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EFEITO DO BURNOUT E DO ESTRESSE NA PRODUTIVIDADE DOS GERENTES DE UMA MEGACIDADE

EFFECT OF BURNOUT AND STRESS ON THE PRODUCTIVITY OF MANAGERS OF A MEGACITY

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Objetivo do estudo
O objetivo foi identificar os efeitos do deslocamento do viajante urbano habitual sobre a produtividade dos gestores de empresas de uma megacidade. Investigamos o estresse do viajante habitual em fadiga e burnout, para avaliar seu efeito subsequente na produtividade do gerente.

Relevância/originalidade
O estresse do viajante urbano habitual pode ser experimentado não apenas ao dirigir o veículo, mas também em outras atividades. Assim, os estados debilitantes de saúde podem levar a? perda de produtividade de funcionários e gestores.

Metodologia/abordagem
Realizamos uma pesquisa quantitativa com gestores que atuam na cidade de Sa?o Paulo. Para coletar os dados utilizamos três escalas e recebemos 514 respostas. Utilizamos o software Smart-PLS para organização e tratamento dos dados por meio da modelagem de Equac?o?es Estruturais.

Principais resultados
Nossos resultados indicam que o estresse dos gerentes no deslocamento tem um efeito importante na produtividade do trabalho. O estresse dos gerentes em seu deslocamento influencia a produtividade devido a? influência do burnout e fadiga desses gerentes.

Contribuições teóricas/metodológicas
O estudo contribui para os estudos em cidades inteligentes sustentáveis ao apresentar o efeito do estresse do deslocamento nos ambientes organizacionais. Também contribui para a compreensão do efeito do deslocamento na produtividade do trabalho, aumentando o burnout.

Contribuições sociais/para a gestão
Nosso trabalho apresenta uma fundamentac?a?o sobre a imobilidade urbana, que tem afetado os trabalhadores que utilizam o transporte pu?blico e privado. Esses trabalhadores têm sua produtividade reduzida diante dos problemas da insustentabilidade urbana. Gestores de pessoas precisam se preocupar com esse fato.

Palavras-chave: Burnout, Estresse, Mobilidade urbana, Produtividade do gerente, Megacidade

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Study purpose
To identify the effects of commuting by the regular urban traveler on the productivity of business managers in a megacity. We investigated commuter stress on fatigue and burnout to assess its subsequent effect on manager productivity.

Relevance / originality
The stress of the usual urban traveler can be experienced not only when driving the vehicle, but also in other activities. Thus, the weakening states of health can lead to the loss of productivity of employees and managers.

Methodology / approach
We carried out a quantitative survey with managers who work in the city of São Paulo. We collected 514 responses using three scales. We chose the Smart-PLS software for organizing and processing data through Structural Equation modeling.

Main results
Our results indicate that managers' commuting stress has an important effect on work productivity. The stress of managers in their displacement influences productivity due to the influence of burnout and fatigue of these managers.

Theoretical / methodological contributions
The study contributes to studies in sustainable smart cities by presenting the effect of commuting stress on organizational environments. It also contributes to understanding the effect of commuting on work productivity, increasing burnout.

Social / management contributions
Our work presents a foundation on urban immobility, which has affected workers who use public and private transport. These workers have their productivity reduced due to the problems of urban unsustainability. People managers need to be concerned about this fact.

Keywords: Burnout, Stress, Urban mobility, Manager productivity, Megacity

EFFECT OF BURNOUT AND STRESS ON THE PRODUCTIVITY OF MANAGERS OF A MEGACITY

1. Introduction

The continuous overload of responsibilities can result in stress, fatigue, and burnout, reducing managers' energy, concentration, and job satisfaction (Ceravolo & Raines, 2019). They can also cause poor relationships with clients and colleagues, negative attitudes toward the profession, or unwillingness to carry out work-related responsibilities (Semerci et al., 2021). It is a frequent topic of discussion and study because the feelings of fatigue and disengagement that are descriptive of burnout resonate with many professionals (Siebert, 2005).

Burnout has been researched since the 1970s, it is considered a multifaceted phenomenon, involving emotional, cognitive, and physical dimensions that can be avoided by work organization, social support, and balance between professional and personal life (Maslach & Pines, 1977; Pines, A., & Maslach, 1978; Pines & Aronson, 1981; Pines & Maslach, 1980; Shirom; 1989; Maslach, 1993; Leiter, 1996). It is a psychological response to stress and can manifest itself as a combination of extreme fatigue and loss of vision and passion for work and personal life. This response is characterized by an exhausting feeling of physical and mental exhaustion, which goes beyond simple tiredness (Maslach, Schaufeli & Leiter, 2001).

Failing to observe the strategies, causes, and consequences related to burnout, only thinking about the individual inserted within the organizational environment, we directed our research toward organizational, occupational, and individual bias (Simha, Elloy & Huang, 2014). We relate this new perspective under organizational bias to the construct of managers' productivity, occupational bias to fatigue, and individual bias to the stress of commuting to work. This is practically justified, as 54% of the world's population lives in urban areas. This proportion may increase to 66% by the year 2050 (United Nations, 2016).

United Nations predicts that the world's urban population will exceed six billion people by 2045. In 1990, there were ten megacities with 10 million inhabitants or more around the world. In 2014, there were already 28 megacities worldwide, with a total population of 453 million people and 12% of the world's urban residents. There we 16 of these megacities in Asia, four in Latin America, three in Africa, three in Europe, and two in North America. By 2030, there may be 41 megacities on the planet, with 10 million inhabitants or more (United Nations, 2016). In Brazil, there are two megacities: the metropolitan region of São Paulo, with approximately 21 million inhabitants, and the metropolitan area of Rio de Janeiro, with about 13 million inhabitants (IBGE, 2019; United Nations, 2016).

There are many problems related to accelerated urbanization not accompanied by the availability of infrastructure. For example, public transport in Brazilian metropolitan regions is considered deficient and unattractive (Pereira & Schwanen, 2013). Transportation models were traditionally developed for car traffic. The intensive use of individual motorized means of transport (cars and motorbikes) causes problems with urban mobility (Rolnik, 2017; Saldiva, 2018). Additionally, the expansion of transport infrastructure (such as roads, viaducts, roundabouts, etc.) does not keep pace with the growth in the number of vehicles in cities (Tsuda, 2019).

Contemporary lifestyles and commercial practices have depended on urban mobility (Bertolini, 2012). Citizens spend a considerable portion of their days traveling between home and work (Stokols et al., 1978). Along the way, they are exposed to disputes over time and access to urban infrastructure and permanent, collective, and conflictual negotiation for space on the roads. However, high amounts of travel can reflect the constraints of opportunities, the depletion of resources, losses to personal health, and performance at work (Novaco & Gonzalez,

2009). Traffic congestion in cities is attributed to effects such as stress, anxiety, fatigue, and aggressive behavior of people (Stokols et al., 1978; Fallahi et al., 2016).

These factors may be interacting or providing cumulative effects with stress and work pressure for managers, increasing burnout. This situation can lead managers who use the car as a means of transport daily to chronic exposure to stress, which, in turn, can cause burnout (Maslach & Leiter, 2016; Sherf, Parke & Isaakyan, 2021). Despite the recognition that personal stress influences fatigue and burnout and, consequently, the quality of work (Cross, Taylor & Zehner, 2018), little is known about the effect of personal stressors on the result of work (Peasley et al., 2020). Understanding the effect of commuting, which influences the stress of the usual urban traveler, seems to be important considering that the stress and fatigue accumulated during the trip restrict the time an individual is willing to spend in mobility in one day (Gallotti, Bazzani & Rambaldi, 2015).

The stress of the usual urban traveler can be experienced not only when driving the vehicle, but also in other activities. Thus, the weakening states of health generated by the mentioned factors can lead to the loss of productivity of employees and managers (Darrat, Atinc, & Babin, 2016).

The research question that guides this work is: What is the effect of the stress generated by commuting on managers' productivity? The objective is to identify the commuting effects of the usual urban traveler on the productivity of managers of companies of a megacity. We investigated the stress of the usual traveler in fatigue and burnout, to assess its subsequent effect on the manager's productivity. We carried out the study in a city that could be representative of megacities. The municipality of São Paulo is a megacity, with more than 12 million inhabitants (IBGE, 2019). It is the fifth city most impacted by congestion globally (INRIX Global Traffic Scorecard, 2019). In 2018 it had a fleet of 8,861,208 motor vehicles, of which 6,201,101 cars (DETRAN / SP, 2018), representing one car in circulation for every two people.

We sent a survey via Linkedin to managers who work in the city of São Paulo. There were 514 respondents with complete answers. We used three scales: the stress scale of the usual urban traveler (Evans, Wener & Phillips, 2002); the fatigue scale (Chalderet al., 1993) emotional exhaustion of the burnout scale (Maslach, Jackson, & Leiter, 1996); work completed from the Stanford - SP 6 presenteeism scale (Koopman et al., 2002). The results indicate that the urban traveler's stress negatively influences the completed work of managers, as it affects fatigue and the emotional exhaustion of burnout.

2. Burnout: the psychological syndrome of exhaustion and the modern epidemic

The feeling of exhaustion and fatigue, known as Burnout, was first mentioned by Freudenberger (1974). It is a syndrome characterized by emotional exhaustion, depersonalization, and reduced feelings of personal accomplishment, explored in physical signs and behavioral indicators (Freudenberger, 1974; Maslach & Jackson, 1981). It is a response to chronic work and non-work stressors (Leiter & Maslach, 2003) and tends to have a negative impact on health because it requires the body to respond physically and psychologically daily (Day & Livingstone, 2001; Yang et al., 2017).

The theme has been researched since the 1970s and in seminal articles the authors sought to describe and suggest strategies to avoid burnout and the consequences of burnout for the organization. These strategies aim to inhibit the causes of exhaustion that were understood as a lack of resources and support, high work demands, unrealistic expectations, and interpersonal conflicts, which also compromised the well-being of professionals (Freudenberger, 1975). But since the 1970s, burnout has been considered a multifaceted phenomenon, involving emotional,

cognitive, and physical dimensions that can be avoided by work organization, social support, and balance between professional and personal life (Maslach & Pines, 1977).

High levels of occupational stress, intense emotional demands, and lack of personal and organizational resources to deal with these demands were among the main causes of burnout (Pines & Maslach, 1978) and both organizational changes and individual interventions were strategies applied in organizations and the measures adopted resulted in a significant decrease in burnout among individuals and a general improvement in the work environment (Pines & Maslach, 1980).

However, what we can observe is that even considering emotional and individual factors, research focused on the analysis of organizational factors that could contribute to burnout, such as lack of control over work, lack of rewards and recognition, excessive work demands, ambiguity of work roles, and conflicts. Strategies to combat burnout focused on the importance of organizational policies and practices that promote a healthy, balanced, and supportive work environment, including actions such as reducing excessive workloads, establishing adequate resources and support, and promoting stress management strategies (Shirom, 1989).

It was in the 1990s that the importance of the emotional demands of work as a key factor in the development of burnout became evident to visualize the demands of dealing with intense and negative emotions, together with the lack of personal and organizational resources to deal with them. with these demands (Maslach, 1993). Therefore, the understanding of burnout is built as a development process over time, as a dynamic process that involves complex interactions between individuals and their work environment, that is, personal and organizational factors interacting and influencing the development of burnout (Leiter, 1996).

Yet research on burnout has continued to focus on the impact of job characteristics such as ambiguity, conflict, and overload, as well as the extent of employee contact with customers as part of their responsibilities (Maslach et al., 2001; Shirom, 2003) and job characteristics. personal (Alarcon, Eschleman & Bowling, 2009) variables that have been examined in terms of their predictive powers about burnout.

An emerging trend in the literature has been the investigation of the interaction of environmental and personal factors in the burnout process, considering the susceptibility to emotional stimuli as an important moderator between work environment factors in addition to the status of burnout as a psychiatric disorder (Halbesleben & Buckley, 2004). Despite common underlying stressors, individuals react differently to burnout because of the attributes that facilitate their adjustment to the environment (Maslach & Leiter, 1997).

Currently, burnout is considered a modern epidemic and is related to stress occurring whenever individuals perceive a threat to what they value (resources). The initial threat is seen as a stressor, but when there is a continuous loss or threat of resources, after a large investment, it leads to depletion (Hobfoll, 2001). This definition helps us understand beyond the notion of stress to help understand how chronic stress evolves into burnout (Halbesleben & Buckley, 2004). In the case of this research, we can consider the endangered resource as the commuting time of the regular urban traveler.

Stress will lead to burnout as environmental and personality factors are moderating this relationship. Therefore, working hours alone are not necessarily a direct cause of burnout, the causes for the development of burnout depend on environmental factors and individual differences (Barnett, Gareis & Brennan, 1999; Halbesleben & Buckley, 2004). In the organizational environment, burnout reduces productivity and effectiveness (Maslach, Schaufeli, & Leiter, 2001), but organizational support can be an effective means of relieving stress or burnout (Lingard & Francis, 2006; Leung et al., 2008; Bobbio et al., 2012; Gillet et al., 2016).

We, therefore, understand that a more comprehensive look at the strategies causes and consequences related to burnout is necessary. This new vision may be focused on organizational, occupational, and individual bias (Simha, Elloy & Huang, 2014). We relate this new perspective under organizational bias to the construct of managers' productivity, occupational bias, fatigue, and individual commuting stress.

2.1 Burnout and traffic stressors: Conceptual model and hypotheses

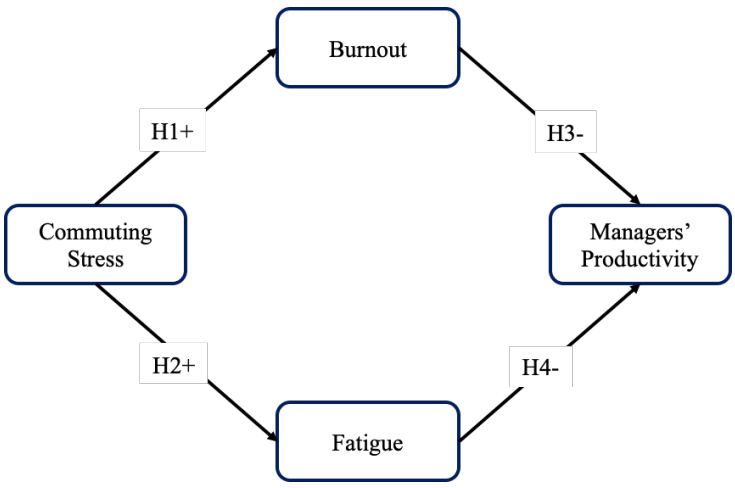
Although several studies have investigated the antecedents of burnout in the past, very few, if any, studies have investigated the link between burnout, urban commuter stress from the effect of commuting, fatigue, and managers' productivity. In the present study we connect and link four distinct but related concepts. We investigated the link between commuting-effect urban traveler stress, manager burnout and productivity, commuting-effect urban commuter stress, manager fatigue and productivity.

Stressors from the traffic can include a variety of travel conditions (Novaco & Gonzalez, 2009): congestion, air pollution, long commutes, interpersonal conflicts, deficient signaling, noise, etc. The English term commute involves displacement on a given path (Collins, 2018). Commuters (habitual urban traveler) are drivers, cyclists, pedestrians, hitchhikers, public or private transport passengers, among other users of urban mobility (Gatersleben & Uzzell, 2007). The stress of the usual urban traveler encompasses the stress of the driver and the stress of the passenger on a bus, taxi, or other means of transport (Gatersleben & Uzzell, 2007; Gudden, 2014).

Traffic stressors and mental states (Ghandour et al., 2021) influence and can affect driver behavior models (Mecheva, Furnadzhiev & Kakanakov, 2022). They encompass a variety of characteristics, including mood, fatigue, and response to distracting conditions. Furthermore, these models represent the relationships between external factors and the way drivers perform their tasks, make decisions, interact or are distracted (Mecheva, Furnadzhiev & Kakanakov, 2022).

Figure 1 presents the conceptual model that guided this study. On the left side of the model, we show the stress of the urban traveler by the effect of commuting. In the model, this effect impacts both emotional exhaustion, which is related to burnout and fatigue. Both, according to the model, affect the productivity of managers.

Figure 1.
The impact of Usual Urban Traveler Stress of the Commuter Urban Commuting on Executive Productivity



We consider that burnout is a form of fatigue that manifests itself through physical, mental, and emotional exhaustion, along with a feeling of failure or lack of accomplishment (Schaufeli & Taris, 2005). A response to chronic emotional strain that arises from constantly dealing with other individuals is known as persistent emotional exhaustion (Maslach et al., 1996).

Burnout is "a form of occupational fatigue characterized by both exhaustion and failure" (Schaufeli & Taris, 2005, p. 259). Its original definition is "a response to a chronic emotional tension of dealing extensively with other human beings" (Maslach et al., 1996). In general, the survey considers burnout mainly related to stress in the workplace (Cole, Walter, Bedeian & O'Boyle et al., 2012). Its main symptom is emotional exhaustion (Maslach et al., 1996). There is evidence that it is related to physical and mental problems (Maslach & Leiter, 2016).

However, burnout is a prolonged emotional response to stress that can occur regardless of occupation. It is the result of exhaustion and, many times, presupposes the interaction between the worker and the work environment. Exhaustion or fatigue often leads to burnout when a person lacks the resources to deal with the growing gap between job demands and individual capacity. Socioeconomic determinants can also impact burnout, especially when the occupation is poorly paid and there is a high demand for work due to assuming the role of a substitute in a higher position within the system, which can result in accelerated burnout (Vinnikov et al. al., 2019).

Personal stress can aggravate burnout (Maslach & Leiter, 2016). Several sources of personal stressors can exacerbate burnout (Peasley et al., 2020; Goh, Pfeffer & Zenios, 2019; Pfeffer, 2018).). Among these, is the stress of the usual urban traveler (Evans et al., 2002; Morris & Hirsch, 2016). The stress-induced driving of cars in heavy traffic, as in other stressful situations, can influence burnout (Hennessy, 2008; Dewa, Loong, Bonato, Thanh & Jacobset al., 2014).

According to Hennessy and Wiesenthal (1997), driving in highly congested traffic conditions results in a higher state of stress. Aggressive behaviors are often reported. People repeatedly exposed to uncontrollable or undesirable driving conditions may experience stress when driving or using another means of transport as a passenger (Hennessy & Wiesenthal, 1997; Pero & Stefanelli, 2015; Emo et al., 2016; Fallahi et al., 2016). The deterioration in urban living conditions, health, employment, and family and work relationships can contribute to raising the general stress levels of the usual urban traveler (Stokols et al., 1978; Castells, 2007; Saldiva, 2018). Frequent exposure to interaction and accumulation of stressful effects, such as the stress of the usual urban traveler and work, aggravate the emotional exhaustion of burnout (Hennessy, 2008; Shanafelt & Noseworthy, 2017).

H1: The stress of the usual urban traveler positively influences the manager's emotional exhaustion related to burnout.

Emotional exhaustion also occurs due to fatigue (Adams, Boscarino & Figley, 2006; Jyoti & Rani, 2019). Driving in heavy or prolonged traffic conditions can lead to fatigue due to the need to maintain concentration for safe traffic and the burden imposed by processing negative stress cognitions (Desmond & Matthews, 2009).

H2: Stress of the usual urban traveler has a positive influence on traveler fatigue.

Given the recent context, in which manual and knowledge workers go through pressures, transformations and instabilities in the work environment (Schuster, Dias &

Battistella, 2015; Amyx & Jarrel, 2016; Ferreira, da Costa Ferreira, Cooper, & Oliveiraet al., 2019), which ends up causing burnout (physical and emotional exhaustion). The effects from commuting would increase the work-related stress. This process causes losses to both workers and companies. The losses are (Amyx & Jarrel, 2016, Darrat et al., 2016): productivity losses, insubordination with the boss, dysfunctional behaviors (cynicism), among others (Han et al., 2019).

H3: Burnout has a negative influence on the manager's productivity.

Insomnia or difficulties to sleep well, lack of time for rest and leisure, long hours of work, among other reasons, have caused the fatigue of people at work (Gabriel & Aguinis, forthcoming2022), and would be increased to exposure to traffic during commuting. Fatigue, in turn, leads to losses in productivity, such as individual errors, accident costs, difficulties in decision making and memory, among others (Baer, Dhensa-Kahlon, R., Colquitt, Rodell, Outlaw & Longet al., 2015), compromising the managerial performance of managers (Jena & Sahoo, 2014).

H4: Fatigue has a negative influence on managers' productivity.

3. Method

We collected the data using an electronic questionnaire (Survey Monkey), whose access invitation was sent by email and messages from Linkedin to managers in São Paulo, from January to March 2019.

The target audience was composed of managers who travel home-work-home by car in the city of São Paulo. Studies have indicated an increase in the commuting time from home to work / home-study year by year in Brazilian urban regions (Haddad & Vieira, 2015).

The specific choice of managers who drive automobiles is because drivers have a higher intensity of stress than other users of urban traffic, such as pedestrians, cyclists, and public transport passengers (Evans et al., 2002). We chose the city of São Paulo because it is a megacity, with about 12 million inhabitants and a metropolitan region with 22 million inhabitants (IBGE, 2019). We sent 3104 messages and posts to groups of Linkedin executives, with 514 valid responses.

Of the respondents, 33.27% travel more than 20 km between home and work, 15.18% live close to work (distance less than 5 km), and the rest cover distances between 5 to 20 km. On the way to work, almost 30% spend less than 30 minutes commuting, 36% between 30 and 60 minutes, nearly 30% between 60 and 120 minutes, and 4% of respondents spend more than two hours commuting. On their return from work, 23% spend less than 30 minutes commuting, 35% between 30 and 60 minutes, 35% between 60 and 120 minutes, and 6% spend more than two hours on commuting. Table 1 shows the four scales used for research.

We adopted the Smart-PLS software for data organization and treatment. The Structural Equation modeling of this software uses the method of Partial Least Squares. It seeks to meet situations such as the absence of symmetric distributions of the measured variables.

About 80% of the sample managers are males aged between 30 and 60 years old and married or in a stable relationship. It was highlighted the information that more than 80% use the car during the working day: meetings away from headquarters, visits to customers, etc. Respondents' positions are concentrated at a high level (41%) and a medium level (59%). More than 90% of respondents have had a National Driver's License for more than five years.

Table 1.
Scales used in the questionnaire

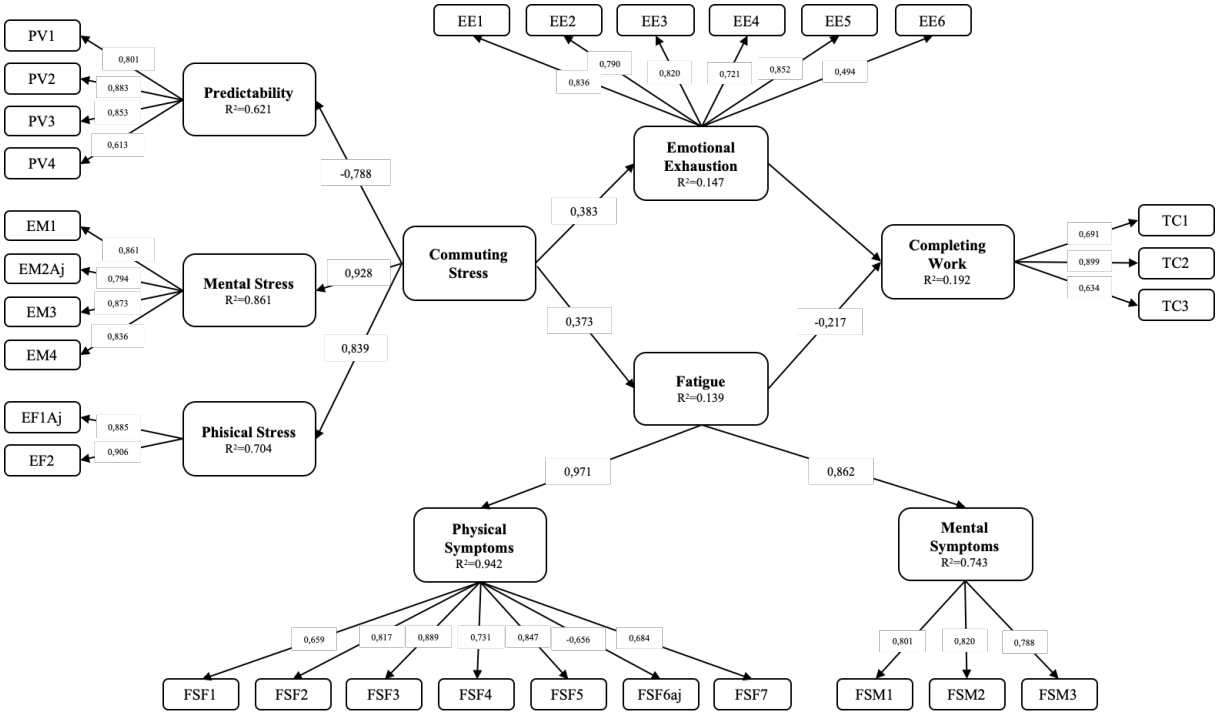
Questionaire	Created by	Validation to Portuguese	Assertions	Dimensions (Itens qty.)
Fatigue	Chalder *et al.* (1993)	Cho *et al* (2007); Moriguchi *et al.* (2010)	11 items	Symptoms: - phisical (7) - mentals (4)
Emotional exhaustion (Burnout)	Maslach et al. (1996)	Ferreira *et al.* (2010)	6 items	- Emotional exhaustion (6)
Completing work (Stanford Presenteism Scale – SP6)	Koopman *et al.* (2002)	Ferreira *et al.* (2010)	3 items	- Completing work (3)
- Predictability (6) - Mental stress (5) - Physical Stress (3)	Evans *et al.* (2002)	Items 3.1 and 4.1	14 items	

4. Results

4.1 Structural Model Analysis

Figure 2 shows the final measurement model. The variables EM2 (Mental stress), EF1 (Physical stress), and FSF6 (Fatigue - Physical symptom) were adjusted, as inverted questions on the scales verify them. We present the composite reliability of the measurement model in Table 2. The composite reliability is considered more suitable for assessing convergent reliability in the PLS, since the Combrach Alpha is very sensitive to the number of variables in each construct. The values found around the interval between 0.7 and 0.9 are considered satisfactory (Hair et al., 2014).

Figure 2.
Measurement model



The assessment of internal consistency can be performed by analyzing the load factors between variables and constructs. In this case, the values of the significant load factors need to be above 0.6. It results in a stroke above the value of 0.5 for each variable (Fornell & Larcker, 1981). According to Table 2, the values presented for the final measurement model show a stroke value above 0.5, indicating convergent validity.

Table 2.
Analysis of the results of the measurement model

	AVE	Confiabilidade Composta	R^2
Physical Stress	0.80140	0.88970	0.70400
Mental Stress	0.70640	0.90580	0.85980
Stress	0.51200	0.48050	-
Emotional Exhaustion	0.65490	0.90430	0.14660
Fatigue	0.51870	0.88000	0.13440
Predictability	0.63120	0.87070	0.62170
Physical Symptoms	0.65510	0.90410	0.89290
Mental Symptoms	0.64000	0.84210	0.73740
Completing Work	0.56180	0.78980	0.19060

To confirm the discriminant validity of the measurement model, we use the criteria of Fornell & Larcker (1981). We considered two tests. In the first, the correlations of the variables manifested for a construct need to be more substantial than for the others. The second test, based on the discriminant validity, indicates independence between the latent variables (Fornell & Larcker, 1981). Table 3 presents the results of the tests using the criteria of Fornell and Larcker (1981). The results indicate that the manifested variables' load factors are higher than those of the other latent variables. In the second test, we calculated the square root of the CVA values.

Table 3.
Analysis of the results of the measurement model - Fornell and Larcker criteria (1981)

	Physical Stress	Mental Stress	Emotional Exhaustion	Predictability	Physical Symptoms	Mental Symptoms	Completing Work
Physical Stress	0.89521						
Mental Stress	0.75660	0.84048					
Emotional Exhaustion	0.27880	0.42570	0.80926				
Predictability	-0.47800	-0.55290	-0.23330	0.79448			
Physical Symptoms	0.28030	0.38250	0.57210	-0.21460	0.80938		
Mental Symptoms	0.23880	0.34310	0.46810	-0.18980	0.67540	0.80000	
Completing Work	-0.19420	-0.28390	-0.40040	0.27890	-0.33380	- 0.33690	0.74953

For the evaluation of the structural model, we used the Student t test with the bootstrapping technique. The value of t represents the real difference between the groups and considers the standard error. The t-test value is considered significant if greater than 1.96 (Hair et al., 2014). Table 4 shows the values obtained from the test. The t-test values obtained are considered relevant.

Table 4.
Results of the evaluation of the structural model

Construct	Second Order Construct	Path Coef.	t Test	Significance
Predicability	**Commuting Stress**	-0.788	3.134	$p < 0.05$
Physical Stress		0.927	60.624	$p < 0.05$
Mental Stress		0,838	27.146	$p < 0.05$
Physical Symptoms	**Fatigue**	0.946	89.476	$p < 0.05$
Mental Symptoms		0.859	29.129	$p < 0.05$

4.2 Hypothesis Assessment

Table 5 presents the synthesis of the results of the adjusted structural model. The model indicates the possible causal relationships between the stress of managers in the city during their commute to work and their productivity, expressed by the completed work. The effect of this stress is due to increased emotional exhaustion (t test 3.984) and fatigue (t test 3.995), which affect the work completed (t test 2.241 and 1.963 respectively). The results confirm all the hypotheses. The stress of the urban traveler aggravates emotional exhaustion and fatigue from work activity. These hinder the completed work of the managers. The results indicate that commuting in cities with heavy traffic significantly impairs executive productivity.

The R^2 of the model is 19.2%. This result is quite relevant, considering that the work completed, as a relevant part of a manager's productivity, can be affected by numerous personal and organizational situations.

Table 5
Results of the evaluation of the structural model

Relation	Hipothesis	Path Coef.	t Test	Sig.	Result	R^2 - Completing work
Stress → Emotional Exhaustion	**H1**	0.383	3.984	$p < 0.05$	Suportada	19.2%
Stress → Fatigue	**H2**	0.367	3.995	$p < 0.05$	Suportada	
Emotional Exhaustion → Completing Work	**H3**	-0.276	2.241	$p < 0.05$	Suportada	
Fatigue → Completing Work	**H4**	-0.214	1.963	$p < 0.05$	Suportada	

5. Discussion and final remarks

In this article, we aimed to relate the effects of stress on the usual urban traveler and the productivity of managers in a Brazilian megacity. We did not find references related to the stress of the usual urban traveler and the productivity of managers. However, studies indicate that external factors influence effectiveness and the work environment. Given this, it was necessary to insert intermediate variables, fatigue, and the emotional exhaustion of burnout, since the stress of the usual urban traveler can precede and aggravate these effects. Studies have shown that both can result in losses in the productivity of knowledge workers, such as managers.

The effect of urban mobility is studied predominantly the assess, or directly influence, the impact on the fluidity of traffic and the understanding of the means of urban transport (Rolnik, 2017; Saldiva, 2018). It was also studied to assess the effect of infrastructures made

available in cities (Tsuda, 2019). The effect of urban mobility on citizens has shown an increase in stress, anxiety, and aggressive behavior (Stokols et al., 1978; Fallahi et al., 2016). Citizens of larger cities usually spend a significant part of their day exposed to the negative effects of traffic in large cities on the way between home and work, and vice versa, commuting (Stokols et al., 1978). Although these effects are recognized, and one can imagine how they would eventually influence the performance of managers at work, there is no evidence from studies that have dedicated themselves to confirm this effect, which is an important gap in the challenge for smart and sustainable cities.

Our work sought to verify the influence of managers' commuting stress on their productivity. We carried out the study in the city of São Paulo. We consider this city, due to its size and differences, which are not characteristic of cities in developed countries. It is an important site to evaluate these effects. It may be representative of other cities in the world, in developing countries, and especially in America Latin America, due to its specificities (Aguinis et al., 2020).

By definition, burnout occurs due to emotional overload from exposure to emotional and interpersonal stressors (Maslach et al., 1996). The main component of burnout is emotional exhaustion (Maslach & Leiter, 2016), but it also includes fatigue (Adams et al., 2006). However, despite being a work-related perspective, the manager is not exempt from other effects that increase his stress. Additionally, there is a gap in the literature in understanding the impact of personal stressors on the outcome of work (Peasley et al., 2020). Our study contributes to understanding the effect of stress on commuting urban commuting in large cities. Also, burnout studies traditionally evaluate professions that are considered stressful, and our study extends by evaluating the manager, who usually has more significant stressors.

Our results indicate that managers' stress in commuting has an important effect on work productivity via completed work. The results suggest that managers' stress in their commute work influences productivity due to their influence on burnout and fatigue of these managers. Commuting stress seems to affect burnout, confirming the influence on work-related behavior (Hennessy, 2008; Shanafelt & Noseworthy, 2017). The results also confirm the incidence of fatigue (Desmond &Matthews, 2009). Burnout, represented by emotional exhaustion, and fatigue (which is also a component of burnout), mediate the influence of managers' commuting stress on their productivity, by influencing the work completed.

Our work provides a reflection and foundation on urban immobility, which has affected both workers using public transport and managers. These managers are knowledgeable workers whose productivity is reduced in the face of the problems of urban unsustainability: debilitating stress, congestion, noise, air pollution, etc. They indicate the importance of future studies on de-stressing practices to reduce burnout (Kahn, 2019). Our research also suggests the need for HR professionals to be concerned with the commuting of managers, and with practices that can de-stress them.

The validated scale contribution is due to the potential use in future studies on urban mobility, such as the comparison between the various actors involved in traffic. Studying the stress of the usual urban traveler in other Brazilian cities and metropolises and the contrast of this stress between different cities, with triangulation of population data, topography, and urban violence index, can be interesting.

Additionally, it would be important to conduct longitudinal studies to understand how the adverse effects of commuting happen on managers in their work. The suggestion for future work is the application of the qualitative approach with semi-structured interviews to know in greater depth the phenomenon of the stress of the usual traveler and other debilitating effects of urban unsustainability on the productivity of managers and other professionals. These effects

are linked to coping strategies to cope with stress from different aspects (work, social, among others).

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