emergence of technostress, linked to the introduction of digital technologies on board and increasing operational complexity, which affect the psychological well-being of crews [16]. Train drivers have also been identified as a high-risk category for stress due to their high levels of responsibility, rigid work schedules and physical and mental fatigue, with repercussions on their psychological well-being [17, 18]. Although stress is present in all these professions, the literature highlights that road drivers are particularly vulnerable due to a combination of ergonomic factors, social isolation, rigid schedules and low decision-making autonomy [19]. These conditions expose them to more serious negative outcomes in terms of physical and mental health. For this reason, it is considered a priority in the literature to address the different elements (organisational, relational and subjective) that characterise this work environment and possible operational solutions (e.g., [3, 13]).

Most studies addressing the topic of work-related stress among drivers have used two main theoretical frameworks: the job demand–resources (JD-R) model [20–22] and Cooper's model of occupational stress (e.g., [12]). The JD-R model supports the idea that stress occurs when external demands are combined with low levels of perceived control. Cooper's model considers the role of different sources of work pressure, which, when interacting with certain personality factors, affect workers in terms of health and job satisfaction [12]. This model emphasises how work-related stress stems from workers' negative perceptions of the context and their inability to cope with them positively.

What is clear from studies using both models is that specific work-related organisational factors are associated with negative outcomes for drivers in terms of both physical and psychological health (e.g., [23]). For example, transport workers are at an increased risk of cardiovascular diseases, which are primarily linked to unhealthy diets and sedentary lifestyles [24]. In addition, hypertension, musculoskeletal and ergonomic problems, gastrointestinal disorders, lower back pain, spinal injuries and herniated discs are common, often resulting from prolonged poor posture [25]. Noise pollution often leads to hearing impairments and disabilities, even in young workers; in addition, exposure to exhaust gases is associated with lung problems and infertility among transportation sector workers (e.g., [26, 27]).

Furthermore, traffic congestion, time pressure and social isolation contribute to psychological distress, burnout, depression and chronic fatigue in drivers [28, 29]. It is worth noting that the rest periods for this type of work are often limited, as rigid shift schedules do not allow for adequate recovery, thereby exacerbating pre-existing fatigue conditions [24, 30]. These physical and psychological working conditions worsened during the COVID-19 pandemic; drivers shared close spaces with numerous passengers, some of whom may have unknowingly been infected, thereby increasing the likelihood of contracting the virus [31].

There is a strong association in the literature between these work-related stress factors and poor health, absenteeism, turnover, aggression and mental health in drivers [32]. Medications (e.g., antidepressants, anxiolytics and analgesics) offer little relief because they impair driving performance and compromise drivers' operational safety [33].

Among organisational factors, organisational support and job autonomy seem to serve as protective factors for stress in drivers [34, 35]. Job autonomy acts as a moderator between the effects of job demands, physiological arousal and psychological well-being, suggesting that increasing job decision-making autonomy can mitigate the negative health impacts of job demands [36].

A review by Johns et al. [13] identified the key variables involved in the development of work-related stress among drivers, considering some personal variables as possible moderators or mediators. For instance, they found that drivers with type A personalities were at higher risk of road accidents, had higher rates of absenteeism and received more warnings from management [13]. Consequently, investigating the role of personal variables in modulating the impact of organisational determinants on the health and job satisfaction of workers in the transport sector is necessary.

Gender also appears to play a role. Although driving as an occupation has a higher percentage of male workers, female drivers appear to experience greater tension due to negative passenger behaviour [37]. This aspect parallels evidence from clinical studies showing gender-specific risk profiles in stress-related outcomes, such as suicidal behaviour [38]. In the literature, the locus of control does not have a clear role in relation to drivers as a protective factor against stress in workplace contexts [13]. Studies have also provided indications of how work–family conflict can be considered an additional risk factor for emotional exhaustion in drivers.

In addition to worker health, many sources of work pressure impact driver satisfaction, which is one of the most important indicators of subjective well-being [31, 34, 39, 40]. This relationship highlights how organisational factors

and job demands can directly affect not only performance but also drivers' overall quality of life and psychological resilience.

It is necessary to consider both organisational and role factors specific to the transport sector, as well as the roles of different types of variables (relational, sociodemographic, personality, personal resources, etc.) and their interactions, in the evaluation of effects on workers' health and satisfaction. The goal is to better understand the specificities that characterise drivers' work and to develop tools and effective strategies for stress management and prevention.

Although the international literature has extensively addressed work-related stress among transport workers, studies conducted on Italian samples remain scarce. For example, Bergomi et al. [41] found high levels of work-related stress, particularly associated with emotional exhaustion and specific personality traits, among Italian bus drivers. Similarly, a recent study by Manai et al. [42] reported significant associations between work-related stress and reduced health-related quality of life in a sample of Italian transport workers. The scarcity of research on this topic, particularly in Southern Italy, highlights a significant gap that justifies a more in-depth exploration of work-related stress among transport drivers in Italy.

Based on Cooper's occupational stress theory [12], the present study examines the sources of pressure in a sample of Italian drivers and identifies the moderating role of personality factors in the relationship between stressors and outcomes. Referring to the most recent international literature in the transportation sector, this study considers sources of pressure (factors intrinsic to the job, managerial role, relationships with other people, career and achievement and organisational structure and climate), individual differences (type A behaviour, locus of control and coping strategies) and outcomes (job satisfaction and mental and physical health).

This research provides results in the Italian context and useful indications for the implementation of targeted strategies for stress prevention and management in the transportation sector. In addition to this general aim, the study aims to (a) compare occupational stress indicator (OSI) scores with those of the Italian working population, (b) analyse the role of sociodemographic variables (e.g., job role, age and seniority) in the different measured variables, (c) explore the sources of pressure that best predict job satisfaction and mental and physical health and (d) test the possible moderating role of individual differences (type A behaviour, coping strategies and locus of control) in the relationship between work stressors and outcomes according to Cooper's model [12].

Building on Cooper's model of occupational stress and the JD-R framework, we propose the following research hypotheses. First, we expect that different organisational stressors show domain-specific associations with outcomes; specifically, interpersonal relationship stressors negatively predict both mental health and job satisfaction [43], while job-intrinsic stressors primarily predict physical health [44]. Moreover, organisational structure and climate are hypothesised to exert a strong negative effect on job satisfaction, in line with evidence linking a lack of autonomy and procedural ambiguity to reduced engagement [45].

Second, regarding the moderating role of individual difference variables, we hypothesise that type A behaviour strengthens the negative association between stressors and outcomes, particularly for interpersonal and organisational climate stressors, amplifying their detrimental impact on satisfaction and well-being [46]. Conversely, coping strategies are expected to buffer these relationships, weakening the associations of stressors and adverse outcomes [47]. The role of locus of control is examined with caution, given the inconsistent evidence in prior studies; however, an external locus of control is tentatively expected to exacerbate the negative effects of organisational stressors, while a more internal locus may exert a protective influence [48].

Accordingly, our research questions can be reformulated into testable hypotheses:

H1. Interpersonal stressors negatively predict both job satisfaction and mental health.

H2. Job-intrinsic stressors negatively predict physical health.

H3. Organisational structure and climate negatively predict job satisfaction.

H4. Type A behaviour exacerbates the negative effects of organisational stressors on health and satisfaction.

H5. Coping strategies buffer the relationship between organisational stressors and outcomes, thereby reducing their adverse impact.

H6. Locus of control moderates stressor–outcome relationships, with externality amplifying negative effects and internality serving as a protective factor.

2. Methods

2.1. Participants and Procedures. The sample was recruited from employees of a large public transportation company in Southern Italy. The company manages the urban connexions within one of the three Sicilian metropolitan cities, accounting for more than one million inhabitants spread across over 3500 km^2. As part of a project on the working conditions of drivers, a study that involved administering a questionnaire during working hours was conducted. Following a plenary training session in a large conference room, the training team administered the questionnaire and provided instructions for its completion. The session lasted approximately 30 min, including the introduction of the questionnaire, delivery and completion. Data collection took place in March 2022.

Approximately 400 workers with operational duties and fixed-term employment contracts were considered for this study, of whom 289 were available to participate in the research (response rate: 72.25%). They were almost all male ($n = 285$), and their average age was 48.95 years (SD = 6.68). Most were drivers ($n = 249$, 86.2%), followed by mechanics ($n = 34$, 11.7%) and office workers ($n = 6$, 2.1%). The average

Table 1: Demographics of the sample.

Variable	*M*	SD
Age	48.95	6.68
Seniority	16.41	8
Work hours per day	7.2	0.78
	N	***%***
Gender		
Male	285	98.6
Female	4	1.4
Job role		
Driver	249	86.2
Mechanic	34	11.7
Office worker	6	2.1
Marital status		
Single	24	8.3
Married	250	86.5
Other	8	2.8
Widower	7	2.4
Education		
Middle school	0	0
High school	125	43.3
University degree	160	55.4
Postgraduate degree	4	1.3

length of service was 16.41 years (SD = 8.05), with a work shift of 7.2 h (SD = 0.78) and a permanent contract (Table 1).

An a priori power analysis was conducted to determine the adequacy of the sample size for the planned regression and moderation analyses. Following Cohen's [49] conventions, we considered a medium effect size ($f^2 = 0.15$) to be the target for the overall regression models, with $\alpha = 0.05$ and desired power $(1 - \beta) = 0.80$. Under these parameters, the required sample size for models including upto 10 predictors was $N = 128$. For incremental tests of moderation, we evaluated the power to detect effects of varying magnitudes: while a very small effect ($f^2 = 0.02$) would require a substantially larger sample, small-to-medium effects ($f^2 = 0.03 - 0.05$) were detectable, with N ranging from 171 to 276. Based on these considerations, the planned sample size of 289 participants was deemed sufficient to achieve adequate statistical power for the study's primary analyses, while acknowledging reduced sensitivity for detecting very small effects.

Participation was voluntary, and there was no compensation for taking part in the study. The research complied with the Declaration of Helsinki and the Associazione Italiana Psicologia ethical code (2023), and received approval from the ethics committee (e-Campus University, protocol: 03/2020, dated 28 December 2020).

Anonymity was ensured by associating a random code with each questionnaire and treating the data in aggregated form. Completion of the questionnaire required approximately 30 min. Before filling out the questionnaire, the participants were informed of significant details and their right to refuse to participate or withdraw consent to participate at any time without consequences. After confirming that they understood the instructions and agreed to participate in the study, and written informed consent was obtained from all participants, they completed the questionnaire.

2.2. Measures. All participants completed the sociodemographic section of the survey and the Italian version of the OSI questionnaire [50]. The OSI measures three domains of variables related to the occupational stress model [12]—sources of pressure, individual differences and effects—through 167 items using a six-point Likert-type scale.

In more detail, the sources of pressure subscales were as follows: (a) factors intrinsic to the job (9 items), (b) managerial role (11 items), (c) relationships with other people (9 items), (d) career and achievement (9 items), (e) organisational structure and climate (11 items) and (f) home–work interface (11 items; Cronbach's alpha = 0.967, McDonald's $\omega = 0.965$). Individual differences included (a) type A behaviour (14 items), (2) locus of control (12 items) and (3) coping strategies (28 items). The type A behaviour pattern scale is composed of three subscales exploring attitude towards life (6 items), behavioural style (5 items) and ambition (3 items; Cronbach's alpha = 0.669, McDonald's $\omega = 0.651$). Locus of control is structured with three subscales: organisational forces (5 items), management processes (4 items) and individual influences (3 items; Cronbach's alpha = 0.740, McDonald's $\omega = 0.738$). Coping strategies were measured through social support (4 items), task strategies (7 items), logic (3 items), home–work relationships (4 items), effective use of time (4 items) and involvement (6 items; Cronbach's alpha = 0.895, McDonald's $\omega = 0.888$).

Effects were composed of mental health (18 items; Cronbach's alpha = 0.876, McDonald's $\omega = 0.862$), physical health

Table 2: Stepwise multiple linear regression on job satisfaction.

Step	Variable	*B*	SE	Beta	*R*	R^2	Adj. R^2	*p*-Value
1	Individual influence	−1.7	0.3	−0.25	0.28	0.08	0.07	<0.001
2	Organisational structure and climate	−0.9	0.2	−0.45	0.34	0.12	0.11	<0.001
3	Relationship with people	1.14	0.22	0.5	0.43	0.18	0.18	<0.001
4	Task oriented	0.61	0.27	0.16	0.48	0.23	0.22	<0.05
5	Attitude towards life	−1.5	0.36	−0.23	0.5	0.25	0.24	<0.001
6	Involvement	0.9	0.3	0.21	0.52	0.27	0.26	<0.01
7	Management processes	−0.6	0.21	−0.32	0.54	0.29	0.28	<0.01

Table 3: Stepwise multiple linear regression on psychological health.

Step	Variable	*B*	SE	Beta	*R*	R^2	Adj. R^2	*p*-Value
1	Behavioural style	1.13	0.16	0.4	0.36	0.13	0.13	<0.001
2	Organisational forces	0.67	0.17	0.21	0.42	0.18	0.17	<0.001
3	Involvement	−0.7	0.15	−0.27	0.45	0.2	0.19	<0.001
4	Ambition	1.08	0.28	0.2	0.48	0.23	0.22	<0.001
5	Relationship with people	0.27	0.08	0.18	0.5	0.25	0.24	<0.01
6	Management processes	0.85	0.3	0.14	0.52	0.27	0.26	<0.01

Table 4: Stepwise multiple linear regression on physical health.

Step	Variable	*B*	SE	Beta	*R*	R^2	Adj. R^2	*p*-Value
1	Factors intrinsic to the job	0.58	0.1	0.33	0.35	0.12	0.11	<0.001
2	Behavioural style	0.82	0.15	0.29	0.41	0.17	0.16	<0.001
3	Task oriented	−0.5	0.18	−0.21	0.45	0.21	0.2	<0.01
4	Home–work interface	0.67	0.22	0.22	0.47	0.22	0.21	<0.01
5	Involvement	−0.45	0.2	0.2	0.48	0.23	0.22	<0.05

(12 items; Cronbach's alpha = 0.931, McDonald's $\omega = 0.930$) and job satisfaction (22 items; Cronbach's alpha = 0.942, McDonald's $\omega = 0.942$). Job satisfaction was composed of the following six five subscales: achievement value and growth (6 items), the job itself (4 items), organisation design and structure (5 items), organisational processes (4 items) and personal relationships (3 items).

2.3. Data Analysis. The Statistical Package for Social Sciences v. 29 and the PROCESS macro were used for the analyses. Differences between the sample and the OSI's normative data referring to the Italian working population were explored using the *Z*-test. Levene's test was used to test homogeneity of variance, and Welch correction was applied in case of significance. One-way ANOVA with Bonferroni correction and related effect-size scores (η^2) was applied to detect significant differences between work roles.

Pearson's correlations were used to explore the relationships between age, service seniority and other variables. Stepwise multiple regression analyses were conducted to examine the relative contribution of psychosocial predictors to job satisfaction, mental health and physical health. The stepwise method was selected to identify the most parsimonious model while retaining only predictors that significantly increased the explained variance. Variables were entered sequentially according to their statistical contributions, with the entry and removal criteria set at and $p < 0.05$ and $p > 0.10$, respectively. At each step, the predictor that explained the largest additional proportion of variance was added to the model, and the cumulative R^2 was calculated. The procedure stopped when no further predictors met the inclusion criteria. The regression coefficients, significance levels and incremental R^2 values for each step are reported in Tables 2–4.

Finally, following Cooper's model, bootstrap moderation analysis using the PROCESS macro was conducted separately for each dependent variable, based on the significant predictors identified in multiple regressions. Sources of pressure were considered independent variables (factors intrinsic to the job, managerial role, relationships with other people, career and achievement, organisational structure and climate and home–work interface). Individual differences were considered moderators (type A personality, locus of control and coping strategies).

Since the research employed a single questionnaire to measure all variables, in line with the recommendations found in the literature [51], we randomly arranged various scales throughout the questionnaire and visually distinguished them from one another. We also used diverse scale endpoints and formats for the measures to mitigate method biases stemming from similarities in scale endpoints and

anchoring effects. We tested CMB through Harman's single-factor test, which explained 16.55% of the variance.

3. Results

The demographics of the sample are presented in Table 1.

3.1. Differences With Normative Data of the Italian Working Population. The OSI's Italian normative data were calculated on a sample of 855 subjects (319 males and 534 females) from various professions. The *Z*-test was used to compare the present sample with the normative data, with Cohen's *d* as the effect size index .The results showed significantly lower scores in many sources of pressure, namely, factors intrinsic to the job ($z = -5.89$, $p < 0.001$, $d = -0.35$; $M = 31.82$, SD = 7.29 vs. $M_n = 34$, SD = 6.29), role ($z = -9.87$, $p < 0.001$, $d = -0.58$; $M = 40.69$, SD = 10.35 vs. $M_n = 45$, SD = 7.42), relationship with people ($z = -3.18$, $p < 0.001$, $d = -0.19$; $M = 34.74$, SD = 8.84 vs. $M_n = 36$, SD = 6.73), career and achievement ($z = -9.47$, $p < 0.001$, $d = -0.56$; $M = 32.29$, SD = 7.88 vs. $M_n = 36$, SD = 6.66), organisational structure and climate ($z = -4.62$, $p < 0.001$, $d = -0.27$; $M = 42.93$, SD = 9.37 vs. $M_n = 45$, SD = 7.62) and home–work interface ($z = -9.33$, $p < 0.001$, $d = -0.55$; $M = 39.36$, SD = 11.01 vs. $M_n = 44$, SD = 8.45). Furthermore, transport sector workers, compared to the normative sample, obtained lower values with regard to the following outcomes: job satisfaction ($z = -8.07$, $p < 0.001$, $d = -0.47$; $M = 74.39$, SD = 20.18 vs. $M_n = 82$, SD = 16.04), achievement value of growth ($z = -9.85$, $p < 0.001$, $d = -0.58$; $M = 19$, SD = 6.17 vs. $M_n = 22$, SD = 5.18), the job itself ($z = -8.53$, $p < 0.001$, $d = -0.5$; $M = 15.6$, SD = 4.01 vs. $M_n = 17$, SD = 2.79), organisational design and structure ($z = -5.12$, $p < 0.001$, $d = -0.3$; $M = 15.7$, SD = 5.19 vs. $M_n = 17$, SD = 4.32), organisational processes ($z = -9.44$, $p < 0.001$, $d = -0.56$; $M = 13$, SD = 4.18 vs. $M_n = 15$, SD = 3.6), personal relationships ($z = -6.51$, $p < 0.001$, $d = -0.38$; $M = 11$, SD = 2.98 vs. $M_n = 12$, SD = 2.61), mental health ($z = -9.07$, $p < 0.001$, $d = -0.53$; $M = 56.27$, SD = 12.61 vs. $M_n = 62$, SD = 10.74) and physical health ($z = -3.15$, $d = -0.19$; $M = 28.1$, SD = 12.64 vs. $M_n = 30$, SD = 10.27). Compared with the normative sample, the present sample showed lower scores for locus of control. ($z = -2.73$, $p < 0.001$, $d = -0.16$; $M = 42.95$, SD = 4.67 vs. $M_n = 44$, SD = 6.55) and social support ($z = -5.4$, $p < 0.001$, $d = -0.32$; $M = 15.9$, SD = 4.37 vs. $M_n = 17$, SD = 3.46); however, significantly higher scores were found for type A personality profile ($z = 4.45$, $p < 0.001$, $d = 0.26$; $M = 52.08$, SD = 5.55 vs. $M_n = 50$, SD = 7.94), task oriented ($z = 9.13$, $p < 0.001$, $d = 0.54$; $M = 29.32$, SD = 5.21 vs. $M_n = 27$, SD = 4.32) and logic ($z = 2.33$, $p < 0.001$, $d = 0.15$; $M = 13.36$, SD = 3.59 vs. $M_n = 13$, SD = 2.63).

3.2. Sociodemographics. One-way ANOVA detected significant differences between job roles and the job itself (as a job satisfaction subdimension; $F = 3.3$, $p < 0.05$, $\eta^2 = 0.023$), behavioural style (as a type A behaviour subdimension; $F = 3.5$, $p < 0.05$, $\eta^2 = 0.024$), type A behaviour ($F = 3.4$, $p < 0.05$, $\eta^2 = 0.023$) and career and achievement (as a source of pressure; $F = 3.37$, $p < 0.05$, $\eta^2 = 0.023$). After Bonferroni correction, drivers were significantly less satisfied with the job itself than were mechanics ($M_1 = 15.38$, SD = 4.1 vs. $M_2 = 17.21$, SD = 2.7; $p < 0.05$). Mechanics were more behaviourally prone to type A personality profile than were office workers ($M_1 = 20.15$, SD = 4.5 vs. $M_2 = 15$, SD = 3.7; $p < 0.05$) and were also more committed to work than were office workers ($M_1 = 53.18$, SD = 5.3 vs. $M_2 = 46.83$, SD = 3.3, $p < 0.05$). Finally, drivers had a minor perception of career development compared to mechanics ($M_1 = 31.79$, SD = 8 vs. $M_2 = 35.36$, SD = 5.5; $p < 0.05$).

Pearson's correlations were calculated between age, service seniority and the OSI variables. Age was significantly correlated with the job itself ($r = 0.12$, $p < 0.05$), psychological health ($r = 0.14$, $p < 0.05$), organisational forces ($r = 0.26$, $p < 0.001$) and locus of control ($r = 0.16$, $p < 0.01$). Seniority was positively correlated with psychological health ($r = 0.14$, $p < 0.05$), behavioural style ($r = 0.13$, $p < 0.05$) and organisational forces ($r = 0.16$, $p < 0.01$) but was negatively associated with ambition ($r = -0.14$, $p < 0.05$) and individual influence ($r = -0.12$, $p < 0.05$).

3.3. Sources of Pressure as Predictors of Outcomes. A stepwise method was used to identify predictors among the sources of pressure for the three dependent variables (job satisfaction, psychological health and physical health).

The stepwise regression identified a final model, including seven predictors of job satisfaction: individual influence, organisational structure and climate, relationship with people, task oriented, attitude towards life, involvement and management processes. In step 1, individual influence was entered into the model, explaining 8% of the variance ($R^2 = 0.08$, Adj. $R^2 = 0.07$, $p < 0.001$). In step 2, organisational structure and climate was added, increasing the explained variance to 12% ($\Delta R^2 = 0.04$, Adj. $R^2 = 0.11$, $p < 0.001$). In step 3, relationship with people further improved the model, raising the explained variance to 18% ($\Delta R^2 = 0.06$, Adj. $R^2 = 0.18$, $p < 0.001$). In step 4, task oriented contributed an additional 5% ($R^2 = 0.23$, Adj. $R^2 = 0.22$, $p < 0.05$). In step 5, attitude towards life was entered into the model, increasing the explained variance to 25% ($\Delta R^2 = 0.02$, Adj. $R^2 = 0.24$, $p < 0.001$). In step 6, involvement added a further 2% ($R^2 = 0.27$, Adj. $R^2 = 0.26$, $p < 0.01$). Finally, in step 7, management processes increased the explained variance to 29% ($\Delta R^2 = 0.02$, Adj. $R^2 = 0.28$, $p < 0.01$).

The regression coefficients, standardised betas and significance levels for all predictors are presented in Table 2.

The stepwise regression procedure identified a final model, including six predictors of psychological health: behavioural style, organisational forces, involvement, ambition, relationship with people and management processes. In step 1, behavioural style was entered into the model, explaining 13% of the variance ($R^2 = 0.13$, Adj. $R^2 = 0.13$, $p < 0.001$). In step 2, organisational forces was added, increasing the explained variance to 18% ($\Delta R^2 = 0.05$, Adj. $R^2 = 0.17$, $p < 0.001$). In step 3, involvement further improved the model, raising the explained variance to 20% ($\Delta R^2 = 0.02$, Adj. $R^2 = 0.19$, $p < 0.001$). In step 4, ambition was added, leading to a cumulative R^2 of 0.23 ($\Delta R^2 = 0.03$, Adj. $R^2 = 0.22$, $p < 0.001$). In step 5, relationship with people was

retained, accounting for 25% of the variance ($\Delta R^2 = 0.02$, Adj. $R^2 = 0.24$, $p < 0.01$). Finally, in step 6, management processes increased the explained variance to 27% ($\Delta R^2 = 0.02$, Adj. $R^2 = 0.26$, $p < 0.01$). The full regression coefficients and significance levels for each step are reported in Table 3.

The stepwise multiple regression identified five significant predictors of physical health (Table 4). In the first step, factors intrinsic to the job accounted for 12% of the variance ($R^2 = 0.12$, $p < 0.001$). In the second step, the inclusion of behavioural style explained an additional 5% of variance ($\Delta R^2 = 0.05$), raising the total explained variance to 17% ($R^2 = 0.17$, $p < 0.001$). In the third step, task-oriented behaviour contributed a further 4% ($\Delta R^2 = 0.04$), increasing the explained variance to 21% ($R^2 = 0.21$, $p < 0.01$). In the fourth step, the home–work interface added 1% to the explained variance ($\Delta R^2 = 0.01$), bringing the total to 22% ($R^2 = 0.22$, $p < 0.01$). Finally, in the fifth step, involvement explained an additional 1% of the variance ($\Delta R^2 = 0.01$), with the final model accounting for 23% of the variance in physical health ($R^2 = 0.23$, Adj. $R^2 = 0.22$, $p < 0.05$).

3.4. Moderation Analyses. Considering Cooper's model and previous significant regressions, a bootstrap moderation analysis was run to explore how individual characteristics (type A and locus of control) influenced the relationship between sources of pressure and outcomes (job satisfaction, mental health and physical health; [12]).

Among the sources of pressure, only organisational structure and climate ($\beta = -0.45$, $p < 0.001$) and relationship with people ($\beta = 0.59$, $p < 0.001$) significantly predicted job satisfaction. To test the moderating role of individual characteristics (type A behaviour and locus of control) between these predictors and job satisfaction, we conducted separate PROCESS Model 1 analyses for each predictor. Type A behaviour showed a significant interaction with both organisational structure and climate ($\beta = -0.25$, $p < 0.01$) and relationship with people ($\beta = 0.2$, $p < 0.05$). Type A behaviour negatively moderated the relationship between organisational structure and climate and job satisfaction at low ($\beta = -0.28$, $p < 0.05$), medium ($\beta = -0.53$, $p < 0.001$) and high ($\beta = -0.78$, $p < 0.001$) levels (Figure 1).

Similarly, type A behaviour moderated the relationship between relationship with people and job satisfaction at low ($\beta = 0.31$, $p < 0.05$), medium ($\beta = 0.51$, $p < 0.001$) and high ($\beta = 0.7$, $p < 0.001$) levels (Figure 2).

However, locus of control showed a significant interaction with relationship with people ($\beta = 0.33$, $p < 0.01$). Indeed, it positively moderated the relationship between relationship with people and job satisfaction at medium ($\beta = 0.63$, $p < 0.001$) and high ($\beta = 0.96$, $p < 0.001$) levels (Figure 3).

Of the coping strategy dimensions, logic ($\beta = -0.41$, $p < 0.05$) and social support ($\beta = 0.4$, $p < 0.01$) moderated the relationship between relationship with people and job satisfaction. For logic, this occurred at low ($\beta = 0.87$, $p < 0.001$) and mean ($\beta = 0.45$, $p < 0.001$) levels (Figure 4), while for social support, this occurred at medium ($\beta = 0.45$, $p < 0.001$) and high ($\beta = 0.86$, $p < 0.001$) levels (Figure 5).

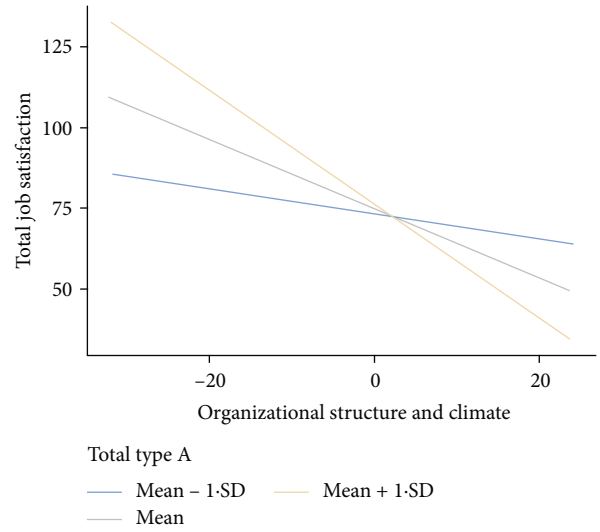

FIGURE 1: Type A behaviour negatively moderates the relationship between organisational structure and climate and job satisfaction at low (mean − 1 SD), medium (mean) and high (mean + 1 SD) levels.

Since the only significant source of pressure predicting mental health was relationships with other people ($\beta = 0.46$, $p < 0.001$), two separate PROCESS Model 1 analyses were conducted to test the moderating role of individual characteristics (type A behaviour and locus of control). However, these individual differences showed no moderation effect between work stressors and outcomes.

Among the coping strategies dimensions, social support ($\beta = 0.29$, $p < 0.001$) and logic ($\beta = -0.23$, $p < 0.05$) were significant moderators of the relationship between relationships with other people and mental health. Specifically, social support moderated the relationship between relationships with other people and mental health at medium ($\beta = 0.26$, $p < 0.001$) and high ($\beta = 0.55$, $p < 0.001$) levels (Figure 6), while logic did so at low ($\beta = 0.49$, $p < 0.001$) and medium ($\beta = 0.26$, $p < 0.001$) levels (Figure 7).

Finally, only factors intrinsic to the job emerged as a significant predictor of physical health ($\beta = 0.3$, $p < 0.01$). However, this relationship was not moderated by either personal characteristics or coping strategies.

4. Discussion

Workers in the transport sector are exposed to numerous work-related risks, both related to their roles and responsibilities and to the environmental characteristics of the workplace. These work-specific risks contribute to the occupational pathologies among drivers, ranging from musculoskeletal problems to psychological distress.

To examine which combination of sources of stress best predicts the physical and mental health of workers and to determine the roles of personal resources in modulating these effects, we conducted a correlational study on a sample of workers in the Italian transport sector by using a questionnaire.

Consistent with previous literature, our sample differed from the Italian normative sample in its responses to sources

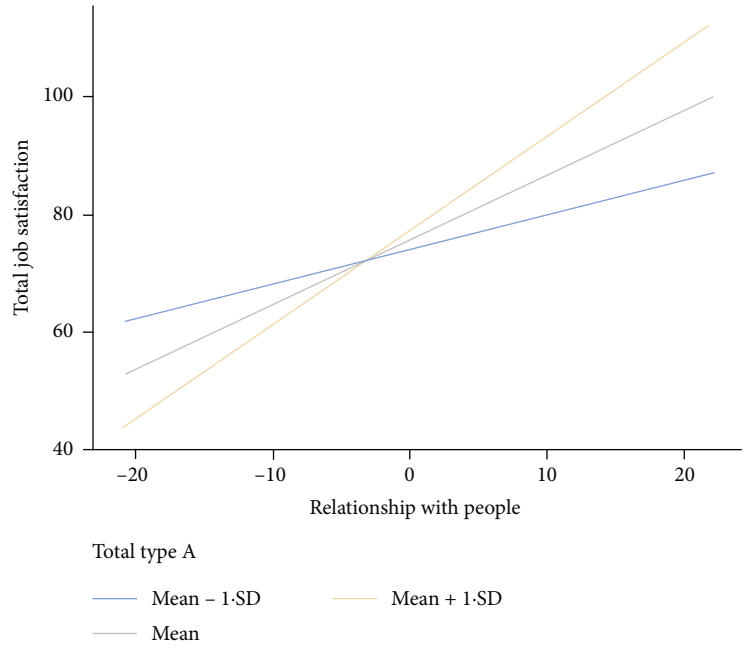

FIGURE 2: Type A behaviour positively moderates the relationship between relationship with people and job satisfaction at low (mean − 1 SD), medium (mean) and high (mean + 1 SD) levels.

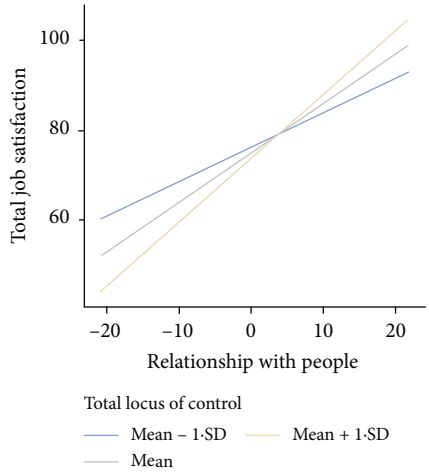

FIGURE 3: Locus of control positively moderates the relationship between relationship with people and job satisfaction at medium (mean) and high (mean + 1 SD) levels.

of work pressure; it also reported significantly lower scores on physical health, psychological health and several dimensions of job satisfaction [52, 53]. The results also confirmed previous findings that drivers exhibit higher levels of type A behaviour [13]. Among the workers in this sample, drivers had the lowest levels of satisfaction with the job itself and low perceptions of career development.

Among the sources of pressure, three factors appear most directly linked to the outcomes (in order of importance): relationships with other people (predicting both satisfaction and mental health), factors intrinsic to the job (predicting physical health) and organisational structure and climate (predicting job satisfaction). These results align with the reference literature, which emphasises that relationships with managers, colleagues and users, drivers' working conditions and the organisational climate are predictors of job satisfaction and physical and mental health. In fact, traffic congestion, time pressure, social isolation, aggression towards those who break the rules and night shifts that compromise the sleep–wake cycle contribute significantly to the onset of work-related stress [28, 29, 54]. If these conditions are prolonged over time, they can have negative effects on drivers' mental and physical well-being, reducing the quality of their working lives and increasing the risk of chronic physical and psychological problems.

The moderating role of individual differences was confirmed for type A behaviour (in the relationship between sources of pressure and job satisfaction) and for certain coping strategies, specifically logic and social support (in the relationship between sources of pressure and mental health). Type A behaviour appears to negatively affect the relationship between sources of stress and outcomes, while coping strategies have a positive impact on this relationship.

Overall, the empirical findings provide partial support for our hypotheses. Consistent with expectations, interpersonal stressors significantly predicted both job satisfaction and mental health, and job-intrinsic stressors were associated with poorer physical health. Likewise, organisational structure and climate showed the anticipated negative relationship with job satisfaction. Regarding moderators, type A behaviour amplified the detrimental impact of stressors, while coping strategies—particularly logic and social support—served as protective factors, in line with our predictions. By contrast, locus of control did not consistently moderate stressor–outcome associations, offering only limited support for our exploratory hypothesis. These results

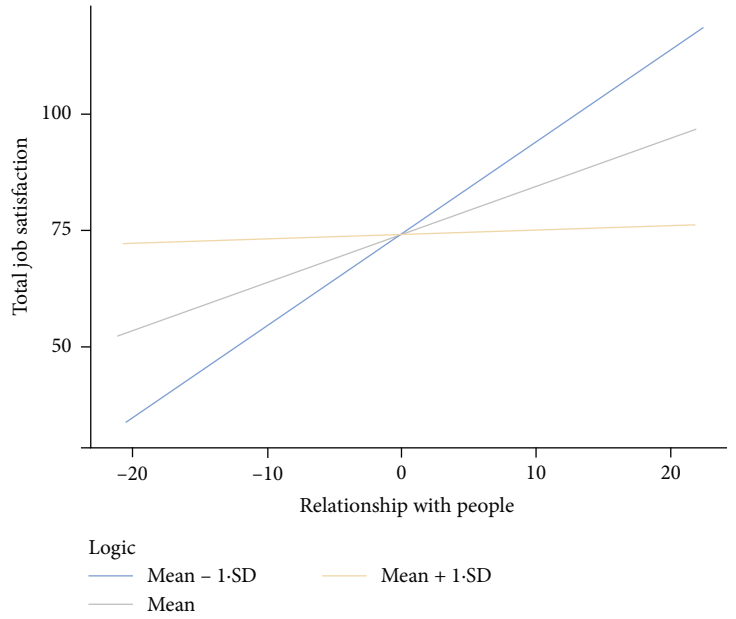

FIGURE 4: Logic positively moderates the relationship between relationship with people and job satisfaction at low (mean − 1 SD) and medium (mean) levels.

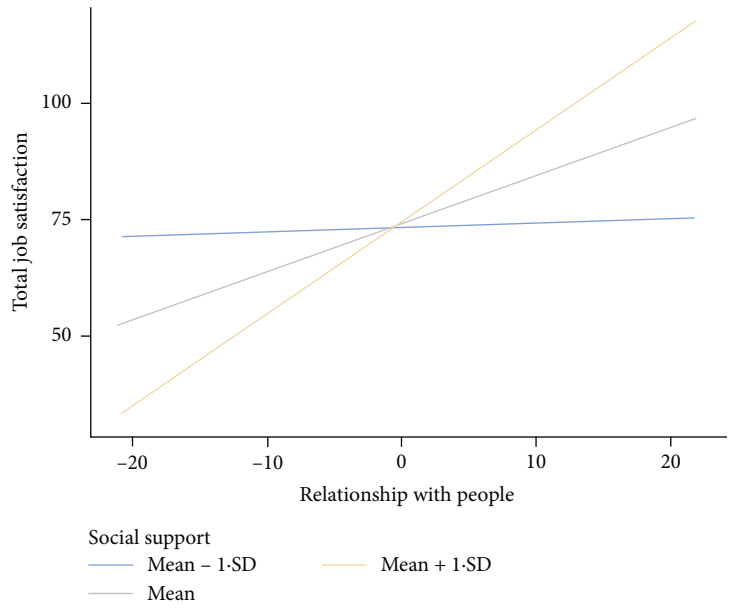

FIGURE 5: Social support positively moderates the relationship between relationship with people and job satisfaction at medium (mean) and high (mean + 1 SD) levels.

highlight both the robustness of our theoretical framework and the areas in which further investigation is needed.

4.1. Theoretical Implications. A theoretical analysis helps explain the psychological processes underlying these relationships, although our findings primarily confirmed the predictive value of stressors found in Cooper's model [12]. In particular, Cooper's focus on relational conflict as a fundamental psychosocial hazard is consistent with the finding that interpersonal connexions are the best indicators of both job satisfaction and mental health. According to Cooper's model, unfavourable social encounters at work are emotionally taxing. They can directly jeopardise a person's sense of support and belonging, both of which are essential for mental health and affective job engagement. However, stressors, such as job-related characteristics, that predict physical health have a greater effect through prolonged physiological activation. This aligns with Cooper's theory that these stressors cause chronic strain through somatic pathways (e.g., muscle tension and cardiovascular responses).

As shown by Cooper's model, structural ambiguity, poor communication and unclear organisational procedures can

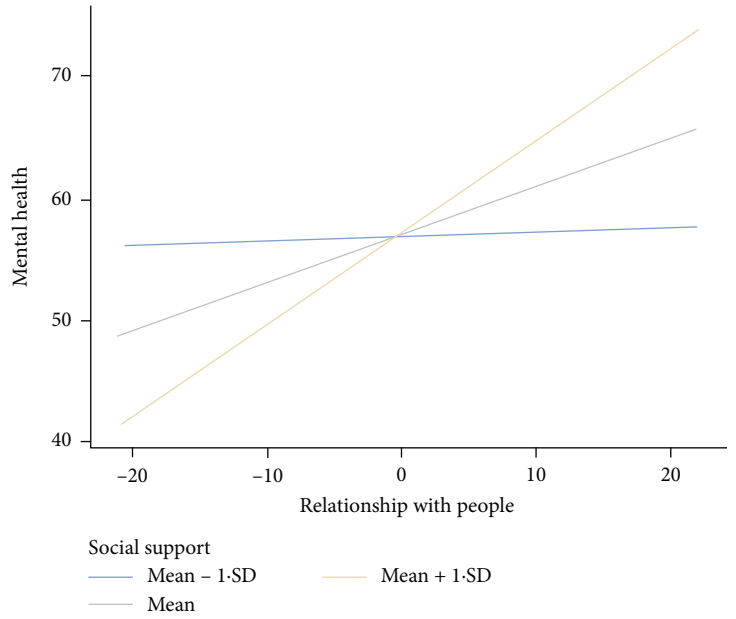

FIGURE 6: Social support moderates the relationship between relationships with people and mental health at medium (mean) and high (mean + 1 SD) levels.

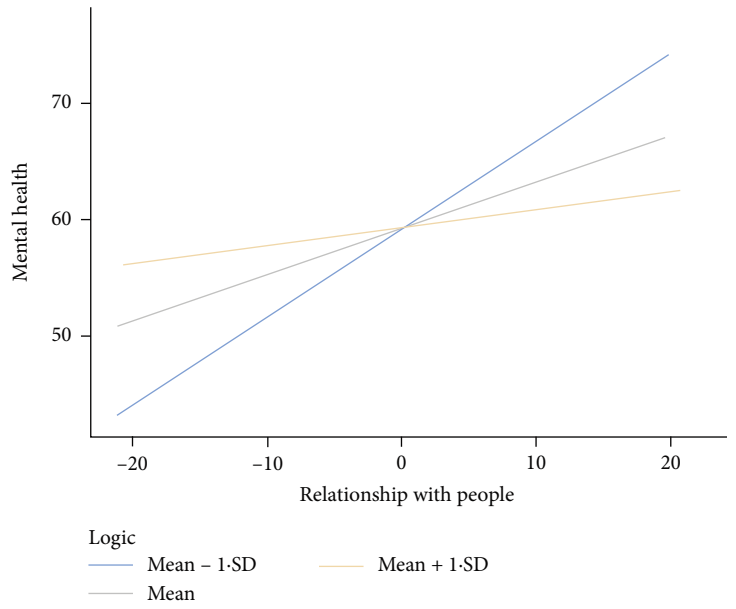

FIGURE 7: Logic moderates the relationship between relationships with people and mental health at low (mean − 1 SD) and medium (mean) levels.

lead to a sense of powerlessness. This is further demonstrated by the fact that organisational climate and structure also emerged as major determinants of job satisfaction. These pressures reduce workers' sense of control and self-efficacy, two factors closely related to job satisfaction.

Accordingly, these different stressors influence people in different ways, acting through separate physiological and cognitive–affective pathways [55]. According to Cooper's concept, interpersonal and organisational stressors are especially powerful because they violate three fundamental psychological needs: control, acknowledgement and belonging. Although they may be less visible initially, these difficulties have a cascading effect on mental health and happiness that is frequently more significant than just physical strain.

Cooper's theory that personal traits intensify the effects of stressors is supported by the moderating function of type A behaviour. Because they are competitive, hurried and hostile, type A personalities may find neutral interpersonal interactions frightening, which makes them more sensitive to relationship pressures. The buffering processes suggested

in Cooper's model, in which psychological resources lessen the assessment and impact of stressors on health and happiness outcomes, are also demonstrated by the beneficial moderating function of coping methods, such as reasoning and social support.

4.2. Practical Implications. From a practical perspective, this study provides further practical guidance. As in other sectors and job profiles, a source of stress for workers in the transport sector is linked to interaction with and responsibilities towards customers. Consequently, it seems essential to provide adequate training for managing relationships with customers in terms of communication and interventions, which can help defuse cases of aggression or better manage responsibilities towards customers (e.g., [56, 57]).

If coping strategies help modulate the relationship between sources of stress and outcomes, it is also important to prepare workers through training and procedures that make them feel more supported and prepared for challenging situations [58]. Such initiatives can enhance employees' confidence, improve their ability to handle stress, and ultimately contribute to better overall performance and well-being.

Our results point to a number of focused intervention techniques. First, type A behaviour should be taken into account during training and selection processes, as it negatively moderates the relationship between important stressors (e.g., interpersonal relationships and organisational structure) and job satisfaction. Individuals with high type A profiles, who might be more susceptible to stress-induced discontent or burnout, could be identified during hiring using psychometric screening methods. Second, since interpersonal relationships were found to be the strongest predictor of both job satisfaction and mental health, we suggest implementing scenario-based communication workshops that simulate challenging passenger interactions, conflict resolution and team cooperation. These customised training modules could help current employees reduce the reactive patterns associated with type A traits by improving emotional regulation, patience and cognitive reframing. Third, given the beneficial moderating effect of coping strategies, particularly logic and social support, we propose incorporating resilience-building interventions into organisational routines. Unlike standard customer service training, these should be tailored to address the unique social and physical stressors of public transportation environments (e.g., managing aggression in confined spaces and de-escalation during delays). Peer support programmes, organised reflection groups and the application of cognitive behavioural techniques to encourage the rational evaluation of stressors are a few examples of these. Crucially, coping interventions must be presented as a continuous professional development path integrated within the organisation's well-being policy rather than as stand-alone workshops [55]. Workers in the transportation industry, who are subjected to a variety of stressors, need to receive proper training to prevent negative health consequences and enhance overall service quality [59].

4.3. Limitations and Future Directions. The research results must be examined in consideration of the limitations of the study—first, in terms of the limited sample size, and second, in terms of the gender imbalance, which is in favour of males and could limit generalisability. Although the results are in line with previous findings in the literature (e.g., [23, 60, 61]), future studies should include more complex research designs and larger sample sizes. A further limitation concerns the sampling strategy. Participants were recruited through convenience sampling from a single public transportation company in Southern Italy. While this sector is characterised by well-documented psychosocial risks, reliance on a single organisational context inevitably reduces representativeness and constrains the external validity of the findings. Consequently, generalisation to other occupational groups or geographical settings should be made with caution.

It is also necessary to recognise a number of additional methodological restrictions. First, the study's cross-sectional design restricted the capacity to infer causality from the associations identified. Although there were statistically significant relationships between the stressors, moderators and outcomes, directionality and causality needed to be established using longitudinal or experimental approaches. Second, reliance on self-report measures may introduce common method bias and social desirability bias, particularly in sensitive areas, such as mental health, coping or job satisfaction. Future research could benefit from integrating objective data (e.g., absenteeism records and physiological stress indicators) or supervisor assessments. Third, the results may not be fully applicable to different organisations, areas or work environments because the sample was taken from a particular Southern Italian public transit provider. Disparities in work environments, management styles and organisational cultures may have an impact on how stress is perceived and how well people cope with it. Finally, how stress is experienced and reported may also be influenced by cultural and socioeconomic features specific to Southern Italy. These include public sector dynamics, economic instability and hierarchical organisational norms. When extrapolating the results to other national or international contexts, researchers should consider culturally distinctive factors. Overall, the theoretical predictions of Cooper's model appear largely confirmed, particularly for certain sources of pressure and specific personality variables [12].

Data Availability Statement

Because this study involves personal information, data are not publicly available but can be shared upon reasonable request to the corresponding author.

Conflicts of Interest

The authors declare no conflicts of interest.

Author Contributions

Giuseppe Santisi and Tiziana Ramaci worked on the original idea and carried out the detailed conceptualisation and investigation of this research. Giuseppe Santisi, Tiziana Ramaci and Massimiliano Barattucci finalised the methodology. Tiziana

Ramaci and Giuseppe Santisi collected the data. Massimiliano Barattucci, Giuseppe Alessio Platania and Simone Varrasi conducted the data analysis and wrote the results section. Massimiliano Barattucci, Tiziana Ramaci, Giuseppe Alessio Platania and Simone Varrasi carried out the project write-up, including the writing of the original draft. Giuseppe Santisi and Tiziana Ramaci conducted the visualisation and the final revision of the paper. Giuseppe Alessio Platania and Simone Varrasi contributed equally to this work and are co-first authors. Tiziana Ramaci and Giuseppe Santisi contributed equally to this work and are co-last authors.

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References

[1] T. Cox and A. Griffiths, "The Nature and Measurement of Work-Related Stress: Theory and Practice," in *Evaluation of Human Work*, 3rd ed. ed., ed. J. R. Wilson and N. Corlett, (CRC Press, 2005): 553–571.

[2] N. Dragano, J. Siegrist, S. T. Nyberg, et al., "Effort-Reward Imbalance at Work and Incident Coronary Heart Disease: A Multicohort Study of 90,164 Individuals," *Epidemiology* 28, no. 4 (2017): 619–626.

[3] K. Heikkilä, E. I. Fransson, S. T. Nyberg, et al., "Job Strain and Health-Related Lifestyle: Findings From an Individual-Participant Meta-Analysis of 118,000 Working Adults," *American Journal of Public Health* 103, no. 11 (2013): 2090–2097.

[4] A. H. Taylor and L. Dorn, "Stress, Fatigue, Health, and Risk of Road Traffic Accidents Among Professional Drivers: The Contribution of Physical Inactivity," *Annual Review of Public Health* 27, no. 1 (2006): 371–391.

[5] G. Platania, S. Varrasi, S. Castellano, et al., "Biological and Neuropsychological Markers of Cognitive Dysfunction in Unipolar vs Bipolar Depression: What Evidence Do we Have," *Life Span and Disability* 23, no. 2 (2020): 239–281.

[6] A. B. Bakker and E. Demerouti, "Job Demands-Resources Theory: Taking Stock and Looking Forward," *Journal of Occupational Health Psychology* 22, no. 3 (2017): 273–285.

[7] J. V. Rao and K. Chandraiah, "Occupational Stress, Mental Health and Coping Among Information Technology Professionals," *Indian Journal of Occupational and Environmental Medicine* 16, no. 1 (2012): 22–26.

[8] K. Cartwright, D. Lewis, C. Roberts, A. Bint, T. Nichols, and F. Warburton, "Workload and Stress in Consultant Medical Microbiologists and Virologists: A Questionnaire Survey," *Journal of Clinical Pathology* 55, no. 3 (2002): 200–205.

[9] A. Nguyen Ngoc, X. Le Thi Thanh, H. Le Thi, A. Vu Tuan, and T. Nguyen Van, "Occupational Stress Among Health Workers in a National Dermatology Hospital in Vietnam, 2018," *Frontiers in Psychiatry* 10 (2020): 950.

[10] S. Johnson, C. Cooper, S. Cartwright, I. Donald, P. Taylor, and C. Millet, "The Experience of Work-Related Stress Across Occupations," *Journal of Managerial Psychology* 20, no. 2 (2005): 178–187.

[11] S. Castellano, G. A. Platania, S. Varrasi, C. Pirrone, and S. Di Nuovo, "Assessment Tools for Risky Behaviors: Psychology and Health," *Health Psychology Research* 8, no. 2 (2020): 9235.

[12] C. L. Cooper, S. Sloan, and S. Williams, "*Occupational Stress Indicator* [Database Record]," *Work & Stress* (1988), APA PsycTests.

[13] M. L. Johns, R. Flin, and K. Mearns, "Bus Driver Well-Being: 50 Years of Research," *Transportation Research Part F: Traffic Psychology and Behaviour* 9, no. 2 (2006): 89–114.

[14] S. A. Useche, F. Alonso, B. Cendales, L. Montoro, and J. Llamazares, "Measuring Job Stress in Transportation Workers: Psychometric Properties, Convergent Validity and Reliability of the ERI and JCQ Among Professional Drivers," *BMC Public Health* 21, no. 1 (2021): 1594.

[15] G. Masi, G. Amprimo, C. Ferraris, and L. Priano, "Stress and Workload Assessment in Aviation—A Narrative Review," *Sensors* 23, no. 7 (2023): 3556.

[16] D. Bayrak and A. Muslu, "The Impact of Digitalization on the Maritime Sector: Analyzing Technostress Among Officer Seafarers," *Journal of International Maritime Safety, Environmental Affairs, and Shipping* 9, no. 2 (2025): 2478751.

[17] N. Hassanzadeh-Rangi, H. Jalilian, A. A. Farshad, and Y. Khosravi, "Correlation of Work Fatigue and Mental Workload in Train Drivers: A Cross-Sectional Study," *Journal of Research in Health Sciences* 23, no. 4 (2023): e00600.

[18] Z. Kazemi, A. Mazloumi, G. Nasl Saraji, and S. Barideh, "Fatigue and Workload in Short and Long-Haul Train Driving," *Work-A Journal of Prevention Assessment & Rehabilitation* 54, no. 2 (2016): 425–433.

[19] S. A. Useche, B. Cendales, L. Montoro, and C. Esteban, "Work Stress and Health Problems of Professional Drivers: A Hazardous Formula for Their Safety Outcomes," *PeerJ* 6 (2018): e6249.

[20] A. Hege, M. Perko, A. Johnson, C. H. Yu, S. Sönmez, and Y. Apostolopoulos, "Surveying the Impact of Work Hours and Schedules on Commercial Motor Vehicle Driver Sleep," *Safety and Health at Work* 6, no. 2 (2015): 104–113.

[21] R. Karasek, "Demand/Control Model: A Social, Emotional, and Physiological Approach to Stress Risk and Active Behaviour Development," in *Encyclopaedia of Occupational Health and Safety*, ed. J. M. Stellman, (International Labour Office, 1998): 34.6–34.14.

[22] L. Montoro, S. Useche, F. Alonso, and B. Cendales, "Work Environment, Stress, and Driving Anger: A Structural Equation Model for Predicting Traffic Sanctions of Public Transport Drivers," *International Journal of Environmental Research and Public Health* 15, no. 3 (2018): 497.

[23] E. Habibi, S. Poorabdian, and M. Shakerian, "Job Strain (Demands and Control Model) as a Predictor of Cardiovascular Risk Factors Among Petrochemical Personnel," *Journal of Education and Health Promotion* 4, no. 1 (2015): 16.

[24] S. A. Useche, V. Gómez, B. Cendales, and F. Alonso, "Working Conditions, Job Strain, and Traffic Safety Among Three Groups of Public Transport Drivers," *Safety and Health at Work* 9, no. 4 (2018): 454–461.

[25] L. Joseph, L. Vasanthan, M. Standen, et al., "Causal Relationship Between the Risk Factors and Work-Related Musculoskeletal Disorders Among Professional Drivers: A Systematic Review," *Human Factors: The Journal of the Human Factors and Ergonomics Society* 65, no. 1 (2023): 62–85.

[26] A. M. Crizzle, P. L. Bigelow, D. L. Adams, S. E. Gooderham, A. M. Myers, and P. Thiffault, "Health and Wellness of Long-Haul Truck and Bus Drivers: A Systematic Literature Review and Directions for Future Research," *Journal of Transport and Health* 7 (2017): 90–109.

[27] H. Golbabaei Pasandi, S. Mahdavi, S. Solmaz Talebi, S. Jahanfar, M. Shayestefar, and M. Hossein Ebrahimi, "Investigating the Prevalence of Hearing Loss and Its Related Factors in Professional Drivers in Shahroud City, Iran," *International Journal of Occupational Safety and Ergonomics: JOSE* 28, no. 4 (2022): 1994–1999.

[28] V. Gómez-Ortiz, B. Cendales, S. Useche, and J. P. Bocarejo, "Relationships of Working Conditions, Health Problems and Vehicle Accidents in Bus Rapid Transit (BRT) Drivers," *American Journal of Industrial Medicine* 61, no. 4 (2018): 336–343.

[29] P. Tàpia-Caballero, M. J. Serrano-Fernández, M. Boada-Cuerva, L. Araya-Castillo, and J. Boada-Grau, "Variables That Predict Burnout in Professional Drivers," *International Journal of Occupational Safety and Ergonomics* 28, no. 3 (2022): 1756–1765.

[30] S. Useche, B. Cendales, and V. Gómez, "Work Stress, Fatigue and Risk Behaviours at the Wheel: Data to Assess the Association Between Psychosocial Work Factors and Risky Driving on Bus Rapid Transit Drivers," *Data in Brief* 15 (2017): 335–339.

[31] C.-F. Chen and J. Sih, "How Job Stressors and Economic Stressors Impact Public Transport Drivers' Performance and Well-Being Under the Health Risk of the COVID-19 Pandemic," *Journal of Safety Research* 88 (2024): 354–365.

[32] J. A. Santos and J. L. Lu, "Occupational Safety Conditions of Bus Drivers in Metro Manila, the Philippines," *International Journal of Occupational Safety and Ergonomics: JOSE* 22, no. 4 (2016): 508–513.

[33] J. Dow, M. Gaudet, and É. Turmel, "Crash Rates of Quebec Drivers With Medical Conditions," *Annals of Advances in Automotive Medicine* 57 (2013): 57–66.

[34] C. F. Chen and Y. C. Hsu, "Taking a Closer Look at Bus Driver Emotional Exhaustion and Well-Being: Evidence from Taiwanese Urban Bus Drivers," *Safety and Health at Work* 11, no. 3 (2020): 353–360.

[35] A. Tavakoli, N. K. Lai, V. Balali, and A. Heydarian, "How are Drivers' Stress Levels and Emotions Associated With the Driving Context? A Naturalistic Study," *Journal of Transport & Health* (2022), arXiv preprint arXiv: 2205.06116.

[36] M. A. Machin and P. N. Hoare, "The Role of Workload and Driver Coping Styles in Predicting Bus Drivers' Need for Recovery, Positive and Negative Affect, and Physical Symptoms," *Anxiety, Stress & Coping* 21, no. 4 (2008): 359–375.

[37] G. Aronsson and A. Rissler, "Psychophysiological Stress Reactions in Female and Male Urban Bus Drivers," *Journal of Occupational Health Psychology* 3, no. 2 (1998): 122–129.

[38] P. Sarti, C. Colliva, S. Varrasi, et al., "A Network Study to Differentiate Suicide Attempt Risk Profiles in Male and Female Patients With Major Depressive Disorder," *Clinical Psychology & Psychotherapy* 31, no. 1 (2024): e2924.

[39] S. Fox and P. E. Spector, "Emotions in the Workplace: The Neglected Side of Organizational Life Introduction," *Human Resource Management Review* 12 (2002): 1–5.

[40] J. Li, W. Yang, Y. Cheng, J. Siegrist, and S. I. Cho, "Effort-Reward Imbalance at Work and Job Dissatisfaction in Chinese Healthcare Workers: A Validation Study," *International Archives of Occupational and Environmental Health* 78, no. 3 (2005): 198–204.

[41] M. Bergomi, A. Modenese, E. Ferretti, et al., "*Work*-r-Related Stress and Role of Personality in a Sample of Italian Bus Drivers," *Work-A Journal of Prevention Assessment & Rehabilitation* 57, no. 3 (2017): 433–440.

[42] M. V. Manai, C. Colaprico, E. Ricci, et al., "Are Work-Related Stress and Positivity Associated With Health-Related Quality of Life? Results of an Observational Study in a Transport Company in Italy," *Journal of Public Health* (2024): 1–8.

[43] D. C. Ganster and C. C. Rosen, "Work Stress and Employee Health: A Multidisciplinary Review," *Journal of Management* 39, no. 5 (2013): 1085–1122.

[44] S. Sonnentag and M. Frese, "Stress in Organizations," in *Handbook of Psychology: Industrial and Organizational Psychology*, 2nd ed., ed. N. W. Schmitt and S. Highhouse, 12, (Wiley, 2013): 560–592.

[45] T. A. Judge, H. M. Weiss, J. D. Kammeyer-Mueller, and C. L. Hulin, "Job Attitudes, Job Satisfaction, and Job Affect: A Century of Continuity and of Change," *Journal of Applied Psychology* 102, no. 3 (2017): 356–374.

[46] P. E. Spector and S. M. Jex, "Development of Four Self-Report Measures of Job Stressors and Strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory," *Journal of Occupational Health Psychology* 3, no. 4 (1998): 356–367.

[47] C. S. Carver, M. F. Scheier, and J. K. Weintraub, "Assessing Coping Strategies: A Theoretically Based Approach," *Journal of Personality and Social Psychology* 56, no. 2 (1989): 267–283.

[48] T. W. H. Ng, K. L. Sorensen, and L. T. Eby, "Locus of Control at Work: A Meta-Analysis," *Journal of Organizational Behavior* 27, no. 8 (2006): 1057–1087.

[49] J. Cohen, *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed ed. (Lawrence Erlbaum Associates, 1988).

[50] S. Sirigatti and C. Stefanile, *OSI –Occupational Stress Indicator: Adattamento Italiano* (Organizzazioni Speciali, 2002).

[51] P. M. Podsakoff, S. B. MacKenzie, J. Y. Lee, and N. P. Podsakoff, "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies," *Journal of Applied Psychology* 88, no. 5 (2003): 879–903.

[52] J. T. Shope, D. J. Begg, and R. L. McLean, "Older Former Drivers' Health, Activity, and Transport in New Zealand," *Journal of Transport & Health* 14, no. 3 (2019): 1–9.

[53] E. S. Williams, L. B. Manwell, T. R. Konrad, and M. Linzer, "The Relationship of Organizational Culture, Stress, Satisfaction, and Burnout With Physician-Reported Error and Suboptimal Patient Care: Results From the MEMO Study," *Health Care Management Review* 32, no. 3 (2007): 203–212.

[54] G. Dorantes-Argandar, C. R. Barrales-Díaz, E. S. Ferrero-Pastor, et al., "Aggressive Driving, Rule-Breaking, and Driver Stress in Spanish-Speaking Countries," *Transportation Research Interdisciplinary Perspectives* 21 (2023): 100907.

[55] M. Barattucci, T. Ramaci, S. Matera, F. Vella, V. Gallina, and E. Vitale, "Differences in Risk Perception Between the Construction and Agriculture Sectors: An Exploratory Study With a Focus on Carcinogenic Risk," *La Medicina del Lavoro* 116, no. 3 (2025): 16796.

[56] M. S. Ahmad, M. Barattucci, T. Ramayah, T. Ramaci, and N. Khalid, "Organizational Support and Perceived Environment

Impact on Quality of Care and Job Satisfaction: A Study With Pakistani Nurses," *International Journal of Workplace Health Management* 15, no. 6 (2022): 677–693.

[57] C. B. Musselwhite, "A Research Agenda on Transport and Health and Public Buses: More Research on the Buses Please!," *Journal of Transport & Health* 24 (2022): 101355.

[58] C. Kelly, M. Barattucci, and S. M. Ahmad, "Job Satisfaction as a Mediator Between Structural Empowerment and Intent-to-Leave: A Study of Critical Care Nurses," *Intensive and Critical Care Nursing* 70 (2022): 103194.

[59] W. S. Boyce, "Does Truck Driver Health and Wellness Deserve More Attention?" *Journal of Transport & Health* 3, no. 1 (2016): 124–128.

[60] D. Cafagna and M. Barattucci, "Percezione dei rischi e personalità: una ricerca nel settore dei trasporti [Risk Perception and Personality: A Study in the Transportation Sector]," *Giornale Italiano di Medicina del Lavoro ed Ergonomia* 41, no. 3 (2019): 211–220.

[61] S. A. Useche, V. G. Ortiz, and B. E. Cendales, "Stress-Related Psychosocial Factors at Work, Fatigue, and Risky Driving Behavior in Bus Rapid Transport (BRT) Drivers," *Accident Analysis and Prevention* 104 (2017): 106–114.