

# Stress Perception in Public Organisations: Expanding the Job Demands–Job Resources Model by Including Public Service Motivation

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## Abstract

Although stress has been a longstanding issue in organizations and management studies, it has never been studied in relation to Public Service Motivation. This article therefore aims to integrate PSM into the job demands–job resources model of stress to determine whether PSM might contribute to stress in public organizations. Drawing on original data from a questionnaire in a Swiss municipality, this study unsurprisingly shows that “red tape” is an antecedent of stress perception, whereas satisfaction with organizational support, positive feedback, and recognition significantly decrease the level of perceived stress. Astonishingly, the empirical results show that PSM is positively and significantly related to stress perception. By increasing individuals’ expectations toward their jobs, PSM might thus contribute to increased pressure on public agents. Ultimately, this article investigates the “dark side” of PSM, which has been neglected by the literature thus far.

## Keywords

PSM, stress perception, job resources, job demands, public organisations

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## Introduction

Academic research on Public Service Motivation (PSM) has grown rapidly over the past two decades. Its focus on values in motivation processes is topical and salient in a period of public sector reforms implementing performance-based management tools. PSM has been proven to be linked to several positive work outcomes: motivation at work and job satisfaction (Anderfuhren-Biget, Varone, Giauque, & Ritz, 2010; Bright, 2008; Crewson, 1997; Norris, 2003); organizational commitment (Camilleri, 2006; Castaing, 2006; Vandenabeele, 2009); organizational citizenship behavior (Houston, 2005); the intention to remain (Bright, 2008; Perry & Hondeghem, 2008b); and organizational efficiency (Alonso & Lewis, 2001; Bright, 2007), though the latter is deemed somewhat controversial within the literature (Brewer & Walker, 2010). Surprisingly, PSM has not been investigated in relation to negative work outcomes regarding the health of public agents, such as stress at work. Numerous studies demonstrate that public servants' health is becoming a source of concern, partly because of the unexpected consequences of performance-based reforms, which have greatly contributed to increased work pressure. In various countries, levels of government and policy sectors, recent empirical studies have shown an increase in professional diseases (Noblet, Rodwell, & McWilliams, 2006; Ramaciotti, 2007; Richardsen et al., 1992). Despite such evidence, the impact of PSM on the "health issue" of stress has not been investigated to this date.

The main objective of this article is to assess the influence of PSM on the level of stress perceived in public organizations. In accordance with empirical evidence showing that PSM is related to numerous positive work outcomes, we investigate whether PSM can be seen as a resource that public officials can mobilize to overcome stress. Drawing on "job demands–job resources" theory, we will evaluate the impact of PSM while controlling for other variables, which are related to job characteristics and work environment. The originality of this article and its contribution to existing literature have their basis in the integration of PSM into the "job demands–job resources" model, a theoretical model that is widely used to identify predictors of stress. It thereby opens new research avenues with respect to both predictors of stress and PSM outcomes.

Our objectives are threefold: (a) to investigate how specific factors, either related to job characteristics and the work environment, or to individual predispositions (PSM), help to predict stress in public bodies; (b) to examine how PSM interacts with the other variables included in the research model; (c) to determine the extent to which PSM might help public servants overcome stress at work. To execute these objectives, this article is divided into five main sections. The first concerns the theoretical framework on which our argument is grounded. It is dedicated to the presentation of the different concepts considered in our study and to the formulation of seven research hypotheses. The second section presents the context of the empirical tests performed, as well as the sample, data, and statistical procedures. In the third section, the empirical results are summarized and in the fourth section, they are extensively discussed. The concluding section outlines the limitations of our study and concludes with suggestions for new avenues of research.

## Theoretical Framework

### *Main Theories About Stress*

The two principal and most common theoretical models developed to measure and explain the degree of stress or unhappiness amongst employees were identified three decades ago by Karasek (1979) and Siegrist, Siegrist, and Weber (1986). The first model includes two major dimensions of work organization: on one hand, the workload of the employee characterized as a psychological burden attached to time pressures (demand), and on the other, the ability and flexibility that employees have over their professional activities (control; Bakker, Van Emmerik, & Van Riet, 2008; Karasek, 1979). This model predicts a heavy psychological burden associated with high levels of perceived stress and the possibility of a greater prevalence of psychological distress. When prolonged and sustained, psychological distress is a source of various detrimental mental disorders. However, demanding work requirements are less harmful when employees benefit from a substantial degree of job flexibility, have the opportunity to participate in defining the rules relating to their job, or can make extensive use of their vocational and social skills. This first approach, also called the "Job Demands Control Model," has subsequently been enriched by a third dimension: social support (Johnson, 1986; Johnson & Hall, 1988). This additional dimension comprises three facets: support of management (director, supervisor); support of colleagues (peer support); and support of family and friends (nonprofessional support). Social support reduces the negative impact of a heavy workload.

Siegrist (Siegrist, 1996) has, meanwhile, developed a second model: "Effort–Reward Imbalance at work." This model identifies a relationship, characterized by a reciprocal modulation, between the psychological and social recognitions that occur within an organization. This model presumes that employees are more likely to be confronted with stress if their efforts are not sufficiently rewarded or recognized either subjectively or objectively by their organization. Such an expression of organizational gratitude can be given by means of provisioning material rewards, such as a pay rise or career advancement, or by means of intangible rewards, such as promotion, training, and so on. In other words, a job that is too demanding is harmful when tangible and intangible recognition for work is not commensurate with the efforts made by employees (Siegrist, 1996; Siegrist et al., 1986; Siegrist, Peter, Junde, Cremer, & Siedel, 1990). These two models have been used in numerous quantitative empirical studies. They have shown that time pressure, workload, and lack of resources, social support, and tangible or intangible rewards are indeed major contributory factors for perceived job stress.

### *The Job Demands–Resources Model*

In this study, we use the Job Demands–Resources (JD-R) model to examine how job characteristics contribute to explaining variance in stress. This model was recently developed by Demerouti, Bakker, et al. (Bakker & Demerouti, 2007; Demerouti et al., 2001) and is now a well-used theory for understanding stress in the workplace. In

contrast to the two models presented above, this third theoretical model adopts a more positive view of work. Indeed, the Karasek model and the Siegrist models focus primarily on the negative consequences of work, such as stress and other physical or psychological health problems, whereas the JD-R model also seeks out factors related to employees' well-being. This perspective might therefore bring interesting results for practitioners seeking to develop a healthy organizational environment, rather than merely identifying detriments to employees' well-being.

Even if it does not exist, any consensus in the literature on the JD-R model is preferable per se to other models attempting to identify sources of stress. This model has at least two advantages. First, it was developed to go a step further than the first two, which relied on mixed empirical evidence as they were too simplistic to reflect the complexity of the work environment (Bakker, van Veldhoven, & Xanthopoulou, 2010).

Second, the JD-R model has been tested in various work settings and has been found to be empirically sound (for a comprehensive presentation of its empirical use, see Bakker & Demerouti, 2007). We too apply this model to contribute, in a cumulative way, to the empirical analysis of stress factors in the public sector. The model is based on previous theoretical and empirical developments, which have shown that stress or work tension are the results of two interrelated phenomena: the organizational and job constraints with which employees are confronted and the degree of job control that employees may utilize to face their job requirements and work challenges. These theoretical and empirical developments can be considered as a consensual framework in the scientific community specialized in the study of stress. The vast majority of research undertaken in the past few years to explain stress and burnout have been developed around these theoretical arguments (Demerouti et al., 2001; Maslach, Jackson, & Leiter, 1996; Schaufeli & Bakker, 2004; Schaufeli & Enzmann, 1998):

A central assumption in the JD-R model is that working characteristics may evoke two psychologically different processes. In the first process, demanding aspects of work (i.e., work overload and complaining customers) lead to constant psychological overtaxing and in the long run to exhaustion. (. . .) In the second process proposed by the JD-R model, a lack of job resources precludes actual goal accomplishment, which causes failure and frustration. (Bakker et al., 2008, p. 311)

As already stated above, the JD-R model points to a broad variety of work aspects that affect employees' well-being. These job characteristics can be classified in two higher order opposing categories: job demands and job resources. On one hand, "job demands are defined as those aspects of the work context that tax employees' personal capacities and are, therefore, associated with certain psychological and/or physiological costs" (Van den Broeck et al., 2008, p. 278). Work overload, organizational constraints, emotional demands, work-home conflict, and interpersonal conflict are job demand factors proven to be positively related to stress if they exceed employees'

adaptive capacities (Bakker et al., 2008; Noblet et al., 2006; Richardsen et al., 1992; Schaufeli & Bakker, 2004; Van den Broeck et al., 2008). On the other hand,

the category of job resources is defined as those physical, psychological, social, or organizational aspects of the work context that (a) can reduce the health impairing impact of job demands, (b) are functional in achieving work goals, and (c) stimulate personal growth, development, and learning. (Van den Broeck et al., 2008, p. 278)

Opportunities for skill utilization, supervisor support, colleague support, financial rewards, career opportunities, team cohesion, harmony, autonomy, and coaching are the main aspects identified as resources that enable employees to work in a healthy atmosphere (Bakker & Demerouti, 2007; Demerouti et al., 2001; Johnson & Hall, 1988; Schaufeli & Bakker, 2004; Siegrist, 1996; Van den Broeck et al., 2008).

In a nutshell, the JD-R model allows for the integration and assessment of a broad range of factors that affect, either negatively (job demands) or positively (job resources), employees' well-being. Nevertheless, most of the time, job resources dimensions commonly considered in empirical research are mainly related to social (supervisor or colleague support and cohesion) or work characteristics (autonomy, career opportunities, tangible or intangible rewards, and skill utilization). Astonishingly, the JD-R model does not include as job resources variables related to individual characteristics except for the traditional control variables included in most empirical research (gender, age, organizational tenure, and educational level). This is very surprising since the current research in public management suggests that individual values related to the individual's desire to pursue the common good circumscribed in the concept of public service motivation (PSM) may also be considered as crucial resources in public organizations' explanations of work motivation, job satisfaction, and performance (Anderfuhren-Biget et al., 2010; Vandenabeele, 2009; Westover & Taylor, 2011). Therefore, we propose an expansion of the JD-R model by integrating PSM as a key concept characterizing the individual values of civil servants.

### *Expanding the JD-R model by Integrating Individual Values and Public Sectors' Characteristics*

Since the seminal article presenting the concept of PSM (Perry & Wise 1990), many empirical studies have tested the validity of the construct in various types of administrative units. All their results emphasize the ability of such a concept to reanimate or even reintroduce the dimension of values when studying the motivational processes taking place in public organizations. PSM encompasses "the belief, values and attitudes that go beyond self-interest, that concern the interest of a larger political entity and that motivate individuals to act accordingly whenever appropriate" (Vandenabeele, 2007, p. 547). Thus PSM represents a particular type of motivation that is based on

public values, as it refers to the realization of certain collective values rather than material self-interest. Based on such theoretical assumptions, the PSM concept was then described as a multidimensional construct. Four dimensions were, in this way, explicitly defined: *attraction to policy making*; *commitment to the public interest/civic duty*; *compassion*; and *self-sacrifice* (Perry, 1996). With this original conceptualization, numerous studies have testified to the positive effect of PSM over several desirable work outcomes: organizational commitment (Camilleri, 2006; Castaing, 2006; Perry & Hondeghem, 2008a; Vandenabeele, 2009), job satisfaction (Bright, 2008; Taylor, 2007, 2008), organizational citizenship behavior (Kim, 2006; Pandey, Wright, & Moynihan, 2008), work motivation (Anderfuhren-Biget et al., 2010); and, to a certain extent, performance (Brewer, Selden, & Facer, 2000; Brewer & Walker, 2010). Moreover, PSM has a positive impact on turnover intentions in the sense that public officials reporting high levels of PSM are more likely to remain in their jobs (Bright, 2008). Because PSM is likely to be a factor of well-being at work, this study seeks to expand the JD-R model by including PSM in the job resources' category. In other words, we consider the individual values related to PSM as resources on which public officials may rely to cope with job demands.

Most empirical studies dedicated to stress and more generally to job strain are developed around data collected in private organizations. To the best of our knowledge, very few recent studies rely on public organizations' samples (Kim, 2005; Noblet et al., 2006; Noblet & Rodwell, 2008) and most do not adapt their research models either to the very specific "Job Demands" factors inherent in the functioning of public organizations or to the values contained in PSM as a particular "Job resource." Indeed, we depart from the main hypothesis that individuals who declare high levels of PSM will perceive more congruence between what is offered in the work environment and what their personal aspirations might be. Therefore, this fit between organizational environment and personal expectation will probably prove helpful in overcoming job strain. Person-environment fit is one of the most popular areas of research in human resource management studies. The perspective stresses the importance of congruence between the characteristics of individuals and the characteristics of organizations (i.e., culture, values, goals, and resources; Kristof, 1996). In other words, employees are more likely to be committed, satisfied, and to remain in their jobs if they feel that there is a good fit between their preferences, be they intrinsic or extrinsic, and their organizational environment. In this respect, numerous studies have demonstrated the positive effect of such a fit on work outcomes; for instance, on job satisfaction or on turnover intentions (Bretz & Judge, 1994; Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005; Vancouver & Schmitt, 1991). With regard to such theoretical assumptions, we postulate that being public service motivated might be considered as a resource for public agents confronted with stress.

Thereafter, we shall begin by presenting the job demands that are presumed to increase the perception of stress, followed by the job resources that seem to have the opposite effect.

### *Job Demands in Public Administration*

The academic literature mentions or uses many different job demands' dimensions. Sources of stress may be as diverse as "unfair treatment from more senior staff," "lack of recognition for good work," "lack of feedback," or "lack of opportunity to take on more senior roles" (for more information, see Noblet et al., 2006, p. 341). Other studies include "work pressure," "emotional demands," "physical demands," and "work-home conflict" as job demand dimensions (Bakker et al., 2008; Van den Broeck et al., 2008). But none mention red tape, one of the few native concepts of public management literature (Coursey & Pandey, 2007) that has been studied extensively by public management scholars.

The concept of "red tape" characterizes the burdensome rules and procedures that constrain and regulate the activities of public servants. More precisely, red tape is defined as "rules, regulations, and procedures that remain in force and entail a compliance burden, but do not advance the legitimate purposes the rules were intended to serve." (Bozeman, 2000, p. 12). For that reason, "not all formal rules are red tape, just those that frustrate employees in achieving their goals" (Moynihan & Pandey, 2007, p. 43). Bureaucratic and procedural constraints and the fact that they become an end rather than a means to pursue organizational objectives are well documented since Blau and Merton's studies on organizational dysfunctions (e.g., Blau, 1955; Merton, 1940).

This body of research has demonstrated that individual perceptions of red tape may be viewed as a general predictor of numerous negative and undesirable employee attitudes (Crozier, 1963; Crozier & Friedberg, 1977; Lipsky, 1980). For public employees, perception of red tape is positively related to the intention to leave (Brewer & Walker, 2010), a lack of motivation (Moynihan & Pandey, 2007), or even an increased feeling of dissatisfaction (Buchanan, 1975; Moynihan & Pandey, 2007) and resignation (Giauque, Ritz, Varone, & Anderfuhren-Biget, 2012). More precisely, empirical studies have shown that red tape might induce employees to develop feelings of personal alienation, higher insecurity, pessimism, and mistrust (Bozeman & Rainey, 1998; DeHart-Davis & Pandey, 2005; Pandey & Kingsley, 2000; Rainey, Pandey, & Bozeman, 1995). Therefore, in this study, red tape is categorized as the main characteristic of job demands according to the public context of the study. In this respect, red tape is expected to be positively related to stress:

*Hypothesis 1:* A high degree of perceived red tape increases stress perception.

### *Job Resources in Public Administration*

The second conceptual component of the JD-R model, namely, the resource category, is more abundant in the literature. First we will discuss the factors related to social support, followed by those in relation to particular factors of satisfaction before considering PSM as a public service specific resource. Since the work initiated by

Eisenberger and his colleagues (Eisenberger et al., 1990), perceived organizational support was circumscribed to characterizing the extent to which an organization values the contribution of its employees and cares about their well-being. Two recent meta-analyses have shown that this perception of being supported generates numerous positive outcomes for both the organization and its employees (increased affective commitment, job involvement and job satisfaction, desire to stay, and the induction of extrarole behaviors; Rhoades & Eisenberger, 2002; Riggle, Edmondson, & Hansen, 2009).

More directly related to the purpose of this study, perceived organizational support reduces the aversive individuals' reactions to stressors by assuring them that the organization is concerned about their well-being. Therefore, in accordance with empirical evidence gathered from previous studies (Schaufeli & Bakker, 2004; Van den Broeck et al., 2008), we hypothesize a negative relationship between organizational support and the perception of stress:

*Hypothesis 2: Organizational support reduces stress perception.*

Several job resources can be directly found in the work environment or job characteristics. In this respect, the satisfaction of crucial desired factors related to work can be seen as resources used to overcome or reduce stress at work: positive feedback; task autonomy; coaching; skill utilization; tangible and intangible rewards; and career and promotion (Bakker et al., 2008; Gould-Williams, 2007; Noblet et al., 2006; Noblet & Rodwell, 2008; Van den Broeck et al., 2008). Knowing that intangible rewards such as recognition for work done and the feedback that employees receive from their superiors are essential elements reducing stress within the Effort-Reward Imbalance at Work model (Siegrist, 1996; Siegrist et al., 1990), we will test the relationship between these forms of intangible rewards and public servants' perception of stress. In the context of this research, three characteristics defining the work environment are considered as job resources. The first deals with respondents' opportunity to participate in their organization. The rationale is that individuals who have autonomy or who can decide how to handle their own professional tasks can cope better with stress. The second more specifically concerns satisfaction with career and promotion opportunities, which has been proven to be negatively related to stress in the past (Noblet et al., 2006). In this respect, it is expected that individuals assured of a clear career path are less likely to be undermined by stress. The third characteristic is closely related to what the organization concretely does for its employees to enhance their ability to overcome stress. In this respect, we expect that when opportunities for skill improvement are satisfied, employees will be less likely to be stressed.

*Hypothesis 3: A high degree of satisfaction toward positive feedback and recognition reduces stress perception.*

*Hypothesis 4: A high degree of satisfaction toward participation opportunities reduces stress perception.*



*Hypothesis 5:* A high degree of satisfaction toward career and promotion opportunities reduces stress perception.

*Hypothesis 6:* A high degree of satisfaction toward skill improvement opportunities reduces stress perception.

Reflecting the particularities of public service work, PSM is included as a unique job resource for civil servants that enables them to surmount stress at work. As already noted, several empirical studies show that PSM is related to positive organizational outcomes. Drawing on these empirical results, we can hypothesize a positive relationship between PSM and well-being in the context of public bodies.

In other words, public organizations must be regarded as a specific life order characterized by particular features such as formal rules and procedures, a strict hierarchical command, or a succession of bureaucratic levels. This entire set of constraints sanctifies the superiority of rules and laws over employees' or customers' expectations. The unambiguous logic of the "bureau" or "office," because of the preponderance of the legal-rational order therein (Weber, 1978), affects the "culture" of public organizations and, of course, on their structures and functioning (Antonsen & Jorgensen, 1997; du Gay, 2000; Olsen, 2006; Schofield, 2001). Public employees do not perceive bureaucratic structures and practices as a neutral field in which to work. Conversely, we depart from the strong assumption that their acceptance of the bureaucratic environment is contingent on their public service orientation. For that reason, holding values that are congruent or compatible with public organizations' missions and features will probably lead respondents to report a lower level of stress. In contrast, public employees who are confronted with organizational rules and constraints that are not compatible with their PSM, will encounter more difficulty in coping with stressful events. This second category of employees is more likely to report being stressed when confronted with work situations that are not compatible with their public service motivation. In other words, PSM is considered as a job resource that might help public servants overcome stress:

*Hypothesis 7:* A high degree of public service motivation reduces stress perception.

Seven hypotheses are developed above. The first six hypotheses are related to more traditional predictors of stress, which have been widely researched in previous studies. Given the fact that the vast majority of empirical research with regard to stress have been developed in private organizations, the first original contribution of this article is to consider these six first variables in the context of a public organization. Second, a seventh hypothesis is proposed. It deals with the hypothetical relationship between PSM and stress. This last relationship has not yet been examined in the literature and constitutes a significant innovation in the study of PSM outcomes.

## Method

### Sample

To empirically test the previous hypotheses, this study used a sample from a large municipality in the French-speaking region of Switzerland. To optimize the response rate in our survey, we first contacted the Human Resources Department of the municipality. Thereafter, the executive members of the municipality gave their official approval of our study. The questionnaire was developed in partnership with the leaders of the HR Department. After a test phase, an Internet link leading to the questionnaire was sent to all municipal employees by e-mail with a cover letter signed by the municipal officials. The employees were invited to fill out the electronic questionnaire within a month (January to February of 2010). A reminder was sent in the middle of January to check that all employees had had the opportunity to fill it. To ensure complete privacy, answers were directly saved in a server belonging to our university. No municipal employees had access to this data. The employees were completely and transparently informed about the procedure. The announcement of these precautions had two purposes: to increase the participation rate and to function as a baseline requirement to prevent common method bias (Podsakoff et al., 2003).

Approximately 2,888 municipal employees were contacted by e-mail and a total of 859 employee surveys were returned (response rate, 24.8%). This response rate might be considered low, but the fact that a great number of municipal employees decided not to participate is most likely due to the profound organizational reforms that occurred in the municipality at that time. During the data collection period, for example, the municipal authorities informed the municipal employees that a new wage system would be implemented. Therefore, it is quite possible that this information discouraged some employees from participating in our study. It is also important to note that one municipal department declined our invitation to participate in our enquiry for mainly political reasons. Nevertheless, even if the response rate is rather low, it is comparable to numerous other studies on PSM. Moreover, the sample on which this study is developed is rather important compared to previous international empirical research, which mainly relied on samples containing 200 and 400 questionnaires (Perry & Hondeghem, 2008a; Vandenabeele & Van de Walle, 2008; Wright, 2008). Nonetheless, this rather small response rate must be noted as a limitation in this study. Another limitation could also be that we focused our attention on a single municipality. In the future, it would be interesting to extend our research questions to other important municipalities in Switzerland to compare the empirical results.

According to Table 1 below, the respondents ranged in age from 20 to 69 years and 64.8% were male. Forty-six percent of the respondents were employees, whereas 53.5% claimed to have supervisory responsibilities. Education was well spread out, with 30% having a university degree, 15.3% with upper professional apprenticeship, 3.5% with high school diplomas, 4.3% with a professional training degree (secondary level), 43.9% with a professional training degree (primary level), and 3.2% with some secondary school education. Six percent of employees declared that they earn less than

**Table 1.** Sample Description.

Gender	Male: 64.8% Female: 35.2%	Educational level	Secondary school: 3.2% Professional training (primary level): 43.9% Professional training (secondary level): 4.3% High school diploma: 3.5% Upper professional apprenticeship: 15.3% University degree: 28.8% Doctorate: 1.2%
Age in classes	20-29: 8.2% 30-39: 22.6% 40-49: 33.9% 50-59: 29.3% 60-69: 6%		
Hierarchical position	Apprentice, attendee, auxiliary: 0.5% Employee: 46% Manager, specialist: 53.5%	Income in classes	< 52'000: 6% 52'001-78'000: 29.9% 78'001-104'000: 34% 104'001-130'000: 21.3% 130'000-156'000: 5.7% > 156'000: 3.1%
Organizational tenure	Mean: 13.13 years		

52'000 CHF, 63.9% said they earn between 52'001 and 104'000 CHF, and 30.1% declared that they are paid more than 104'001 CHF. In terms of organizational tenure, the mean is 13.13 years.

## Measures

The following measures, or scales, consist of items taken from attested scales with response options on a 5-point Likert-type scale ranging from 1, indicating *strongly disagree*, to 5, indicating *strongly agree* (for further details on the items, see the appendix). The usual statistical procedures were carried out: factor and reliability analysis. At the end of the process, besides the independent variable (perceived level of stress), one independent variable regarding job demands (red tape) and six variables related to job resources were created: Perceived organizational support; four variables related to the satisfaction of specific work features; and Public Service Motivation.

**Stress.** Stress was assessed with 10 items. More precisely, we have used two previously tested batteries of items to create a general index of stress. The first subscale (seven items) aimed to measure the degree to which respondents report work tension (Cook et al., 1981, p. 104) and the second one (three items) was used to assess the degree of work exhaustion (Kim, 2005).<sup>1</sup> After carrying out a factor analysis (principal

component analysis), we noticed that the 10 items measuring these two subdimensions of stress formed a single factor. Therefore, a general index of stress was created. Cronbach's  $\alpha$  (.918) was computed before creating a summative index of these items for the purpose of the regression analysis.

### *Job Demands*

*Red tape (RT)*. Many different operationalizations of red tape compete in the relevant literature. For the purposes of this study, we focused on individual perceptions of red tape in accordance with previous research carried out on public employees (Coursey & Pandey, 2007; Pandey & Scott, 2002; Pandey & Welch, 2005; Rosenfeld, 1984; Scott & Pandey, 2005). These studies support the claim that "red tape is best accounted for by the meaning ascribed among those who interact with, and are affected by rules and procedures within an organization" (Scott & Pandey, 2005, p. 166). Therefore the construct was measured using three items adapted from Wright's study (Wright, 2004). These items assessed the extent to which respondents feel constrained by organizational rules and management practices. It should also be noted that the items used to measure RT are very close to the items previously used to measure organizational formalization. This scale of red tape has a coefficient of reliability of .786. We then create a summative index of these items for the regression analysis.

### *Job Resources*

*Perceived organizational support (POS)*. Perceived organizational support was assessed with a shortened version (six items) of the original perceived organizational support scale developed by Eisenberger et al. (Eisenberger et al., 1990). This measure has therefore been used in recent scientific publications and shows high reliability and internal validity (Su et al., 2009). Cronbach's  $\alpha$  (.937) was computed before creating a summative index of these items to integrate POS into our models of regression.

On the basis of the work of Daley and Vasu on high-performance HRM practices, and of the work of Spector on specific factors of work satisfaction (Daley & Vasu, 2005; Spector, 1985), four scales related to specific factors of work satisfaction were crafted. All have good coefficients of reliability. After computing Cronbach's alphas, we created four summative indexes. The different variables used in our analysis are as follows:

- Satisfaction toward positive feedback and recognition (Satrecog) contains four items ( $\alpha = .903$ );
- Satisfaction toward participation opportunities (Satpart) includes three items ( $\alpha = .757$ );
- Satisfaction toward career and promotion opportunities (Satprom) is made up of four items ( $\alpha = .917$ ); and
- Satisfaction toward skill improvement opportunities (Satskill) consists of two items ( $\alpha = .812$ ).

*Public Service Motivation (PSM)* was measured with 23 items taken from Perry (Perry, 1996). The four original dimensions of the PSM construct were taken into account. However, the two items relating to the “attraction to policy making” PSM dimension were adapted. The original item “Politics is a dirty word” was reworded to “I am interested in politics.” As a second item for the “Attraction to Policy Making” scale, we used an item developed by Kim (2009) that identifies where the participant’s interest lies in discussing political subjects: “I like to discuss political subjects.” Those two items reflect an interest toward politics. Cronbach’s  $\alpha$  (.889) was computed before creating a summative index of these 23 items for the purpose of the regression analysis.

**Control Variables.** Several control variables were used in our study. Gender, age, hierarchical level, and educational level constitute the baseline model of our analyses. These control variables were chosen to allow for comparisons with previous research, even if their respective results are somewhat mixed (Kim, 2005; Van den Broeck et al., 2008).

### *Statistical Procedures*

Prior to assessing the reliability of our different variables, two other indicators were used for testing the condition of the data set. The data was reviewed to ensure that the assumptions of normality were upheld. With regard to our data, all the variables used in this study fell within the suggested range (skewness should be less than 2 and kurtosis should be less than 7). Finally, the data set was examined to determine if multicollinearity was an issue (Hayduk, 1987, p. 50). Indicators generally employed to assess multicollinearity are bivariate correlations (greater than .9), tolerance statistics, and VIF statistics (Carricano & Poujol, 2008). The tolerance and VIF scores of our data were also within the acceptable range for all the variables. On the basis of such evidence, we can conclude that the data set was in good condition. Regression analyses use a set of scales that were assessed with Cronbach’s alpha. Finally, summative indices, as already stated above, were created for each scale for the purpose of correlation and regression analysis.

This study used hierarchical multiple regressions to determine the associations between job demands, job resources, and perceived stress. Every regression model included the four aforementioned control sociodemographic variables. Model 1 tests whether demographic variables add unique variance. Models 2 and 3 assess how job demands variables (Model 2) and job resources variables (Model 3) contribute to an understanding of the variance of stress. In two steps, these two models establish how the two categories of independent variables add any unique variance beyond that which is accounted for by the control variables. The comparison of Model 2 and Model 3 provides two important pieces of information: first, the comparison of the  $R^2$  will show which category of predictors of stress are the most important, and second, it will allow us to independently observe how the different dimensions of job resources contribute

to the reduction of stress perception without taking into account red tape. Finally, Model 4, besides sociodemographic variables, integrates the two categories of predictors of stress. This model is also built in two steps to assess how the job demand and job resources, taken together, contribute to the explanation of stress beyond the part of variance accounted for by the control variables and job demands' variable.

## Results of the Hierarchical Regression Analyses

To better investigate the extent to which our two sets of predictors (job demands' and job resources' variables) might explain perceived stress, we have conducted four hierarchical regression analyses according to the procedure explained above (see Table 2 below). The first model (Model 1) shows that control sociodemographic variables alone are not significantly associated with the perception of stress. Furthermore, this baseline model accounts for only a small part of the variance of stress (1%).

On one hand, Model 2 points out that red tape (RT) is, as expected, positively and significantly related to stress. Considering the change of  $R^2$ , we can conclude that red tape after controlling for demographic variables accounts for 15.3% in the explanation of the stress variance. This specific result suggests that Hypothesis 1 is strongly supported by our study.<sup>2</sup> On the other hand, Model 3 shows that two job resources are significantly and negatively related to the perception of stress. Thus the fact that perceived organizational support and satisfaction with received recognition are two important variables that reduce stress runs contrary to PSM that was expected to be as a stress reducer (PSM is almost significant at the .055 level). One can also notice that either satisfaction with participation opportunities or satisfaction with career and promotion opportunities, or even satisfaction with skill improvement opportunities are variables that are not significantly related to stress. Therefore, Hypotheses 2 and 3 are supported, whereas Hypothesis 4, 5, 6, and 7 are not. This model containing job resources variables explains an important portion of the variance of perceived stress (20.9%). Moreover, the introduction of the job resources category enhances the significance and the level of the coefficient related to the hierarchical level of the respondent, thus showing that some of these variables in fact interact together.

A look at Model 4 mostly confirms the results of the two previous models. It demonstrates that four variables are significantly related to stress. Red tape has the strongest (.276) effect on stress perception. Employees experiencing a large amount of red tape in their daily work are likely to develop a high level of stress. Conversely, perceived organizational support (-.222) and satisfaction with received recognition (-.149) are negatively related to the perceived level of stress, thus confirming that different ways to support or reward personnel are beneficial toward attenuating stress. Both results were expected, as stated in Hypotheses 2 and 3. However, the other tested job resources did not seem to deploy their expected effect. More strikingly and unexpectedly, PSM is significantly and positively related to stress ( $r = .085$ ). According to this result, employees reporting high levels of PSM are likely to develop a high level of stress at work. Thus, contrary to our expectations, PSM does not constitute a job

**Table 2.** Hierarchical Regression Analyses for Variables Predicting Perceived Stress.

		Model 1: B (SE)	Model 2: B (SE)	Model 3: B (SE)	Model 4: B (SE)
Control variables	Gender	.030 (.107)	.022 (.099)	-.012 (.094)	-.011 (.095)
	Age	-.059 (.048)	-.051 (.045)	-.050 (.043)	-.049 (.044)
	Hierarchical level	.054 (.106)	.062 (.098)	.116** (.094)	.115** (.094)
	Educational level	.049 (.028)	.029 (.026)	.011 (.025)	-.001 (.025)
Job demand variable	RT		.379*** (.041)		.276*** (.040)
Job resources variables	POS			-.258*** (.068)	-.222*** (.069)
	Satrecog			-.218*** (.067)	-.149* (.067)
	Satpart			-.075 (.053)	-.073 (.053)
	Satprom			.065 (.052)	.049 (.053)
	Satskill			-.029 (.046)	-.040 (.046)
	PSM			.084 (.055) (.076)	.085* (.078)
	R <sup>2</sup>	.010	.153	.209	.278
	R <sup>2</sup> change	.010	.143	.199	.268
	F change	1.239	83.611***	20.549***	25.884***
	Adjusted R <sup>2</sup>	.002	.145	.193	.262
F statistic	1.239	17.879***	12.942***	17.080***	

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

resource for public officials. Hypothesis 7 is therefore not supported in the context of this study. Finally, the fourth model also reveals an important interaction amongst several scrutinized variables. The most striking interaction concerns the hierarchical level that seems to interact strongly with the two most important variables of the job resources category (perceived organizational support and satisfaction with positive feedback and recognition), and this interaction is also seen in Model 3. Last but not least, the overall equation of Model 4 significantly explains the variance in stress ( $R^2 = .278$ ,  $F = 17.080$ ,  $p < .001$ ).

## Discussion

The aim of this study was to identify the work environment and job characteristics dimensions that are related to perceived stress amongst a population of public servants in a municipal administration in Switzerland. Our analysis aims at (a) contributing to the body of empirical research drawing on the JD-R model, and (b) expanding the so-called JD-R model by including PSM. According to the fact that PSM is a value-laden form of motivation that is directed toward the realization of the common good, we have hypothesized that this type of motivation constitutes a job resource for public officials for helping them overcome stress. Indeed, working in a public sector environment that is presumably compatible with individuals' motives and values would

certainly lead public servants to be more comfortable with their day-to-day work. Therefore, it was expected that such congruence between individuals' expectations and organizational objectives and missions would constitute a crucial resource that public officials might use to deal with stress.

Our empirical results yield mixed evidence with respect to our hypotheses. First, red tape is unsurprisingly associated with the perception of stress. Thus red tape may be considered as a central job demands factor in public organizations that is damaging to public employees' well-being at work. This first result is consistent with numerous previous studies showing that red tape may produce negative outcomes, as outlined in the theoretical section. According to our own results, we can conclude that red tape is without a doubt an important factor in stress perception. In other words, this first result is unsurprising and confirms the negative role of red tape when studying organizational outcomes in public organizations.

Second, we also found that organizational support and, to a lesser extent, satisfaction with positive feedback and recognition are both negatively and significantly related to perceived stress. These two factors may therefore be considered as job resources that help public employees overcome stress. These results are consistent with previous studies that have demonstrated the positive impact of social support and positive feedback on employees' well-being (Bakker & Demerouti, 2007; Johnson, 1986; Johnson & Hall, 1988). With that being said, other factors that negatively related to perceived stress in previous research, such as participation opportunities, promotion and career opportunities, or even skill improvement opportunities, are not significantly associated with stress in this study. Thus this study does not support previous findings with respect to these specific factors.

Third, it comes as a surprise that our analysis found PSM to be positively and significantly related to stress (even if the coefficient has a rather weak value  $r = .085$  and is barely significant  $.043$ ) we did not expect such a result postulating that PSM might play as a job-resource enabling public employees to cope with stress. However this later result should be taken with caution as this relation is rather weak and is only significant when taking into account the effect of red tape. To scrutinize further this insight, a supplementary model containing the interaction term of the two variables was tested. As a result the coefficient of the interaction term was not significant and its addition to the model has not increased significantly its explanatory power (no significant raise of  $R^2$ ). Therefore, in the context of this study red tape and PSM do not significantly interact when explaining perception of stress. However, we have sound reasons to believe that individuals reporting high levels of PSM display high expectations with regard to their job and to the missions their organization has to deal with. We know, thanks to previous research concerning PSM outcomes, that people reporting high levels of PSM are also much more committed to their organization than their counterparts who declare low levels of PSM (Castaing, 2006; Crewson, 1997; Pandey & Stazyk, 2008; Vandenabeele, 2009). Consequently, it is likely that these highly committed individuals will also suffer from stress if they perceive an inability to reach their personal and organizational objectives due to organizational constraints or work environment burdens or pressures (Pfeffer, 2007). They will be more inclined to suffer



from psychological and physical strains than individuals who consider their job as just a way to make a living. This specific result showing that PSM is related to negative work outcomes demonstrates that PSM does not always constitute a job resource. Previous research has revealed the “dark side” of PSM by pointing out the positive relationship between PSM and resigned satisfaction (Giauque et al., 2012). Resigned satisfaction is a particular form of work satisfaction that characterizes an individual’s sense of the discrepancy between his or her personal aspirations and the characteristics of his or her actual work situation. The closeness between the results of the aforementioned study and those of the present study suggests that PSM, because of the high expectations that this set of public service values might rise among public servants, could also have a negative impact on public servants’ well-being.

## **Conclusion**

There are several important implications resulting from this study. First, there appears to be considerable value in viewing stress at work through the lens of JD-R theory. And the inclusion of job-resources alongside job-demands as explanatory factors of stress—the very added-value of this model—have been confirmed by this study. Furthermore, expanding the JD-R model by including individuals’ motives and values is worth considering in future research. It appears in this study that individuals’ high expectations for their professional and organizational missions and objectives might play a negative role with respect to employees’ well-being. For instance, PSM might play such an unexpected role, even if further research is needed to confirm or contradict our results. In this vein, it would be very interesting to duplicate our research model and apply it to other organizational contexts, for instance, at other levels of government (federal or cantonal administrations) and other national contexts. This strategy could shed more light on unexpected consequences of PSM, or the “dark side” of PSM.

Moreover, the inclusion in the JD-R model of the “value component” was rather well supported in our research. It is thus possible to enlarge this perspective to include private companies, as most research on stress is carried out on private employees’ samples. In this respect, person–organizational fit might be a substitute for PSM in the private sector.

Furthermore, this research confirms that stress is primarily related to work or organizational characteristics rather than to individual predisposition or personal factors. In the context of public organizations, red tape appears to be an important antecedent of stress. According to the fact that red tape is consubstantial to the functioning of public administrations, since rules and procedural constraints are embedded in the architecture of public organizations (Bozeman, 2000; Pandey & Scott, 2002), it is therefore of great importance to mitigate their possible effects on public employees’ well-being. This can be accomplished by stopping contradictory injunctions, which are increasing in public administrations through a perverse process rooted in the definition of organizational objectives that are not compatible with resources available to employees (Pollitt & Bouckaert, 2004, chap. 7, pp. 159-181).

Finally, it is also worth mentioning several limitations with respect to the present study. First, we must recognize the limited number of stress factors included in our research design. It would have been beneficial to our study to also include other factors that have been proven to be related to the job demand category of stressors in previous studies such as: workload; time pressure; emotional demands; work-life conflict; role conflict as job demands' variables (Bakker et al., 2008; Kim, 2005; Richardsen et al., 1992; Van den Broeck et al., 2008). Regarding job resources' variables, it would have also been valuable to test the relationship between organizational fairness, trustworthiness, harmony, or team cohesion with perceived stress (Cho & Ringquist, 2011; Kim, 2005; Richardsen et al., 1992). The fact that we did not have the ability to extend the number of factors included in our statistical equation may explain why the overall variables included in our research design accounted for 27.8% ( $R^2$ ) of the variance of our target variable (stress).

This study allows us only to investigate the psychological phenomenon of stress under a synchronic perspective. Therefore, the results of this study do not clearly establish a causal relationship between job demands'–job resources' variables and stress. Moreover, we employ variables that are subjective rather than objective measures, so we cannot exclude common method bias.

Despite these limitations, our analysis does shed light on important phenomena related to stress perception in public organizations and opens new avenues for research. We encourage other studies to pursue this line of enquiry.

## Appendix

Variables	Items/questions	Statistical coding
Red tape	In my job even small matters have to be referred to someone higher up for a final answer I must always check with my boss before making important decisions This organization seems much more concerned that I follow procedures than that I do a good job	
Perceived organizational support	My organization takes pride in my accomplishments at work My organization really cares about my well-being My organization value my contribution to my well-being My organization considers seriously my goals and values My organization shows very little concern for me® My organization is willing to help me when I need a special favor	
Satisfaction toward positive feedback and recognition	When I do a good job, I receive the recognition for it that I should receive I do not feel that the work I do is appreciated There are few reward for those who work there ® I don't feel my efforts are rewarded the way they should be ®	

(continued)

## Appendix (continued)

Variables	Items/questions	Statistical coding
Satisfaction toward participation opportunities	Employees in this job are allowed to make many decisions Employees are provided the opportunity to suggest improvements in the way things are done Supervisors keep open communication with employees in this job	
Satisfaction toward career and promotion opportunities	There is really too little chance for promotion on my job® Those who do well on the job stand a fair chance of being promoted People get ahead as fast as they do in other places I am satisfied with my chance for promotion	
Satisfaction toward skill improvement opportunities	Extensive training programs are provided for individuals in this job I am satisfied with the continuing education programs offered to me	
PSM	I'm very interested in politics I like to discuss political subjects I unselfishly contribute to my community I consider public service my civic duty Meaningful public service is very important to me I would prefer seeing public officials do what is best for the whole community even if it harms my interest It is hard for me to get intensively interested in what is going in my community® I am rarely moved by the plight of the underprivileged® Most social programs are too vital to do without I am often reminded by daily events about how dependent we are on one another It is difficult for me to contain my feelings when I see people in distress To me patriotism includes seeing to the welfare of others I seldom think about people whom I don't know personally ® I have little compassion for people in need who are unwilling to take the first step to help themselves ® There are few public programs that I wholeheartedly support® Much of what I do is for a cause bigger than myself I am one of those rare people who would risk personal loss to help someone I feel people should give back to society more than they get from it Making a difference in society means more to me than personal achievement I believe in putting duty before self Doing well financially is definitely more important to me than doing good deeds®	

(continued)

## Appendix (continued)

Variables	Items/questions	Statistical coding
	Serving citizens would give me a good feeling even if no one paid me for it I am prepared to make enormous sacrifices for the good of society	
Age in years	What year were you born?	The year of birth was subsequently transformed into the approximate age by subtracting the year of birth from the year of this study, 2008.
Gender	What is your gender?	1 = <i>Female</i> 2 = <i>Male</i>
Level of education	What is the highest level of education you have achieved?	Responses coded from 1 (compulsory school) to 7 (PhD)
Hierarchical level	What is your position in your organization?	These responses are coded from 1 (apprenticeship) to 5 (top-level manager)

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### Notes

1. Taken separately, both subscales achieved good reliability: work tension ( $\alpha = .881$ ) and work exhaustion ( $\alpha = .898$ ).
2. To respond to the concern of a reviewer, we have tested the causality of the relationship between red tape, stress, and PSM. Results of a supplementary model of regression have shown no significant effect of stress on red tape. Therefore, within the context of this study, stress cannot to be considered as an antecedent of perceived red tape. Another model testing the effect of stress—alongside the other variables of this study—on PSM was developed. In this model, stress is included in the job demand variables (to be completely coherent). In the light of the regressions' results, two points should be mentioned. First, red tape and stress assessed as job demands are not significant predictors of PSM, while the later becomes significant when adding the job resources. Second, this model has a weaker explanatory power

( $R^2 = .155$ ) than the theoretically driven one tested in the present article ( $R^2 = .278$ ). In the light of these supplementary analyses we can consider that the model tested in this study is theoretically relevant and supported by the empirical results.

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