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Article

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MANAGEMENT | RESEARCH ARTICLE

Does psychological work environment matter? Relationship between psychological climate reflecting individual perception of work environment and stress among public servants

Vadym Mozgovoy^{1*}

Abstract: This study examines how individual perceptions of the work environment reflecting the psychological climate could influence the stress felt by public servants. This study adopts a transactional perspective to argue that valuation of the work environment and the job itself influences the perception of potential stressors and hypothesizes the relationship between the self-engagement psychological climate, stress, and intention to stay in public service. The proposed hypotheses are validated through a cross-sectional survey of 332 public servants in Switzerland. First, the study finds that role clarity, contribution, and supportive management characterize the psychological climate of public servants. Second, the results of the multiple regression analysis indicate that the psychological climate reduces the felt stress with the highest impact of the role clarity. Third, mediation analysis indicates that the psychological climate mediates the relationship between intention to stay and stress. These findings suggest an important theoretical role for the work environment perception in alleviating stress. In practice, findings imply that public



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Dr. Vadym Mozgovoy obtained his PhD in Public Administration from the University of Lausanne, Switzerland, in 2021. He developed his PhD thesis as Swiss National Science Foundation (SNSF) research assistant at Swiss Graduate School of Public Administration (IDHEAP). The thesis by Dr. Vadym Mozgovoy is called “Physiolitics at the Workplace: Longitudinal Evaluation of Organizational Effects at Swiss Public Administrations”. He received the Best Paper Award at the Swiss Conference on Data Science the 2019. He also received the Best Doctoral Student Conference Paper Award at the Public and Nonprofit (PNP) Division of the Academy of Management (AOM) in 2021. He holds a BSc in Business Administration from the University of Geneva. He finished a MSc program in Statistics with a methodological Master thesis at the University of Geneva in 2017. Previously, he worked as a Junior Statistician in the context of Biostatistics and Epidemiology in an advisory firm providing consultancy to multinationals in Geneva from 2013 to 2016. Vadym Mozgovoy can be contacted at: mozgovoy.vadym@gmail.com

PUBLIC INTEREST STATEMENT

This study investigates the relationship between the psychological climate reflecting the individual perception of work environment and stress among public servants, as well as their intention to stay to address the problem of reducing excessive stress that undermines the quality of public service delivery. Findings from a survey of 332 Swiss public servants from multiple organizations show that a higher psychological climate reduces stress particularly well for officials willing to continue their career. This study points to the importance of creating a work environment that provides public officials with clear roles, supportive management that allows flexibility, and significant contribution to the achievement of public goals. However, self-expression, challenge, and recognition do not characterize the psychological climate among public servants, which may be due to the importance of public service motivation. The findings of this research imply that long-term career opportunities may also reduce excessive stress among public servants.

managers can foster a higher psychological climate by setting clear organizational roles and predictable task norms, as well as by providing opportunities for career development.

Subjects: Stress and Emotion in the Workplace; public management; Employment Relations

Keywords: psychological climate; public management; stress; work environment

1. Introduction

The area of psychological stress is attracting growing attention in the public management domain due to the severity of the consequences that excessive stress could entail among individual public servants. Stress is increasing among front-line public servants and government officials worldwide (Boxall & Purcell, 2016), including European countries, such as the UK (Shaoul, 2011, p. 49) and Switzerland (Giauque et al., 2012). While stress results in accidents and injuries among public servants (Condrey & Perry, 2005) and a variety of individual health problems (Cooper & Campbell, 2017; Folkman, 2012), it also triggers mental health problems, such as anxiety and burnout (Lee, 2016). In particular, excessive stress reduces engagement (Breugh, 2020) and leads to high absenteeism and turnover rates (Liu et al., 2014; Noesgaard & Hansen, 2017). The consequences of psychological stress come at a particularly high cost in public services compared to the private sector. Although stress limits individual productivity in a given organization (Cooper, 2018), it results in lower quality public service delivery to citizens (Burke, 2020), which could indirectly affect the entire nation. These risks underscore the importance of advancing understanding excessive stress in public management.

The current study aims to broaden our knowledge of psychological stress by examining the PC as a stress antecedent from a transactional perspective among public servants. Few researchers have addressed the issue of individual perceptions of the work environment, despite their theoretical importance in understanding psychological stress and well-being in organizations. Individual perceptions of the work environment are defined as a general psychological climate (PC), a concept developed using the example of the United States Navy as a public service domain (Jones & James, 1979). In particular, the organizational behavior literature has expanded on the Transactional Stress Model (TMS) approach to demonstrate that a higher PC could contribute to organizational well-being (James & James, 1989). However, the influence of PC on stress remains only implicitly assumed, despite the fact that individual perceptions are critical to understanding behaviors in organizations.

The PC remains underexplored in different organizational settings, including public services. Furthermore, little research has focused on the different domains of the PC in the public management field. In particular, research has emphasized the unique challenges specific to the work environment in the public management domain (Steen & Schott, 2017). This importance attributed to the work environment makes the transactional stress theory lens particularly relevant for studying the links between PC and stress in public service.

To our knowledge, this is the first empirical study to examine how PC influences stress among public servants from a transactional perspective. It does so through a quantitative study, drawing on a unique dataset collected in the Swiss public service in 2019. This study advances the understanding of the self-engagement PC as a stress antecedent reflecting the perceived work environment by examining (1) the characteristics of the self-engagement PC, (2) the effects of the PC on stress, and (3) the effect of intention to stay on stress mediated by the PC. This work contributes to existing knowledge by providing empirical evidence that positive perception of the work environment significantly reduces psychological stress among public servants, particularly among those who intend to continue their career in public service.

2. Literature review

2.1. Transactional model of stress

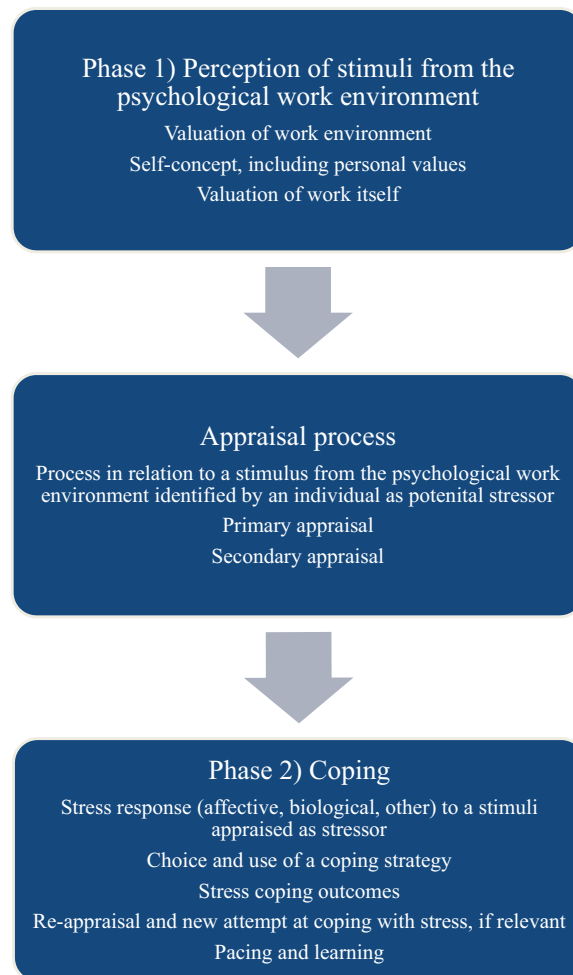
Excessive stress that leads to negative consequences for both individuals and organizations builds up as a result of overarousal that is subjective in nature. An arousal is defined as the capacity that individuals have at their disposal to perform tasks following an inverted U-shaped function, according to the early conceptualization in the Yerkes-Dodson law of arousal (Gino, 2016; Teigen, 2016; Yerkes & Dodson, 1908), more recent studies on arousal (Fazey & Hardy, 1988; Hardy & Parfitt, 1991; Vitasari et al., 2011), and the cognitive activation theory of stress (CATS) (Rossi et al., 2017; Ursin & Eriksen, 2010). While mid-arousal optimizes performance, excessive arousal is associated with excessive stress. Theories showing the U-shaped pattern of subjective arousal underpinning stress suggest the importance of understanding how excessive stress can build up for individuals.

The existing public management literature draws on several theories to explain stress among individual employees. These include transactional stress theory (Codo, 2014), the job demands—job resources model (Bakker, 2015; Giauque et al., 2012), the effort—reward imbalance in the work model (Ryu, 2016), and the relational stress model (Davis et al., 2020). The theory underpinning the transactional model of stress and coping (TMS) (Biggs et al., 2018; Lazarus & Folkman, 2015) is one of the few that accounts for individual perceptions by emphasizing psychological stress subjectivity. Additionally, theoretical perspectives on stress and coping provided by TMS have been dominant in the literature for several decades (Biggs et al., 2018; Lazarus & Folkman, 2015; Mitchell et al., 2019). Therefore, this lens is particularly relevant to examine stress while taking into account individual perceptions.

Subjectivity to psychological stress is the main tenet of TMS. From the TMS perspective, felt stress is defined as “the feelings of being under pressure which can be articulated by the individual” (Cooper, 2018, p. 410). TSM frames stress as a subjective reaction during a given stress episode. First, TMS stipulates that people perceive the same stimuli differently due to interactions between personal factors, such as self-concept, and the environment. Second, personal valuation plays a central role in stress and coping from a transactional perspective. Individuals evaluate the entities, events, and contexts in which they occur from the perspective of their impact on personal well-being, which is always future-oriented (Biggs et al., 2018; Lazarus & Folkman, 2015). Therefore, the personal valuation is important to understand stress as a state contrary to personal well-being. Therefore, the literature on TMS supports the idea of evaluating the work itself and its environment as essential to understanding stress.

The overall TMS framework suggests that each given stress episode spans three stages: (1) evaluation of the work environment, (2) stress outcome, and (3) coping (Biggs et al., 2018; Lazarus & Folkman, 2015). In stage 1 of TMS, the workers evaluate the work itself, as well as the psychological work environment (Figure 1). Stress and coping in a given stress episode involve two stages. At stage 2 of TMS, employees feel the stress results as a subjective reaction to stimuli. TMS suggests that stress emerges from “the relationship between the person and the environment that is appraised as personally significant and as taxing or exceeding resources for coping” (Folkman, 2013, p. 123). The ongoing processes of primary and secondary appraisals are based on the demands associated with specific stimuli that have been appraised as dangerous and the resources under one’s control to address these demands. In this second stage, an employee evaluates a potential stimulus emerging from the environment as a stressor and experiences stress outcomes. At stage 3 of the TMS, the employees engage in coping and re-appraisal. The third stage includes the implementation of coping strategies to overcome stress. TSM states that people choose stress coping strategies only once they have identified a dangerous stressor (Biggs et al., 2018; Lazarus & Folkman, 2015). Finally, it involves the reappraisal of a situation based on the coping results, learning, and pacing.

Figure 1. Three stages of stress and coping process.



The explanation of dangerous stimuli is important to understand stress in the work environment, and self-regulation of behavior theory (SRBT) contextualizing TSM in the work environment is particularly suitable to understand the nature of dangerous stressors. According to SRBT, stress is defined as “the condition that exists when something is interfering with movement toward desired goals or away from anti-goals” (Carver & Scheier, 2012, p. 214). This theory connects the constructs of stress, coping, and goal achievement in a work environment (Mitchell et al., 2019). The SRBT posits that work-related goals (e.g., project deadlines and career development milestones) can stimulate workers to engage in necessary behaviors to achieve them or to adapt their behaviors to remain goal-oriented (Carver & Scheier, 2012; Carver & Vargas, 2011). The SRBT also advances the idea that coping is a behavioral adaptation triggered by stress; the latter, in turn, occurs in response to excessive demands that impede the achievement of episodic or continuous goals of employees. Therefore, SRBT argues that impediments to achieving work-related goals represent a dangerous stressor for employees, and influences stress outcomes.

Given the distinct character of stress episodes that span several stages at a time (Lazarus & Folkman, 2015) and their succession over time, one might ask whether PC influences stress, whether stress influences the self-engagement PC in another direction, and when this influence might occur. Research evidence shows that previously felt stress leads to greater stress during future stress episodes (Armstrong & Taylor, 2017), meaning that higher past stress increases future stress levels. Therefore, it could reasonably be argued that felt stress influences PC.

However, previous stress is likely to influence the perception of the work environment and deteriorate self-engagement PC before the next stress episode.

2.2. Psychological climate

Individual workers have different psychological perceptions of the work environment. The attributes of the physical work environment include work processes, structures, events, physical location, materials, equipment, and other objects used during work and interpreted by employees individually (Ashkanasy & Dorris, 2017; James & James, 1989). Furthermore, the heterogeneity of job positions and roles in organizations limits the shared experiences of individuals in the work environment. Therefore, the literature has developed the concept of general PC to indicate individual perceptions of the psychological work environment as distinct from the physical work environment (James & James, 1989). It refers to general PC as a higher-level construct with multiple dimensions comprising a set of perceptual variables that assess the meaning individual workers attach to the work environment (Brown & Leigh, 1996; James & James, 1989).

A vast body of literature on applied social and organizational psychology has examined the ways in which different forms of PC reinforce the links between attitudes, behaviors, and performance, according to a meta-analytical review (Parker et al., 2003). Despite its subjectivity, PC influences attitudes, behaviors, and performance in organizations (Ashkanasy & Dorris, 2017; James & James, 1989; James et al., 2008). In particular, research argues that PC is strongly associated with psychological well-being of employees (James et al., 2008; Parker et al., 2003). Workers with high PC are more likely to invest more effort in accomplishing tasks (Baltes, 2001; Baltes et al., 2009; James et al., 2008), adapt to organizational change better (Martin et al., 2005), have lower turnover intentions (Jung et al., 2017), and thrive in a competitive workplace environment (Spurk & Hirschi, 2018). Furthermore, research suggests that different climate dimensions may lead to different outcomes (James et al., 2008; Parker et al., 2003). This calls for further research on PCs with different focus and in different settings, starting with private and public services.

Research on the general PC of public servants is emerging. For example, an exploratory study in the US public service examined a PC measure comprising four domains, namely (1) role stress and lack of harmony, (2) challenge and autonomy, (3) leadership support and facilitation, and (4) social environment characteristics associated with commitment, and found that their association strength varied across different public servant cohorts (Hassan & Rohrbaugh, 2011). Another empirical study found that the psychological effectiveness climate and turnover intention in Korean central government agencies were related (Jung et al., 2017). A recent study showed that a psychologically safe climate mediates the relationship between ethical climate and whistleblowing (Potipiroon & Wongpreedee, 2020). However, more research is needed on PCs with different focus.

2.3. Hypothesis development

The self-engagement PC could be a particularly relevant indicator of the meaning of the psychological work environment and an antecedent of felt stress for public servants, and this study develops hypothesis about its relationship with stress. This study focuses on self-engagement PC, which contributes to motivating and involving employees at work while indirectly stimulating their performance (Brown & Leigh, 1996). The PC with a self-engagement focus is defined as the “factors influencing employees’ tendencies to engage themselves completely in their work or distance themselves psychologically from it” (Brown & Leigh, 1996, p. 359). This climate is based on influential research on personal (dis)engagement in work, which involves taking work as a means of (1) expressing a self-concept and (2) achieving superior performance (Kahn, 1990; Stangor et al., 2014). The latter implies that self-engaged individuals view work as an opportunity to express their self-concept and perform at a higher level. Consequently, individual workers could be psychologically close to their job (a low level of PC focused on self-engagement) or distant from their job (a high level of PC focused on self-engagement). Although PC represents individual perception of work environment, it is not clear whether it reduces stress.

First, this study hypothesizes the relationship between PC and stress, drawing on the transactional perspective. According to TMS, each stress episode starts with the valuation of the work itself and the psychological work environment, while stimuli deemed personally significant are those that positively affect long-term well-being (Biggs et al., 2018; Lazarus & Folkman, 2015). The organizational behavior literature conceptualizing PC argues that general perception of personal significance associated with one's work improves organizational well-being (James & James, 1989). Further research demonstrated that if an individual perceives the psychological work environment as personally significant, it brings positive emotions (James et al., 2008; Parker et al., 2003). In particular, jobs with greater personal significance produce primarily positive effects, such as happiness and satisfaction in the organizational context (Biggs et al., 2018; James & James, 1989; Kozusznik et al., 2015). Therefore, an individual with a more positive perception of work environment would be less likely to perceive personally significant stimuli that emerge from it as dangerous.

On the contrary, the literature suggests that a more negatively perceived work environment increases stress. Employees evaluate a stimulus emerging from their work environment as a potential stressor, if that stimulus threatens long-term well-being and, therefore, becomes a dangerous stimulus (Biggs et al., 2018; Lazarus & Folkman, 2015). For instance, work environment may increase stress, when individuals perceive that they pursue a despised career or do a deeply repugnant job (European Agency for Safety and Health at Work, 2017). If a more positive perception of work environment reduces stress and a more negative perception leads to its increase, then individual perceptions are also likely to influence stress. Therefore, it is plausible that a higher self-engagement PC should lead to lower stress during a given stress episode.

Hypothesis 1 (H1): A higher PC significantly and negatively influences perceived stress among public servants.

Next, this study developed a hypothesis on the individual dimensions of climate. The self-engagement PC comprises two domains that reflect higher-order factors of psychological safety and meaningfulness, encompassing three dimensions each (Brown & Leigh, 1996). The PC construct focusing on self-engagement was developed and validated in a range of public medical and private business organizations, making it relevant to the public management domain. A study conducted in the context of information technology services (Kataria et al., 2019) confirmed the reliability of the psychological self-engagement climate measure, its two higher-order constructs, and six underlying dimensions.

First, psychological safety refers to the extent to which employees feel free to express themselves without fear of negative repercussions that affect their status, career, or self-image. The psychological safety domain of PC includes three dimensions: supportive management, role clarity, and self-expression (Brown & Leigh, 1996). First, supportive management refers to the extent to which the leader exercises control over how employees accomplish tasks in the workplace; close supervision is likely to create a weak PC, whereas permitted flexibility strengthens it. Second, role clarity refers to the degree of clarity with which workers perceive their organizational roles, with clearer expectations and more consistently predictable task norms, resulting in a stronger climate. Third, self-expression represents the extent to which workers have freedom of self-expression; permitting greater expressions of individuality in work roles strengthens the climate further.

The three dimensions belonging to the psychological safety domain, supportive management, role clarity, and self-expression, have previously been examined in a private context and have proven to be valid (Brown & Leigh, 1996). However, individual perceptions of public servants can differ from those of employees in the private sector due to the distinctive characteristics of public human resource management that traditionally provides substantial employment security (Boxall &

Purcell, 2016). One might also speculate that public servants pursue mainly public values prioritizing societal interest (Gross et al., 2018; Jørgensen & Bozeman, 2007; Knies et al., 2018; Miao et al., 2019), and their societal values could alter the perception of organizational membership safety. However, psychological safety is conceptualized as an individual-level construct that characterizes workers' perception of the work environment, disregarding differences in organizational context. Consequently, this study builds on H1 to test whether individual dimensions of psychological safety influence stress in public service in a manner similar to that in private business.

Hypothesis 1a (H1a): Supportive management significantly and negatively influences perceived stress among public servants.

Hypothesis 1b (H1b): The role clarity significantly and negatively influences perceived stress among public servants.

Hypothesis 1c (H1c): Self-expression significantly and negatively influences perceived stress among public servants.

Second, psychological meaningfulness is defined as the reciprocity that employees feel in terms of the return in exchange for their contribution to work. The psychological meaningfulness domain of the PC includes three dimensions: contribution, recognition, and challenge (Brown & Leigh, 1996). Contribution refers to the degree to which employees perceive that they significantly affect organizational processes and outcomes and enhances employee identification with their work roles. Recognition refers to the degree to which individuals believe that an organization appreciates their efforts, with higher recognition indicating a higher level of climate. Challenge refers to the extent to which work requires drawing on different physical, cognitive, and emotional resources, where more challenging work results in greater personal growth and strengthens the climate.

Similarly to psychological safety, the three dimensions belonging to the psychological meaningfulness domain—contribution, recognition, and challenge—have previously been developed in a private context (Brown & Leigh, 1996). Individual perceptions of meaningfulness could differ in the public and private sector due to the importance of public values deeply held by public servants, as opposed to the individualistic values dominating in the private sector (Gross et al., 2018; Jørgensen & Bozeman, 2007; Knies et al., 2018; Miao et al., 2019). However, the psychological meaningfulness reflects individual workers' perception of work environment of individual workers rather than the organizational level construct. Accordingly, this study extended H1 testing and hypothesized that individual dimensions of psychological meaningfulness influence felt stress in public service in a manner similar to in private business, too.

Hypothesis 1d (H1d): Contribution significantly and negatively influences perceived stress among public servants.

Hypothesis 1e (H1e): Recognition significantly and negatively influences perceived stress among public servants.

Hypothesis 1f (H1f): Challenge significantly and negatively influences perceived stress among public servants.

Next, this study examined the self-engagement climate as a mediator in the relationship between intention to stay as a major job attitude and felt stress. Job attitudes represent positive or negative evaluations of work in a given organization (Armstrong & Taylor, 2017). Several studies

have examined the relationship between the psychological self-engagement and attitudes in private settings. Data from medical and business organizations have shown that a higher psychological self-engagement climate has both motivating and involving effects on individual employees because it moderates individual job involvement and efforts and indirectly increases work performance (Brown & Leigh, 1996). Previous research examined the psychological self-engagement climate in sports team environment perception in high-performance groups (Brown & Leigh, 1996; Kataria et al., 2019; Spink et al., 2013). Research has also shown that the global psychological self-engagement climate mediates the relationship between human resource management practices and in private information technology services (Kataria et al., 2019), while such practices influence job attitudes among employees (Robbins & Judge, 2019).

Research demonstrating that PC mediates the relationship between attitudes (Brown & Leigh, 1996; Kataria et al., 2019; Spink et al., 2013), human resource management practices that influence attitudes (Kataria et al., 2019), and behavioral outcomes confirms the importance of examining its role in the relationship between job attitude, PC, and stress. Although there are a variety of job attitudes examined in the organizational behavior literature (Robbins & Judge, 2019), the intention to stay is an individual job attitude that is defined as an employee's conscious and deliberate willingness to stay with the organization (Oades et al., 2017; Tett & Meyer, 1993). The intention to stay is conceptually distinct from the intention to leave an organization, which is another important attitude that has been examined in turnover studies in the public management literature (Jeon & Robertson, 2013).

Positive evaluations of work itself influence stress and the coping process according to the literature on TMS and organizational behavior (Biggs et al., 2018; Lazarus & Folkman, 2015). On the one hand, individuals evaluate work before appraising the psychological work environment from which potentially stressful stimuli can emerge, so a higher intention to stay is likely to increase PC. On the other hand, this also means that the job choice chronologically precedes experience in the work environment where a given public service is delivered to citizens. Therefore, the valuation of a job in the public service precedes the valuation of potential stressors in the work environment. Therefore, it is plausible to hypothesize that a higher intention to stay resulting from a positive job valuation and higher psychological climate would reduce stress.

Hypothesis 2 (H2): Public servants with higher intentions to stay are more likely to perceive a higher PC, leading to lower stress.

To summarize, this study hypothesized the effect of PC on stress from a transactional theory perspective (Figure 2). It also hypothesizes that PC mediated the relationship between intention to stay and felt stress. The following section presents methods used for testing the hypothesis included in the research model.

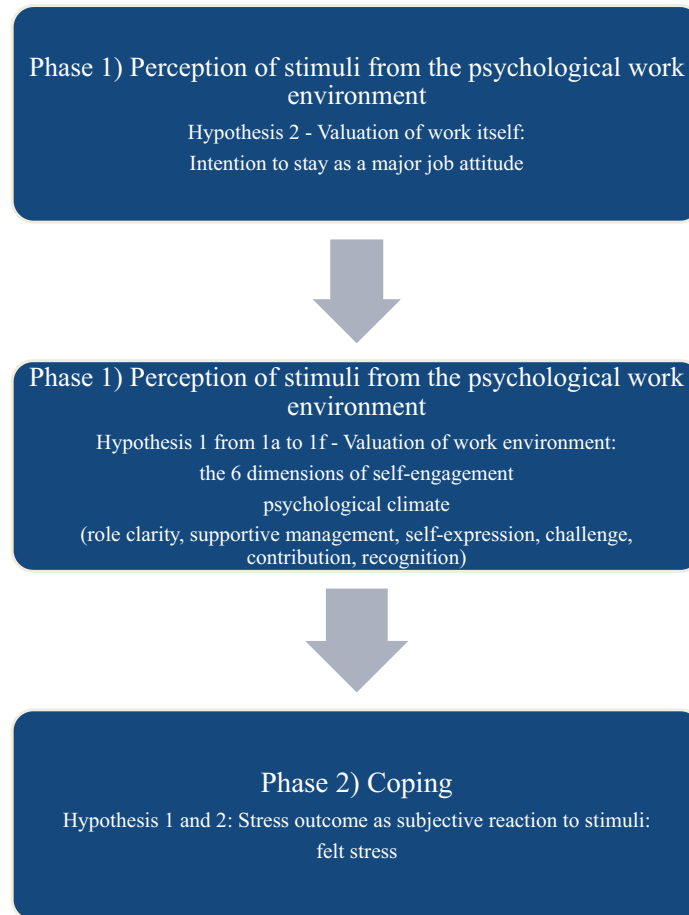
3. Methodology

3.1. Data collection and sample description

This study used a monomethod cross-sectional quantitative research design and dataset from Swiss public service. It adopted an individual level of analysis to understand the psychological processes that workers experience (Jones & James, 1979) and used measures from the current literature supported by additional tests of validity and reliability. A standardized questionnaire was administered online to collect data.

This study drew upon data on individual Swiss public servants for testing the hypothesized relationship. Research has confirmed that work, as opposed to personal life factors, predominantly contributes to the stress that Swiss public servants may feel (Giauque et al., 2012). The need to

Figure 2. Research model.



better understand stress among Swiss public servants has also been recognized (Breugh et al., 2018). Six experts, either from the Swiss public service or who specialize in French, helped pre-test the questionnaires developed in English. A professional English–French translator located in a major French-speaking canton in Switzerland, a professor of a public university in Switzerland, a professor of a university in French who delivers courses to Swiss public servants, and three doctoral students studying public administration helped refine the items in the French version.

Data were collected anonymously and confidentially among Swiss public servants with the help of the University of Lausanne. The research team approached some public organizations located in the French-speaking cantons of Switzerland and invited their workers to participate in the study in direct contact with the University of Lausanne. An email containing a link to the survey and a research ethics statement was shared internally within the targeted organizations in June 2019. Data collection was carried out between June and October 2019; two additional reminders were sent during the survey period on 9 July 2019 and 24 September 2019. Participants who met the inclusion criteria (i.e., employment in the Swiss public service) continued to the survey stage.

The responses to the questionnaires were collected using Google Forms and aggregated in a spreadsheet in which individual public servants could not be identified. To maintain confidentiality and anonymity, participating public organizations were not asked to report back to the research team and indicate their willingness to distribute questionnaires among public servants currently employed in Swiss public organizations. In the same vein, participating public servants

were not asked to indicate the unit in which they worked or report their participation in their departmental heads.

The initial dataset contained 356 responses. Questionnaires that did not meet basic quality standards (Couper, 2000) were excluded. Exclusion criteria were as follows: nonresponse to survey questions, presence of inconsistent or invalid variables, incomplete responses, and responses from individuals with no intention of staying in the public service due to their upcoming retirement. The nonresponse rate was 0.446%. Next, internal consistency and confirmatory factor analysis (CFA) tests were performed before calculating the k-means, accounting for 356 observations. Inconsistent and invalid variables were identified and removed before imputation, as they needed to account for the correct data configuration. The *knn*-imputation with $k = 10$ was performed to treat non-responses in continuous variables. Five responses had incomplete information on control variables and were deleted because partially missing demographic characteristics could not be imputed and used in the regression. One response represented a unique category that could not be estimated with sufficient power. Further regression analysis showed that this data point created a high leverage. This observation was deleted. At this stage, the dataset comprised 350 questionnaires. Finally, employees approaching retirement age ($n = 7$) and those who did not answer this question ($n = 11$) were excluded from the sample.

The final dataset consisted of observations from 332 public servants. Their average age was 45.5 years and 43% of the respondents were male. As many as 62% of the respondents had university degrees. On average, public servants were probably willing to stay in public service over time, although 12% of the respondents were unwilling to continue working in the Swiss public service. Table 1 provides a list of control variables for the final dataset.

Table 2 provides the key descriptive statistics and correlations among the variables. On average, the respondents felt moderate stress. Although the medians were close to the means, this variable showed a low skewness to the left. This means that more public servants experience high and very high levels of stress compared to those with low stress.

Respondents perceived a higher self-engagement PC, that is, 74% on average, with variations across single self-engagement PC dimensions. Among the six dimensions, public servants perceived the lowest level of role clarity (61%) and the highest challenge level (80%). Among the validated and reliable measures that characterize PC self-engagement among public servants, the coefficient of variation ($CV = \text{Mean}/SD$) of supportive management was 1.56 times greater than that of role clarity. The CV of contribution was 1.47 times higher in its turn. Both supportive management and contribution had much more level variability relative to their means compared to role clarity, which had a greater standard deviation.

Individual Pearson correlation coefficients among the variables (Table 2) were also examined. Analysis showed that they were all statistically different from zero at the significance level of 0.001%. Stress was strongly and negatively associated with self-engagement PC. The strength of the negative associations between stress and the single self-engagement PC dimensions varied from strong (challenge, contribution) to very strong (role clarity, other dimensions). Among the control variables, education was moderately and negatively correlated with stress. There was a moderate positive association between intention to stay and PC and a strong negative association between intention to stay and stress. There was a weak negative linear relationship between self-engagement PC and gender, indicating that women felt greater stress.

3.2. Measurement

3.2.1. Stress

Felt stress was a first-order construct. Stress was measured using a short 5-item questionnaire (Hoover, 2014). The 5-point Likert scale was anchored by 1 = *strongly disagree* and 5 = *strongly agree*.

Table 1. Control variables

Variable	Level	Label	Number of respondents	Proportion of respondents
Intention to stay	0	Retire soon	Excluded from retained sample	
	1	Certainly not	4	1%
	2	Probably not	6	2%
	3	Perhaps	29	9%
	4	Yes, probably	113	34%
	5	Certainly yes	180	54%
Gender	1	Male	143	43%
	2	Female	189	57%
Age	1	17–36 years	67	20%
	2	37–43 years	59	10%
	3	44–50 years	77	14%
	4	51–57 years	93	20%
	5	58–71 years	36	10%
Public Service Tenure	1	Less than 1 year	13	4%
(Experience length in Public Service)	2	1–2 years	19	6%
	3	3–5 years	36	11%
	4	6–10 years	68	20%
	5	11–15 years	62	19%
	6	More than 15 years	134	40%
Education	1	Secondary education	76	23%
	2	Highest professional education	51	15%
	3	University education	205	62%
Service domain	1	Active work, referring to direct and indirect service delivery activity in the value chain	201	61%
(Workload according to the public service domain)	2	Sedentary work, referring to support activity in the value chain	131	39%

agree, where 5 indicated low stress (Table 3). The scores were averaged and the scale was reversed to facilitate interpretation. This questionnaire was developed for stress self-assessment by Carole Spiers Group, a leading practitioner in occupational stress management (International Stress Management Association [ISMA], 2020). While other validated stress measurement instruments are available, a short practitioner test was used for felt stress. The number of questions was minimized to reduce the cognitive burnout of the participants and the time required to complete the survey to maximize the number of responses. Finally, short single item measures were previously used to measure stress in public service (Gross et al., 2018). This practice confirms the relevance of short practitioner test applications in the public management field.

Cronbach's alpha and CFA were used to confirm the validity and reliability of this measure. The bootstrapped standardized Cronbach alpha coefficients were calculated to analyze the internal

Table 2. Correlations

Label	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. The felt stress	2.86	1.29	1	-0.72	-0.77	-0.64	-0.52	-0.75	-0.72	-0.77	0.05	-0.26	0.04	-0.44	0.28
2. SupM	5.56	1.41	-0.72	1	0.79	0.82	0.65	0.73	0.87	0.94	-0.28	0.13	-0.15	0.21	-0.43
3. Role	4.30	1.7	-0.77	0.79	1	0.73	0.51	0.68	0.81	0.9	-0.11	0.01	-0.13	0.25	-0.36
4. Contri	5.44	1.46	-0.64	0.82	0.73	1	0.83	0.67	0.95	0.93	0.03	0.08	-0.18	0.34	-0.58
5. Chlg	5.60	1.49	-0.52	0.65	0.51	0.83	1	0.52	0.74	0.73	0.06	0.33	-0.17	0.23	-0.68
6. SelfExp	4.45	1.73	-0.75	0.73	0.68	0.67	0.52	1	0.68	0.75	-0.1	-0.04	-0.22	0.21	-0.33
7. Recogn	5.25	1.58	-0.72	0.87	0.81	0.95	0.74	0.68	1	0.96	-0.08	0.1	-0.22	0.29	-0.48
8. GlobalPC	5.17	1.6	-0.77	0.94	0.9	0.93	0.73	0.75	0.96	1	-0.12	0.08	-0.17	0.29	-0.5
9. Age	45.50	11.5	0.05	-0.28	-0.11	0.03	0.06	-0.1	-0.08	-0.12	1	-0.19	0.09	0.29	-0.39
10. Educ	2.39	0.84	-0.26	0.13	0.01	0.08	0.33	-0.04	0.1	0.08	-0.19	1	-0.24	0.05	-0.36
11. ServD	1.39	0.49	0.04	-0.15	-0.13	-0.18	-0.17	-0.22	-0.22	-0.17	0.09	-0.24	1	-0.06	-0.04
12. IntStay	4.38	0.82	-0.44	0.21	0.25	0.34	0.23	0.21	0.29	0.29	0.29	0.05	-0.06	1	-0.27
13. Gender	1.57	0.50	0.28	-0.43	-0.36	-0.58	-0.68	-0.33	-0.48	-0.5	-0.39	-0.36	-0.04	-0.27	1

Sample size = 332. PC indicates psychological climate. SupM indicates supportive management. Role indicates role clarity. Contri indicates contribution. Chlg indicates challenge. SelfExp indicates self-expression. Recogn indicates recognition. GlobalPC indicates Global psychological climate. Age indicates age. Educ indicates education. ServD indicates Service domain. IntStay indicates intention to stay.

Table 3. Questionnaires for felt stress

Number	The felt stress Dimensions	Question
1	The felt stress	I spend such long hours at work that my relationships outside work are suffering.
2	The felt stress	I am so busy that I find it increasingly difficult to concentrate on the work in front of me.
3	The felt stress	I always get a good night's sleep without worrying about work.
4	The felt stress	In recent times, I have found that it is becoming difficult for me to control my emotions.
5	The felt stress	I feel tired during the day.

consistency of the measures for the stress constructs. The reliability measure reached acceptable consistency levels when the Cronbach alphas were above the threshold of 0.7 (Cronbach's $\alpha = .75$). The CFA showed that the felt stress questionnaire was a valid measure ($\chi^2/df = 1.24$; RMSEA = 0.03; NNFI = 0.99; CFI = 1.00; SRMR = 0.02).

3.2.2. Psychological climate

The construct of the self-engagement PC was measured using a 21-item questionnaire with a 7-point Likert-style scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), where 7 indicated a strong climate (Brown & Leigh, 1996). Scales for the global PC and its single dimensions were used. To confirm the validity and reliability of this measure, the self-engagement PC and each of its single dimensions were analyzed using Cronbach's alpha and a CFA was performed. To analyze the internal consistency of the self-engagement PC measures, the bootstrapped Cronbach's alpha coefficient was calculated at 1,000 replicates. The global self-engagement PC measure comprised two higher-order joint constructs of psychological safety and meaningfulness with six subscales. Only dimensions that were highly consistent and reached at least the 0.7 Cronbach alpha cutoff level were retained. The CFA indicated the validity of the retained self-engagement PC measures. The CFA results showed acceptable item loadings for the three retained dimensions (supportive management = .61, role clarity = .44, and contribution = .68) and confirmed the validity of the self-engagement PC measure ($\chi^2/df = 2.29$; RMSEA = 0.06; NNFI = 0.95; CFI = 0.96; SRMR = 0.06). Three out of six dimensions, namely supportive management, contribution and role clarity, were retained (supportive management $\alpha = 0.85$, acceptable; role clarity $\alpha = 0.70$, acceptable; contribution $\alpha = 0.86$, acceptable; efficiency $\alpha = 0.70$, acceptable, but conflicting with the CFA results; recognition $\alpha = 0.65$, not acceptable, negative variance problem in the CFA results; challenge $\alpha = 0.49$, not acceptable).

Additional multicollinearity tests were conducted, given the high correlations among the single dimensions (R of 83% to 96%, Table 2). The results of the Studentized Breusch-Pagan test (BP = 4.73, $df = 3$, p -value = 0.19) and the variance inflation factor (VIF) for each dimension between 1.90 and 2.31 (multiple R -squared: 0.15) indicated that the variables had a low impact of collinearity in the regression model, predicting stress.

3.2.3. Intention to stay

A single item was used to measure intention to stay: "Do you wish to continue your career in the public sector in the long term?" The item used a 5-point Likert-style scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), where 5 indicated a high intention to work in public service in the long term. This item was adapted from a three-item questionnaire on the propensity to leave (Lyons, 1971). This questionnaire has been widely used in organizational studies to measure the intention to stay with or leave an organization (Chew & Chan, 2008; Creswell & Plano Clark, 2011; Sayin et al., 2019). Two other items from the original questionnaire (Lyons, 1971) were excluded

because they were specific to female nurses (items relating to the possibility of not working and returning to work after events such as pregnancy). Although the reliability of a single item measure may be challenged, this measure is used frequently in public administration research to analyze psychological constructs such as job satisfaction and other attitudes (Wanous et al., 1997). Another control variable, namely public service tenure, indicated length of experience in public service (Miao et al., 2019) and was used to test the concurrent validity of the measure for intention to stay.

Concurrent validity was analyzed using an independent Pearson's chi-square test and Spearman's rank correlation rho using answers to the question on the actual length of public service employment. Independent Pearson's Chi-square test with Yates' continuity correction between intention to stay and tenure (actual length of public service in years) was significant at 1% (chi-squared = 18.84, $df = 1$), showing that the number of employees who certainly intended to continue working in the public service in the long term differed significantly between groups with varying durations of service. Spearman's rank correlation rho for ranked data among individual public servants was 0.32 ($S = 4136725$, $p < 0.01\%$), showing a moderate and statistically significant relationship. These results showed that the intention to stay in the workplace was higher among public servants with longer service durations, confirming the validity of the 1-item measure retained for the intention to stay.

3.2.4. Control variables

This study introduced other control variables. A set of covariates based on prior studies was included to account for confounders and reduce the possibility of obtaining spurious results (Table 1). The demographic variables that describe the sample are relatively representative of the Swiss public service. These include age, gender, and education, which have been widely used in studies at the individual level (Breugh et al., 2018; Giaque et al., 2012; Gross et al., 2018). Education was measured using a single question anchored in Swiss educational categories. Workload, relationships at work, and career opportunities exemplified contextual stressors, which put a strain on workers (Cooper & Campbell, 2017). The control variable "public service domain" classified the type of workload as sedentary or active (sedentary and active public service) based on self-reported aggregate occupations. Another aforementioned control variable, namely the tenure of public service, indicated the length of experience in public service (Miao et al., 2019) and was used to test the validity of the intention to stay.

3.3. Data analysis

This study used multiple regression analysis parametrized in SPSS and R statistical software. For the supplementary analysis, this study used instrumental variable regression and mediation analysis. The relationship between the self-engagement PC and stress, with the self-engagement PC as a dependent variable, was examined. Felt stress was used as an outcome variable to represent the predicted factor. The global self-engagement PC measure by single dimensions (supportive management, contribution, and role clarity) was replaced for joint model re-estimation, with each retained dimension serving as an explanatory variable. The covariates included the education, sex, age, and public service domains.

The data was analyzed in six steps. First, the dataset was prepared by composing a database with continuous variables, cleaning the data, re-leveling variables, and performing the *knn* imputation of the categorical response. Second, Chronbach's Alpha and Confirmatory Factor Analysis (CFA) was performed, respecting the cutoff criteria with "lavaan", an R software package for Structural Equation Modelling (SEM). This package estimates a wide variety of multivariate statistical models, including path analysis, confirmatory factor analysis, structural equation modeling, and growth curve models. The following cutoff criteria were applied: Chronbach's $\alpha \geq 0.70$; CFA respects the cutoff criteria: CFA respects the cutoff criteria: $Chi-sq/df < 3$, $AGFI > 0.90$, $RMSEA < 0.10$, $NNFI > 0.95$, $CFI > 0.95$, $SRMR < 0.08$.

The third step involved performing a supplementary analysis to test the causality directions between PC and stress. It was conducted using a reciprocal causal model to rule out alternative explanation threats; instrumental variables included intention to stay, gender, and education. Non-recursive models

have already been used in the public management domain (Fernandez & Moldogaziev, 2013; Zhang et al., 2020). Weak Instrument and Sargan tests with “ivreg” drew on an Instrumental Variable Regression (Instrumental Variable equation 1: PC is an endogenous regressor explaining felt stress; Gender and Intention to Stay are instruments for PC; Instrumental Variable equation 2: Felt stress is an endogenous regressor that explains PC; education is an instrument for Felt Stress). Two statistical tests were used for instrumental diagnostics. First, an *F*-test on the instrument’s weakness, representing the weak instrument test, was used. Second, the Sargan test of over-identifying restrictions was used because instruments exceeded endogenous regressors. Instrumental diagnostics were performed using Applied Econometrics with the R package with the command “ivreg”. They fit a nonrecursive model with the second-stage least squares (2 SLS) method for simultaneous equations using the ‘reg3’ command in STATA. SEM was used to analyze the non-recursive model.

Fourth, descriptive statistics were calculated. As the fifth step, the Latent Variable Modeling was performed with the “lavaan” package, whereas PC was treated as a factor. A latent variable model refers to a statistical model relating an observed variable set to a latent variable set. Four models represented PC: (1) Supportive Management—one level factor; (2) Contribution—one level factor; (3) Role Clarity—one level factor; (4) Supportive Management, Contribution, and Role Clarity as a two-level factor presenting PC.

As the sixth final step, generalized linear modeling was used for the supplementary analysis. The study used a parameterized mediation model in PROCESS v 3.3 macro in SPSS 25 for regression analysis (Hayes, 2018). Such an analysis is used to quantify the extent to which a variable transmits a change from a cause to its effect. The PROCESS macro for SPSS is the most advanced macro for mediation models and has advantages over SEM. It enables bootstrap confidence intervals using functions to address heteroskedasticity and study specific indirect effects in addition to the total indirect effect. Percentile bootstrap confidence intervals based on 50,000 replicates were used to infer the effects and percentages of the mediated effects. A mediational model with a non-parametric percentile bootstrap using the Huber-White function (Hayes, 2018) was applied. Variable standardization was not used due to the relatively low skewness and to facilitate the interpretation of the result in the process model (Hayes, 2018). Mediation models investigated the impact of intention to stay through PC on Felt Stress, where PC was treated as explicit variable averaging out across items. Four models represented PC: (1) average across Supportive Management; (2) average across Contribution; (3) average across Role Clarity; (4) average across support management, contribution, and role clarity as a two-level factor that presents PC.

4. Results

4.1. PC dimensions in public service

In the first step, reliability and validity analyzes of single self-engagement PC measures were performed. The results revealed that only the two single dimensions of supportive management and role clarity, reflecting psychological safety, and the single dimension of contribution, reflecting psychological meaningfulness, characterized the self-engagement PC among Swiss public servants. In contrast, the results revealed that the single dimensions of self-expression (the psychological safety domain), challenge, and recognition (the psychological significance domain) were not relevant to the PC description among public servants.

4.2. Main analysis

Hypothesis 1 stated that a higher PC would significantly and negatively influence perceived stress among public servants. First, SEM indicated that joint and single PC dimensions retained relate to stress after accounting for education covariate. Results showed that role clarity, supportive management, and contribution reduced stress (Table 4). Psychological safety domain, including the dimensions of supportive management and role clarity, influenced felt stress by reducing it to the greater extent than psychological meaningfulness. What is noticeable here is the greatest importance of role clarity.

Table 4. Structural equation model of PC and stress with covariate and robust standard errors

Measures/ Response ~ Regressors (estim; s.e)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	PC = Role + SupM + Contri	PC = Role + SupM	PC = Role + Contri	PC = SupM + Contri	PC = Role	PC = SupM	PC = Contri
The felt stress~	-						
PC	-0.50*** (0.08)	-0.54*** (0.09)	-0.57*** (0.11)	-0.36*** (0.07)	-0.44*** (0.07)	-0.23*** (0.05)	-0.17** (0.05)
Educ	-0.12* (0.06)	-0.12* (0.06)	-0.13* (0.06)	-0.12* (0.06)	-0.14* (0.06)	-0.12 (0.06)	-0.14* (0.06)
ChiSq/df	1.78	1.39	1.66	1.84	1.32	1.11	2.02
AGFI	0.91	0.94	0.93	0.92	0.96	0.96	0.93
RMSEA	0.05	0.03	0.05	0.05	0.03	0.02	0.06
NNFI	0.94	0.97	0.96	0.95	0.98	0.99	0.95
CFI	0.95	0.99	0.97	0.96	0.99	0.99	0.96
SRMR	0.06	0.04	0.05	0.06	0.04	0.04	0.05
Model Fit:	Accept	Accept	Accept	Accept	Accept	Accept	Accept

Sample size = 332. F-Stat indicates high joint significance of regressors. PC indicates psychological climate. Notes. SupM indicates supportive management. Role indicates role clarity. Contri indicates contribution. GlobalPC indicates Global psychological climate. Codes for t-test significance levels: "****" indicates 0.001; "***" indicates 0.01; "**" indicates 0.05; "*" indicates 0.1.

Second, multiple regression analysis was performed. Research models 1 to 5 that tested the hypothesized relationship between PC and stress included gender, education, service domain, and age covariates. Education exercised a weak, but statistically significant negative influence on stress at 90% confidence level (Table 5).

The main analysis of Model 1 revealed that global and joint PC have a moderate negative effect on stress, after accounting for covariates. Model 2 also showed that joint PC including three dimensions characterizing PC moderately reduced stress among public servants. Further analysis of Model 2 indicated that only role clarity reduced stress negatively and significantly with a moderate effect. Therefore, Model 2 with joint dimensions showed that PC reduced stress mainly through greater psychological safety. The study results showed that a higher global PC moderately decreased public servants' perceived stress. Therefore, H1 was fully supported.

Hypotheses 1a to 1 f stated that single dimensions of higher PC (H1a: Supportive management; H1b: role clarity; H1c: Self-expression; H1d: Contribution; H1e: Recognition; H1f: Challenge) significantly and negatively influence perceived stress among public servants (Table 5). Single dimensions of self-expression, recognition, and challenge did not characterize PC in public service according to statistical analysis, so H1c, H1e, and H1f were not supported. Models 3, 4, and 5 with single PC dimensions demonstrated that contribution (psychological meaningfulness), role clarity and supportive management (psychological safety) also reduced stress with 99% confidence. Therefore, H1a, H1b, and H1d were fully supported.

Hypothesis 2 stated that public servants with higher intentions to stay were more likely to perceive a higher PC, leading to lower stress. The results of the mediation analysis showed that the intention to stay reinforced the perception of PC, which contributed to the reduction of stress (Table 6). The results show a significant direct negative relationship between intention to stay and felt stress. The results also show a significant positive relationship between intention

Table 5. Multiple regression model coefficients for global, joint, single PC dimensions and stress with covariates

Direct effects/ Consequent	Model 1— Global PC	Model 2— Joint PC	Model 3— Role Clarity	Model 4— Supportive Management	Model 5— Contribution
Goodness of fit value	R ² = 0.14	R ² = 0.17	R ² = 0.16	R ² = 0.11	R ² = 0.07
Goodness of fit statistics	F(5, 326) = 10.74, p < 0.001	F(7, 324) = 9.19, p < 0.001	F(5, 326) = 12.6, p < 0.001	F(5, 326) = 7.87, p < 0.001	F(5, 326) = 5.03, p < 0.001
Global PC	−0.35***				
Role Clarity		−0.28***	−0.29***		
Supportive Management		−0.05		−0.19***	
Contribution		0.04			−0.15***
Covariate (Gender)	0.01	0.03	0.03	0.03	0.03
Covariate (Education)	−0.09	−0.09*	−0.09*	−0.09	−0.10*
Covariate (Service domain)	0.01	0.01	−0.01	−0.01	−0.02
Covariate (Age)	0.01	0.01	0.02	−0.01	0.03
Constant	0.17	0.18	0.16	0.22	0.15

Sample size = 332. F-Stat indicates high joint significance of regressors. PC indicates psychological climate. Codes for t-test significance levels: "****" indicates 0.001; "***" indicates 0.01; "**" indicates 0.05; "." indicates 0.1.

Table 6. Mediation model coefficients for joint, single PC dimensions and stress with covariates

Direct effects/ Consequent	Role Clarity		Supportive Management		Contribution		Felt stress	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Goodness of fit value								
Goodness of fit statistics								
Direct effects								
Antecedent X (intention to stay)	0.26*	0.11	0.25**	0.09	0.37***	0.1	-0.13**	0.04
Mediator 1 (Joint PC, role clarity)							-0.20***	0.04
Mediator 2 (Joint PC, supportive management)							-0.10*	0.05
Mediator 3 (Joint PC, contribution)							0.03	0.06
Covariate (gender)	-0.16	0.16	-0.30**	0.11	-0.39**	0.13	-0.08	0.09
Covariate (Age)	-0.02	0	-0.15 (BS)	0.05	0.07	0.06	0.04	0.04
Covariate (Education)	-0.03	0.09	-0.10	0.07	-0.04	0.08	0.09	0.06
Covariate (Service domain)	0.07	0.07	0.11 (BS)	0.05	0.02	0.06	0.02	0.05
Constant	3.34***	0.54	5.28***	0.41	4.37***	0.37	4.33***	0.37

Sample size = 332. F-Stat indicates high joint significance of regressors. SE indicates Standard Error. PC indicates psychological climate. Codes for t-test significance levels: "****" indicates 0.001; "****" indicates 0.01; "****" indicates 0.05; "****" indicates 0.1.

to stay and PC. Furthermore, greater psychological safety expressed through role clarity and supportive management reduces stress, while intention to stay does not reduce felt stress through increasing contribution. Therefore, the intention to stay also has both direct and indirect negative indirect effects on stress. As hypothesized, employees with higher levels of intention to stay felt less stress because of more positive perception of psychological work environment. Therefore, H2 was fully supported.

Further analysis revealed that the relationship between self-engagement PC and stress varied across different levels of intention to stay. In the joint model, only role clarity steadily decreased felt stress exclusively for those who were probably or certainly willing to stay in the public service. So, the analysis revealed that the relationship and magnitude of the effect between PC and stress change based on the intention to stay in the public service.

4.3. Supplementary analysis

A supplementary analysis was performed to test the direction of the causal link between self-engagement PC and stress; more detailed statistical output is available on request. As described earlier, the intention to stay instrumental variables, gender, and education were used to test the conceptual model developed for hypothesis testing regarding the direction of the effect and, accordingly, to rule out alternative explanations. On the one hand, research has found that men have higher self-esteem (Kearney-Cooke, 1999; Robbins & Judge, 2019) and score higher than women on self-concept measures of power, talent, and invulnerability (Stake, 2016). Therefore, previous research suggests that male public servants are more likely than female public servants to perceive themselves as capable of dealing with potential stressors.

On the other hand, education, an instrumental variable associated with felt stress, is not directly associated with the self-engagement PC. Higher education is a source of knowledge for workers. In line with TMS, a perceptual filter through which individuals see the workplace determines the stimuli that can pass through as potential stressors (Biggs et al., 2018; Lazarus & Folkman, 2015). Knowledge acquired through education represents a resource to cope with potential stressors specific to a given job, and a higher level of education decreases the number of stimuli with which a public servant cannot cope using the resources under their control. Therefore, public servants with higher educational levels experience less stress.

Instrumental variables matched the validity criteria. Based on the results for reciprocal causation test between PC and stress to test the robustness of the model, the hypothesis of weak instruments for instrumental variables was rejected (F-statistics = 4.26 for education; F-statistics = 9.93, intention to stay and gender). The Sargan test for intention to stay and gender showed a statistically nonsignificant value of 0.42, offering insufficient grounds for rejecting the null hypothesis of statistical validity for those instruments.

Consequently, additional tests were performed. The results did not reveal statistical evidence to confirm a bidirectional causal link between self-engagement PC and stress. The main model explaining felt stress through education, intention to stay, and gender mediated by self-engagement PC had appropriate goodness of fit. Instrumental variables significantly influenced the dependent variables, as hypothesized. Therefore, the supplementary analysis confirms the unidirectional relationship and shows that the felt stress does not influence PC simultaneously within the same stress episode.

5. Discussion

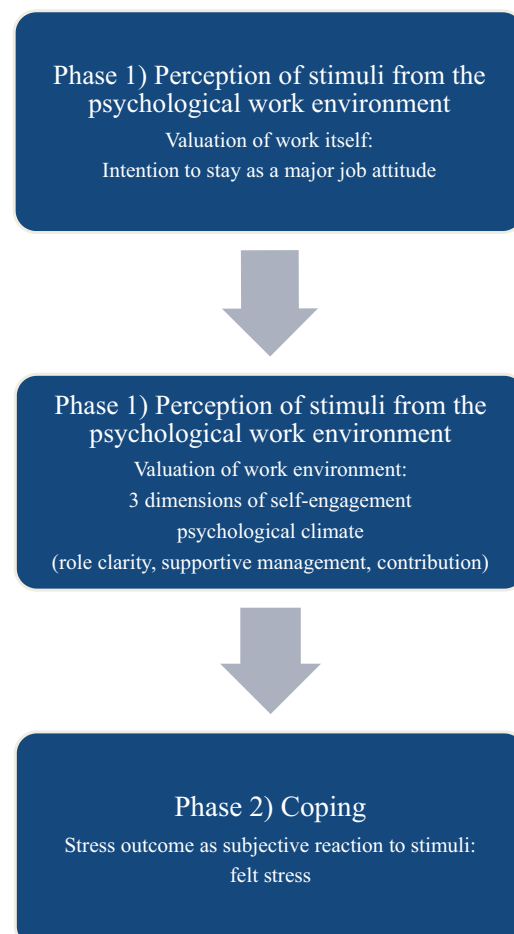
The first major finding is that different PC dimensions characterize it across private and public settings, while only the PC dimensions of role clarity, supportive management, and contribution characterize it in public service (Figure 3). Furthermore, additional data analysis confirmed that PC has a unidirectional influence on stress. The importance of public values as an integral part of the self-concept of public servants might contribute to explaining why only some dimensions of self-

engagement PC developed and validated in private settings characterize it in the public sector. Organizational behavior research argues that self-engagement represents a way to express self-concept (Stangor et al., 2014). The public management literature emphasizes the importance of public values for public servants, as opposed to individualistic values that are more widely spread in the private sector (Gross et al., 2018; Jørgensen & Bozeman, 2007; Knies et al., 2018; Miao et al., 2019). Public management literature adopts this line of thinking through the recognition that public values are closely associated with public service motivation, with a focus on their impact on society (Jørgensen & Bozeman, 2007; Knies et al., 2018; Leisink et al., 2018; Ritz et al., 2016). Therefore, when public values play an important role for individual workers, they are likely to represent a core aspect of self-concept for public servants.

One might also speculate that long-term employment in a public organization that provides an opportunity to follow public values could be seen as a personally significant act of self-engagement. If an individual has already expressed his self-concept as underpinned by public values when pursuing a career as a public servant, then the opportunity to express that self-concept in the work environment on a daily basis might lose its incremental value. Therefore, the PC dimensions focused on self-concept expression might be less relevant in public organizations than in private organizations, in which collectively held public values do not play an important role.

The second major finding is that work environment influences stress among public servants, as results show that the self-engagement PC reduces stress with a particularly high impact of role

Figure 3. Results of the hypothesis testing.



clarity (Figure 3). These findings also substantiate previous findings in public management studies that have frequently examined “red tape” referring to excessive formal rules as a stressor related to work (Cooke et al., 2018; Giauque et al., 2012; Liu et al., 2014). So, this study implies that high role clarity implies a clear system of goals for an employee, as well as work situations in which these goals could be predictably achieved.

Our findings are consistent with previous studies on organizational behavior, showing that role clarity leads to individual behavioral outcomes (Brown & Leigh, 1996; Kataria et al., 2019; Spink et al., 2013). The results showing the strongest effect of role clarity on stress reduction are consistent with SRBT (Mitchell et al., 2019). The clarity, consistency, and predictability of the role expectations of work norms are associated with a high level of role clarity, in contrast to the lack of clarity of the role expectations, their inconsistency, or unpredictability in work situations. The importance of achieving stress goals and coping at work could explain why greater role clarity had the strongest negative effect on stress. According to this theory, employees only adapt their behavior to become goal-oriented and engage in stress coping if they perceive a certain distance to an achievable and desired target (Carver & Scheier, 2012; Carver & Vargas, 2011). Consequently, one might argue that high role clarity reduces stress to the greatest extent among other PC dimensions because it facilitates both episodic and continuous goal achievement for employees.

The third major finding shows that self-engagement PC mediates the negative effect of intention to stay in public service on felt stress (Figure 3). Data analysis revealed that self-engagement PC mediates the negative effect of a higher intention to stay, leading to a lower stress felt by public servants, thus confirming the importance of examining intention to stay in public management (Jeon & Robertson, 2013). This happens mainly among public servants willing to continue their current careers. Our findings showing that individuals for whom public services find a greater personal significance would be more likely to remain public servants, have a higher self-engagement PC and feel less stressed, are consistent with the literature on PC stating that more personally significant job increases psychological well-being (Biggs et al., 2018; James & James, 1989; Kozusznik et al., 2015). The constructs of self-engagement PC and stress are not likely to be related to public servants who are undecided about their long-term career choices or do not intend to stay, while the effect of self-engagement PC on stress held mainly for those who were willing to stay in the public service in the long term.

5.1. Theoretical implications

To summarize the findings discussed above, this study hypothesizing and confirming the impact of perceived work environment on stress makes an original contribution to the fields of public management and organizational behavior. This study contributes significantly to the literature in the public management domain by addressing the need to understand the characteristics of self-engagement in the public service context and its relationship with stress. First, it demonstrates that self-engagement PC among public servants is characterized by role clarity, supportive management, and contribution. Second, it shows that PC reduces stress among public servants, particularly with greater role clarity. This study also contributes to the literature on organizational behavior by addressing the need to understand whether the relationship between job attitudes and stress is mediated by PC and demonstrating that higher self-engagement PC mediates the relationship between intention to stay and stress.

Our findings focus on front-line workers in the public sector. However, these findings could be extended to government officials. This approach exploring the PC among other possible stressors is generalizable to a variety of work environments beyond public and other services.

5.2. Managerial implications

From a practitioner's point of view, these findings suggest the need to account for the psychological work environment in the interest of psychological well-being in organizations. Since a higher intention to stay enhances the favorable effect of PC on stress, it is also important to develop

human resource management practices that support a long-term career. Furthermore, establishing clear roles for individuals that are willing to continue their career in an organization, allowing them to make a meaningful contribution to common goals, and ensure their support. Reinforcing these measures through public human resource management can reduce stress among individuals, especially those who wish to continue their public service careers.

Organizations should also develop understanding of the psychological climate through its monitoring. Relevant data can be collected anonymously and confidentially through an annual survey on the self-engagement PC and felt stress. Such a survey could help describe current psychological well-being and identifying improvement areas. As a part of such efforts, PC and Felt Stress indicators could be collected and analyzed over time and between different organizational units. Establishing such stress factors and their level could also support evaluating the effectiveness of stress prevention and management measures for both practitioners and policy makers.

Finally, it is recommended to implement an employee assistance program (EAP) to provide stress management training to public servants. EAPs, including those focused on stress coping support, have not been systematically offered in public service organizations so far (Csiernik et al., 2012; Mulvaney, 2014). Instead, public managers typically provide discretionary benefits to individual employees (Condrey & Perry, 2005) or implement public sector occupation-specific measures (Burke & Pignata, 2020) in stress reduction areas. However, empirical research showed that public servants working in organizations providing stress management-focused EAPs were more committed to public service organizations than those who do not provide such employee services, using the example of the US public administration (Mulvaney, 2014). Consequently, the literature confirms that there is a potential for developing coping measures in the public service.

The main topic of such an EAP should be stress coping. An EAP is typically characterized by its main topic, delivery mode, and length (Roche et al., 2019; Society for Human Resource Management, 2021). Regarding duration, such interventions could have variable shorter or longer time periods, depending on individual needs. Regarding the delivery mode, training practices could have various delivery modes. Most importantly, the implementation of the EAP program to cope with stress should be confidential and anonymous, similar to other EAPs, to improve organizational well-being.

If introduced in the public service context, these suggested practical measures supporting career development, PC monitoring, and introduction of EAP would allow alleviating psychological stress. It would lead to the reduction of psychological stress among individual front-line public servants and government officials. Finally, it would allow enhancing the quality of public service delivery to citizens and supporting national welfare as a whole.

5.3. Limitations and future research directions

Some limitations should be considered before setting out the future research agenda. This research has certain limitations in terms of national scope, association with an ongoing public management reform, short practitioner-oriented measurement, and monomethod use. First, the results may be representative of the Swiss public service, excluding the communal, cantonal and federal governments, especially in terms of the single dimensions characterizing the self-engagement PC and its magnitude of effect on felt stress. Second, the findings may be associated with the contemporary period in Switzerland, which is characterized by the ongoing new public management (NPM) reform (Ladner, 2018), while other stages of this reform may alter employment arrangements in the public service. Third, the use of short practitioner-oriented measures is one of the limitations, although it was offset by reliability and validity testing.

Finally, the common method variance bias was induced due to the implementation of the monomethod, specifically a cross-sectional survey research strategy, which warrants further caution regarding the generalizability of the findings from a methodological perspective. However, an online survey research strategy ensured anonymity among participating Swiss public servants,

which would have been breached during the research process in the case of data triangulation from different sources, longitudinal study or multimethod approach. Furthermore, a cross-sectional design allowed us to focus on the perception of work environment and the stress that occurs during the same stage of stress and coping, in line with the theoretical framework of the TSM. Therefore, the methodological choice of a monomethod cross-sectional survey conducted online allowed addressing the research question in the context of Swiss public service prioritizing safety and security of public servants, despite limitations.

6. Conclusions

This study shows that individual perception of work environment has an impact on stress. First, this study demonstrates that PC characteristics differ across organizational settings, while only the dimensions of role clarity, supportive management, and contribution characterize PC in a public service context. Second, this study found that a more positive individual perception of work environment makes public servants less stressed, because PC decreases felt stress with the greatest effect of role clarity. Third, the findings indicate that PC influences the relationship between job attitudes and stress, as individuals with higher intentions to stay in the public service have more positive work perceptions that, in turn, reduce stress. Despite its limitations, this research advances knowledge on the effect of the work environment on stress experienced by individuals and contributes to shaping the agenda for future studies.

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