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Article — Published Version

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Public Administration Review

Provided in Cooperation with:

John Wiley & Sons

Suggested Citation: Fleischer, Julia; Wanckel, Camilla (2023) : Creativity in policy capacity: Organizational and individual determinants, Public Administration Review, ISSN 1540-6210, Wiley, Hoboken, NJ, Vol. 84, Iss. 2, pp. 218-232, <https://doi.org/10.1111/puar.13676>

This Version is available at:

<https://hdl.handle.net/10419/294024>

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Creativity in policy capacity: Organizational and individual determinants

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Abstract

Creativity is a crucial part of policy capacity in governments. Existing studies on creative behavior in the public sector assess employees' openness to new ideas and creative solutions, and they confirm the relevance of organizational and individual determinants for pro-creativity attitudes. Yet we lack systemic evidence on the explicit level of work-related creativity among policy officials in government organizations. At the same time, novel technologies and particularly social networking services change the working environment of policy officials radically, alter organizational features, and may also yield crucial individual effects. Our study analyses "policy creativity" of policy officials in three European governments. We demonstrate the importance of organizational and individual features, including the stress triggered by using social networking services. Our study captures officials' creativity explicitly and adds to debates on creativity and innovation in the public sector as well as the micro-level foundations of the digital transformation in the public sector.

Evidence for Practice

- Policy officials bear distinct levels of policy creativity that are crucial for policy work, that is, how they develop and draft government policies.
- The organizational climate for innovation as well as individual public service motivation yield significant positive effects on policy creativity among government officials.
- The accelerated use of social networking services and the resulting social media stress, however, lower policy creativity significantly, thus using social media to interact and connect with others may also deteriorate policy creativity in government policy making.

INTRODUCTION

Creativity is crucial for innovative behavior at work (Amabile, 1983; Anderson et al., 2014). Government organizations are oftentimes not considered to offer much room for creativity and yet, creativity in policy work is crucial to skillfully identify information and cope with the variety of inputs at work, including political signals (cf. Blom-Hansen et al., 2021; Simon, 1947). Public policy scholars identified creativity as a core element of policy capacity—defined as skills and resources that individual officials require to perform policy-related tasks (Wu

et al., 2015)—especially in designing and evaluating policy alternatives (Considine et al., 2014; Howlett, 2015). Others discuss public officials' creativity as fundamental for their innovative behavior (Lapuenta & Suzuki, 2020a, 2020b).

Various organizational and individual features have been identified to explain why employees are more or less creative at work, in both private and public sector working environments. At the organizational level, studies show that an innovation climate has a strong effect on work-related creativity, including processes and resources for communicating new ideas as well as leaders who

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reward and recognize risk-taking and creativity (Baer et al., 2003). At the individual level, employees are more creative when they are intrinsically rather than extrinsically motivated to accomplish their tasks (Amabile et al., 1996). While the positive effects of intrinsic motivation for creativity have been thoroughly explored in the private sector (da Costa et al., 2015), the link between creativity and public sector motivation (PSM) received little attention. Despite their unique political environment, policy officials engaged in policy formulation have not been subject to studies linking PSM and creativity (cf. Blom-Hansen et al., 2021).

Moreover, being creative at work has changed radically with novel information and communication technologies (ICT) entering the workplace. Especially social media platforms and messenger services—social networking services (SNS)—are crucial for work-related creativity because they allow identifying and handling information and feedback in novel and faster ways. This is also relevant for policy officials engaged in policy formulation, which are in constant need for information and arguably innovative policy solutions (Dunleavy & Margetts, 2015; Maier et al., 2015). However, the current literature addressing such services inside governments focuses mostly on how governments use these tools to manage external interactions with citizens and stakeholders (Farazmand, 2012; Zavattaro, 2013; see also Knox, 2016), mostly in service delivery (Djerf-Pierre & Pierre, 2016; Silva et al., 2019). In contrast, the role of SNS for policy officials engaged in policy formulation has been mostly ignored—despite its importance for their creativity at work.

Therefore, our paper asks which organizational and individual features influence work-related creativity of policy officials, highlighting the relevance of changing working environments in the digital era, with a special emphasis on the role of social media in daily policy work. We argue that a greater innovation climate inside an organization and a stronger PSM increase policy officials' creativity in policy work. Following occupational psychology, however, we also expect that SNS trigger distinct stress that yields negative effects on their policy creativity (cf. Byron et al., 2010). For our empirical analysis, we fielded a survey among middle-ranking policy officials in three European central government organizations, namely Germany, Norway, and Italy, between June and October 2020. We employ linear regressions with country fixed effects and show that greater innovation climate and stronger PSM have a significant positive effect on policy creativity whereas social media stress decreases creativity in policy work significantly. These findings are also controlled for various organizational and individual features including the respondents' social media use for work.

The remainder of the paper is structured as follows. First, we present our theoretical argument on the relevance of organizational and individual features for creativity in policy work and theorize the explicit relevance of

social media stress. Afterwards, we present our empirical data and method. Our following empirical analysis reveals that policy officials may benefit from an organizational climate for innovation and greater PSM to be more creative in their policy work—yet the work-related use of social networking tools also diminishes their creativity. In our conclusion, we discuss these findings for the current debates on creativity and innovation in the public sector as well as on the digital transformation of the public sector, most notably for the micro-foundation of this fundamental change.

POLICY CREATIVITY IN A DIGITALIZED WORKING ENVIRONMENT

Policy creativity of ministry officials

Creativity at work is discussed in various literatures, following slightly different definitions (e.g., Amabile, 1983; Zeng et al., 2011). Most authors agree that job creativity is a process rather than a fixed outcome and aims to produce original, novel, and valuable products within a specific context (Mayer, 1999; Yeh, 2011). For policy officials engaged in policy formulation, producing their work, which is policy proposals for their political executives, means primarily collecting and assessing a wide range of information that is provided by various actors inside and outside of government as well as receiving, ascertaining, and forecasting political signals. They rarely engage in assessing “pre-ordained and well-defined alternatives” and instead face a variety of inputs, thus their work often-times is a “process of inventing, developing and fine-tuning” (Dryzek, 1983, pp. 345–346; see also Howlett, 2015; Wu et al., 2015, Xu et al., 2017). More recent research regards public sector officials' “receptiveness to new ideas and creative solutions” as a key part of their pro-innovation attitudes (Lapiente & Suzuki, 2020a). Following this literature, we define policy creativity as policy officials' ability to think divergently and to create new ways to handle policy problems when formulating government policy, drawing both on external signals, that is, their organizational environment, and their own skills and proficiencies.

Policy creativity is therefore an individual ability on behalf of policy officials that engage in policy work to generate creative policy solutions. Policy work inside ministerial departments can take many forms, it includes information processing and collaboration between different officials, oftentimes also with external actors such as organized interests or policy experts. Creative policies are not only deviant from the status quo but also offer new and innovative solutions to policy problems, disregard whether these problems are also new or recurring and old. Although policy creativity is therefore necessary for progress, especially bureaucratic organizations such as ministerial departments populated by policy officials are

often regarded as less suitable work contexts for promoting creativity—as they are built upon a formal hierarchy that assigns authority and resources and requires procedural conformity to safeguard predictability and coherence (cf. Simon, 1947; Weber, 1922).

Organizational climate for innovation and policy creativity

Individual job creativity is shaped by contextual and individual determinants, with organizational climate being the “most relevant contextual factor” in the public sector (Mutonyi et al., 2020, p. 620). An organization’s climate describes employees’ shared perceptions of practices, policies, and procedures, all of which serve as a signal for the kinds of activities and behaviors that are rewarded, supported, and expected within an organization (cf. Schneider, 1990). While some scholars refer to organizational climate as an objective property, the concept is mostly used to describe individual sensemaking processes of salient workplace stimuli, shared among organizational members. In contrast to the notion of organizational culture that encompasses the “cognitive cornerstone” of organizational structures, an organization’s climate refers to the manifestation of such belief-systems in the employees’ immediate environment—observable in practices such as management behavior, leadership style, and routines (Schneider et al., 2013).

Over time, behavioral research moved from a general conceptualization of organizational climate to addressing more specific forms, such as an organization’s climate for innovation. The significance of innovation climate for individual creativity is based on the assumption that organizations encouraging innovation and risk-taking, for example, by providing processes, incentives, and resources for the communication and evaluation of new ideas, increase their employees’ enjoyment of work and job engagement and, thus, creativity (Demircioglu & Berman, 2019; Grady, 1992). Similarly, actively involving policy officials in influencing work processes and protecting risk-takers are likely to promote the emergence of deviant ideas. Moreover, innovation climate is argued to strengthen predictability and goal clarity, which are both important prerequisites for motivation and performance, thus serving as a catalyst for innovative behavior (Jung, 2012). Indeed, higher levels of innovation climate were shown to be linked to job satisfaction, affective commitment, and creativity (Mutonyi et al., 2020). It is important to note that a “welcoming climate” seeks to encourage the proposition of new ideas, however, it does not require all leaders and subordinates to participate, and policy officials may take on various roles to support innovation processes (cf. Berman & Kim, 2010, p. 622). These existing findings on the relationship between an innovative organizational climate and the creativity of organizational members have been developed and

explored for public sector organizations engaged in both policy design and service delivery and thus it is reasonable to assume that policy officials working in ministerial departments experience similar organizational determinants to their individual creativity. Hence,

H1. Policy officials reporting higher levels of innovation climate in their organization hold greater policy creativity.

Public sector motivation and policy creativity

Studies also focus on individual attributes and attitudes that facilitate creative thinking and innovative behavior at work, including intrinsic motivation. Intrinsic motivation can originate from a variety of sources, such as interest, pleasure, the desire for self-realization, professional goals, values, or altruism. It is widely assumed that engagement in an activity for its own sake fosters creativity more than external pressure and rewards—because it raises energy levels, prosocial behavior, as well as determination and concentration, which are known to drive creative effort and achievement (Amabile et al., 2005; Perry-Smith & Shalley, 2003). Hence, “no amount of skill in the domain or in methods of creative thinking can compensate for a lack of intrinsic motivation to perform an activity” (Amabile, 1996, p. 7), and a lack of intrinsic motivation is argued to result in inferior or “closely sufficient” outcomes at work.

While the positive link between intrinsic motivation and creativity has been subject to extensive research in the private sector (da Costa et al., 2015), the effect of (public service) motivation on creativity has received comparatively less attention (cf. Jung et al., 2018).¹ Public service motivation refers to a “general, altruistic motivation to serve the interests of a community of people, a state, a nation or humankind” (Rainey & Steinbauer, 1999, p. 20) and encompasses compassion, self-sacrifice, commitment to public interest as well as attraction to policy making (Perry, 1996). These dimensions are carried by three types of motives (cf. Kim, 2004): Rational motives are based on public officials’ utility maximization, norm-based motives refer to them serving a public interest, and affective motives of public officials are linked to emotional foundations (Andersen & Kjeldsen, 2013; Brewer et al., 2000; Vandenabeele, 2008). Already in 1990, Perry and Wise emphasized that “committed employees are likely to engage in spontaneous, innovative behaviors on behalf of the organization” (Perry & Wise, 1990, p. 371). Most recently, Rafique et al. (2021) demonstrated how each of the abovementioned PSM dimensions, except for commitment to public interest, increased public servants’ psychological empowerment, which led to more innovative behavior (cf. Miao et al., 2018). Similarly, Jung et al. (2018) show in survey experiments that PSM significantly affects creativity, while also identifying crucial country differences. Hence,

H2. Policy officials with higher public service motivation hold greater policy creativity.

Social media stress and policy creativity

Lastly, studies in occupational psychology examine the effects of stress on job creativity. More generally, stress is generated due to the presence of an external condition, which individuals experience as a straining demand or “stressor” and to which they respond with coping mechanisms, resulting in psychological, behavioral, and physiological outcomes (Lazarus, 1966; McGrath, 1976). The majority of scholars follows distraction arousal theory, assuming a negative relationship between stress and creativity at work: Work stress reduces individuals’ cognitive capacities for information processing, maintaining focus, and concentration, thus lowering job creativity (Byron et al., 2010; Gaillard, 1993). Yet work stress may also yield positive outcomes, if individuals cope with it and thereby excel, learn, and earn achievement (Cavanaugh et al., 2000). However, even those individuals experiencing positive stress may at times face a level of work stress that is detrimental for their job creativity (Montani et al., 2020). These general associations between work stress and job creativity as well as their effects, for example, on turnover, have been validated also for public sector organizations (Kim, 2005; Baehler & Bryson, 2008; Noblet & Rodwell, 2008).

Over the past decade, scholarship turned to novel stressors at the workplace, emerging from the growing use of ICT, which activate “technostress” (Ragu-Nathan et al., 2008; Tarafdar et al., 2019; Weil & Rosen, 1997). These studies show that ICT use at work triggers several stressors, such as permanent connectivity, a technological determination of the workflow (see DeLone & McLean, 1992), constant technological adaptation, excessive multitasking (Bucher et al., 2013), or information and communication overload (see Karr-Wisniewski & Ying, 2010). The latter is also referred as “media stress,” which has been recently also studied for public sector organizations. The empirical evidence suggests that such stress emanates from public officials being exposed to an increasingly fragmented and “dramatized” media content (Klijn et al., 2016), with negative effects on their workflow and routines in policy formulation, and eventually the quality of public policy (Schillemans et al., 2019).

Many governments enable policy officials to use social media platforms and messenger tools to gather information and feedback but also receive political signals (Bink & Marsh, 2000; Jaussi & Randel, 2014; see Olszak et al., 2018). However, such services are also used for socializing and to establish and maintain interpersonal relationships (Hu et al., 2017). As these services combine digital means with media functions, the accelerated use of SNS generates “social media stress” at the workplace (Brooks, 2015; Brooks & Califf, 2017; Laumer & Maier, 2021; Maier et al., 2015; Stephens et al., 2017). The

occupational psychology literature shows the negative effects of SNS on health outcomes yet also stresses that the mere frequency of use is less important than how individuals perceive and cope with their individual use (van der Schuur et al., 2019). In line with the transactional theory of stress, according to which an individual’s perception of stress determines the impact of a given stressor rather than a certain stressor per se (Lazarus & Folkman, 1984), social media stress is a state in which policy officials feel strained, based on their own subjective perception that results from or is associated with their own use of these services. Because the state of stress may trigger anxiety, overreactions, and disruptions, it eventually reduces their capacities for information processing and maintaining focus and concentration (Gaillard, 1993). Hence, empirical studies show a negative relationship between stress and creativity: The stressful situation results in adopting simpler cognitive strategies to solve a task, thus fewer creative solutions emerge (Byron et al., 2010). Moreover, social media stress reduces creativity because it entails (perceived) frequent interruptions at work, which overload individuals (Baddeley, 2000; Courtney et al., 1998; Dietrich, 2004; Dreu et al., 2012). Following these studies, we assume that policy officials experience also social media stress as situations in which their individual use of SNS exceeds their own coping resources. As creativity in policy design refers to the exploration of various information sources and SNS may enable an easy and instantaneous access to and exchange of information, their use is functionally meaningful—but may yield detrimental effects if policy officials experience it as stressful, eventually straining their resources and thus diminishing or even obstructing their creativity at work. Therefore,

H3. Policy officials with lower social media stress hold greater policy creativity.

DATA AND METHOD

Sample

We fielded a survey targeting ministry officials across all ministerial departments in three European countries, Germany, Italy, and Norway. The bureaucracy at the federal or central level focuses primarily on policy formulation, whereas delegated agencies as well as regional and local levels are mostly engaged in policy implementation and service delivery. All three countries are characterized by a merit-based bureaucracy (Lapuente & Suzuki, 2020a), yet express different administrative traditions, with Norway belonging to a Nordic tradition, Germany expressing a Germanic tradition and Italy following a Southern European tradition (Pollitt & Bouckaert, 2017). Moreover, the three countries represent the lower, near-average, and upper end of the scale for politicization, that is, the

extent to which recruitment and promotion is independent from political superiors—a key predictor of public sector managers' receptiveness to new ideas and creative solutions (Lapuente & Suzuki, 2020a, pp. 461–462).

To identify our survey population, we relied on organizational charts, ministry websites, and social networks and invited 3701 officeholders. Overall, 726 respondents answered our questionnaire, yielding a response rate of 19.6 percent, which is similar to other cross-country surveys among public sector managers (see Silva & Jalali, 2020; Steen & Weske, 2016). A total of 373 respondents answered all questions relevant to this study, resulting in a representative sample in terms of age, gender, and rank. Respondents are on average 53.9 years old, with 60.1 percent being male and 39.9 percent being female. The majority of participants are section heads (i.e., the smallest ministerial unit) or policy officials inside these sections, amounting to approx. 79.9 percent. These office holders are entrusted with substantive policy work or closely supervising, refining, and coordinating their units' tasks, also setting priorities, and contributing to overall strategic goals. The rest are heads of (sub-)directorates and hence in a more managerial role as they are engaged in overseeing and delegating policy. The respondents are approximately evenly distributed across the five government policy areas of state services (22.3 percent), economic affairs (25.5 percent), welfare (24.1 percent), foreign affairs (11.8 percent), and environment (16.4 percent).

Measures

To measure our dependent variable, policy creativity, we drew on existing scales of creative self-efficacy (Bandura, 1986; Tierney & Farmer, 2002) and adapted them to the work environment of policy officials engaged in policy design. On the one hand, we follow public policy research that stresses creativity as part of policy capacity and suggests measuring the extent to which policy officials build and evaluate different policy alternatives (Fellegi, 1996; Howlett, 2015; Riddell, 1998). On the other hand, we take into account recent research on public managers' pro-innovation attitudes and social value preferences (Lapuente & Suzuki, 2020a; Steen & Weske, 2016) and bring in a self-comparison perspective. Therefore, our creativity measure takes into account two items assessing the respondents' agreement on a five-point Likert scale, starting with "For my work in policy and program development, I feel confident that I can," they subsequently read "come up with new approaches to policy problems" and "identify policy alternatives that others may not think of." Item reliability was tested by applying the Spearman–Brown formula, which was shown to yield more accurate results for two-item scales than the commonly applied Cronbach's alpha (Eisinga et al., 2013). With a coefficient of .75 the Spearman–Brown test indicated an adequate

reliability. To balance our fully self-referring item, we calculated the difference between the item's response and its standard deviation across all respondents from the same country and rank, before constructing a multiplicative index of the self- and other-oriented item. This variable was then standardized as a z-score and ranges from approx. –2.7 to approx. 2.3 (see Table 1).

Our independent variables are likewise assessed with existing scales from the empirical literature. Organizational innovation climate was assessed in three items from a larger multifactor scale (Scott & Bruce, 1994) that has been applied and confirmed for the public sector context (Campbell et al., 2014; see Table A2); Cronbach's α is .85. Public sector motivation was measured with a five-item scale, asking respondents how much they agree with statements assessing self-sacrifice, public interest, social justice, and compassion (see Table A2). The five-item measure used in previous studies (Brewer et al., 2000; Moynihan & Pandey, 2010; Naff & Crum, 1999) is much shorter than the original 24-item scale of Perry (1996), allowing us to reduce survey fatigue in the understudied, yet hard-to-access area of digitalization dynamics in ministerial bureaucracies. With a coefficient of .69, Cronbach's α was slightly below the widely referenced threshold of .7. We therefore confirmed convergent validity by conducting a series of confirmatory factor analyses (CFAs), which yielded good model fit values.² Social media stress was gauged with a four-item scale that is particularly suitable and applicable to SNS (Cho et al., 2011), and we supplemented this scale with a fifth item (see Table A2); the Cronbach's α for the original four-item scale is .89, while for the full five-item scale that we use, it is .90.

We control for several features that have proven to be relevant for policy capacity (see Table 1). This includes to account for the policy jurisdictions of the parent organization that are likely to shape organizational norms, values, and attitudes. Given our overall sample size, we opted for distinguishing between five government policy areas and grouped ministerial departments into these categories (see, for a similar approach, Martin & Vanberg, 2020): State services, economic affairs, welfare, foreign affairs, and environment. We further control for our respondents' rank, which shapes a policy official's task environment and therefore their engagement in information gathering. In addition, existing studies show that the impact of media stress on bureaucrats' work is greater at lower hierarchical levels (Schillemans et al., 2019) and one may assume similar dynamics for social media stress. Moreover, we control for age and gender, which are frequently discussed to shape creativity at work, men report significantly greater pro-creativity attitudes than women and younger public sector officials also show more pro-creativity attitudes than their older colleagues (Lapuente & Suzuki, 2020b). Besides, we control for respondents' education, which has been recently accentuated as a crucial factor in understanding pro-creativity

TABLE 1 Descriptive statistics and intercorrelations of the study variables (N = 373).

	M	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1 Policy creativity	3.84	0.68	-2.68	2.28	(.74)														
2 Org. innovation climate	3.62	0.80	1.00	5.00	0.17**	(.85)													
3 Public service motivation	4.13	0.45	2.20	5.00	0.24***	0.18***	(.69)												
4 Social media stress	2.60	0.88	1.00	5.00	-0.17**	-0.03	-0.05	(.90)											
5 Rank	1.93	0.62	0.00	3.00	0.00	0.02	-0.06	-0.09											
6 Age	53.95	7.75	28.00	71.00	-0.01	-0.05	-0.08	0.13*	-0.31***										
7 Gender (1 = female)	0.40	0.49	0.00	1.00	-0.04	-0.18***	0.07	-0.08	0.10*	-0.21***									
8 Education (1 = law)	0.19	0.39	0.00	1.00	-0.01	0.10	0.05	0.00	-0.10	-0.02	0.02								
9 Social media use	2.88	1.14	1.00	5.00	0.07	-0.02	0.11*	0.01	-0.03	-0.12*	0.03	0.00							
10 Main working location (1 = home office)	0.44	0.50	0.00	1.00	0.06	0.07	0.02	0.03	0.21***	-0.14**	0.09	-0.10*	0.03						
11 Govt. area (1 = state services)	0.22	0.42	0.00	1.00	-0.06	0.01	0.08	-0.07	-0.09	0.05	0.01	0.04	-0.09	-0.19***					
12 Govt. area (1 = economic affairs)	0.26	0.44	0.00	1.00	-0.07	0.03	0.01	0.04	0.04	0.03	-0.06	-0.01	0.02	0.21***	-0.31***				
13 Govt. area (1 = welfare)	0.24	0.43	0.00	1.00	0.10*	0.01	0.00	-0.01	-0.01	-0.01	0.09	-0.01	0.08	-0.01	-0.30***	-0.33***			
14 Govt. area (1 = foreign affairs)	0.12	0.32	0.00	1.00	0.04	-0.01	0.01	0.00	-0.04	-0.09	-0.01	0.00	0.09	-0.01	-0.20***	-0.21***	-0.21***		
15 Govt. area (1 = environment)	0.16	0.37	0.00	1.00	-0.01	-0.04	-0.12*	0.05	0.11*	0.00	-0.04	-0.02	-0.10	-0.03	-0.24***	-0.26***	-0.25***	-0.16**	

Note: Responses on the latent variables were provided on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree, except for social media use where 1 = never; 5 = very often). Correlations of policy creativity are based on standardized z-scores. Values in parentheses are alpha coefficients.

*p < .05; **p < .01; ***p < .001.

attitudes across civil service systems, that is, those with a law degree express significantly lower pro-creativity attitudes (Lapuenta & Suzuki, 2020a, 2020b). Lastly, we captured respondents' primary working location: Given the rapid changes in the working environment and accelerated use of digital tools due to the Covid-19 pandemic, we account for the fact that respondents who work primarily from the office may experience less of such changes (except a reduction of coworkers on site) than those working primarily from home.

Common method variance

To address concerns of common method variance (CMV) and reduce the risk of priming or context effects, the questionnaire design included a spatial and psychological separation between the predictor and criterion variables as well as a randomized display pattern. Thus, our dependent variable was in no instance queried immediately before or after any of the predictor variables. Our randomization included predictors to be measured either at the beginning or end of the questionnaire, for example, half of the respondents received the social media stress scale before and the other half after assessing their creativity. After a Harman's single-factor test on our latent study variables revealed that no single factor accounted for more than 35 percent of variance, we also applied the more sophisticated common latent factor (CLF) technique. We thus compared the results of our main latent model to another model in which the items loaded on both their respective theoretical construct and a CLF. All factor loadings remained significant at the $p < .001$ level and showed no difference greater than .20. Moreover, a chi-squared difference yielded an insignificant result, indicating that common source bias is not a serious issue in our data.

Measurement model

Before proceeding with our main analysis, we assessed the latent constructs' discriminant validity by testing the factor structure of creativity, innovation climate, PSM, and social media stress (see Table A1). As expected, the four-factor measurement model fitted well with the data ($\chi^2 = 159.06$, $df = 84$, confirmatory fit index [CFI] = 0.96, standardized root mean residual [SRMR] = 0.05, root mean square error of approximation [RMSEA] = 0.05). Due to the significant correlation between PSM and innovation climate (see Table 1), we tested an alternative three-factor model in which innovation climate and PSM could load on one factor. We also tested a three-factor model in which creativity and PSM made up one factor, and—given the theoretical proximity between creativity and innovation climate—a three-factor model in which these two variables constituted one factor. Any of these

alternatives fitted the observed data significantly worse than the four-factor model. As our survey was administered during the pandemic and a large share of approx. 44 percent reported to mostly work from home, we tested both configural and metric invariance to validate our latent measurement model across the office and remote working sample. An additional multigroup analysis across Germany, Italy, and Norway confirms that meaningful comparisons can be made between the three countries (see Table A1).

Descriptive analysis

We provide a brief descriptive analysis of item-level responses (see also Table A2), which shows that Italian policy officials report lower creativity levels as compared with their German and Norwegian counterparts (see Figure 1).

Similarly, assessments of the organization's innovation climate (see Figure 2) were the lowest among Italian officials and while on average, German policy officials most strongly agreed that their supervisors encourage creative solutions to problems and are open to changes in procedural routines, Norwegian respondents emphasized that members at all levels are encouraged to contribute new ideas to improve the organization's work. The latter is in line with the consensus-based and collaborative approach to policy problems as prevailing in Norwegian government organizations.

A glance at social media stress reveals that Norwegian respondents tend to experience lower levels of social media stress than German and Italian respondents who experience rather similar stress patterns (see Figure 3).

The descriptive statistics and intercorrelations as depicted in Table 1 provide first support for our hypotheses. They also reveal that policy officials who rely on social media more often and perceive their organization as more innovative are also more motivated. Following the principle of career tracks that is prevalent in Germany and Italy, higher ranked positions are occupied by older officials. At the same time, older respondents exhibit a lower use of social media. Our findings further reveal that older and higher ranked policy officials as well as those trained as lawyers and working in parent organizations engaged in state services spent less time working from home. Lastly, it is interesting to note that male respondents tend to give lower innovation climate assessments than their female peers. Given that the innovation climate scale refers also to the behavior of superiors, this may indicate that women assess but also identify innovation-supportive behavior differently than men in the context of government organizations. In combination with the gender imbalance at the top, women may also appreciate such behavior differently, regarding it also as an opportunity for advancing their careers in an oftentimes natural male-dominated upper level of their working environment.

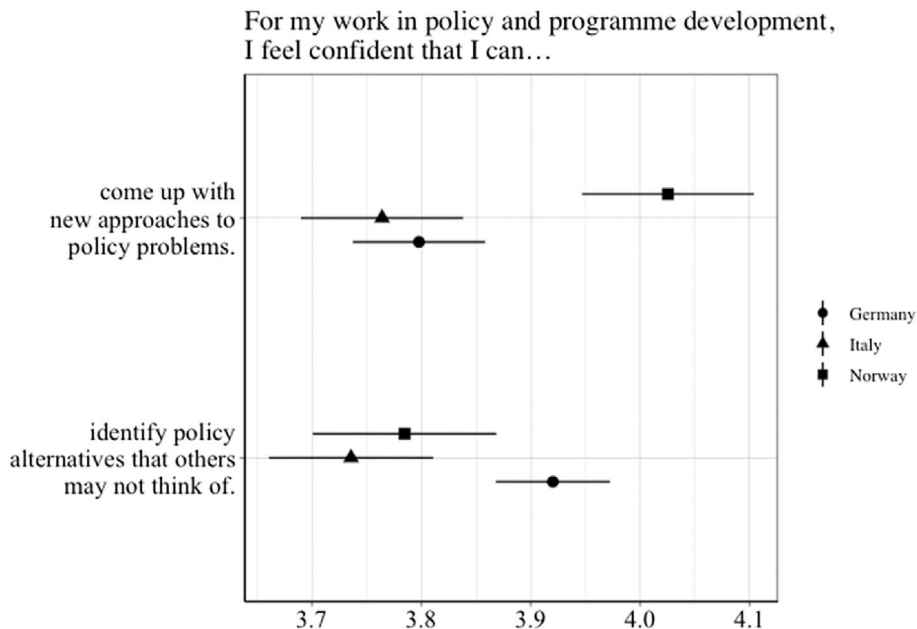


FIGURE 1 Policy creativity across countries.

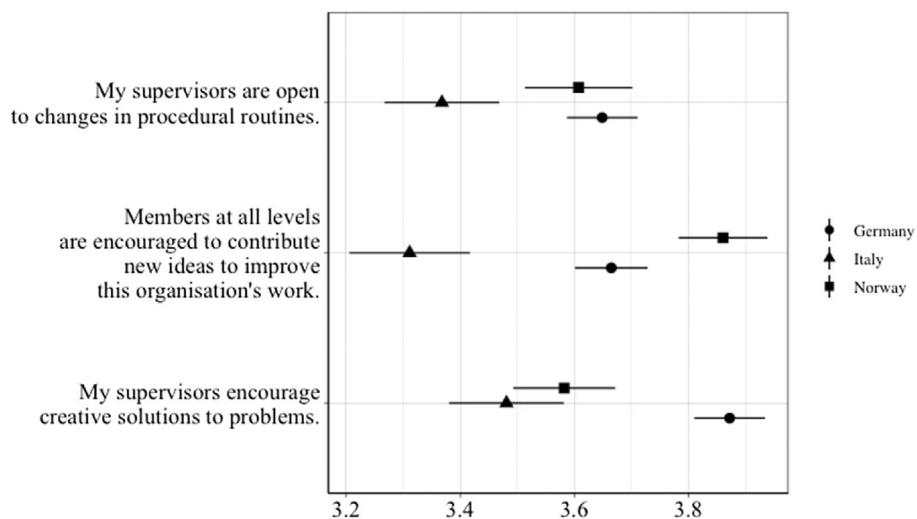


FIGURE 2 Organizational innovation climate across countries.

Analytical procedure

To test our hypotheses, we employed fixed-effects linear regressions (see Table 2), only retaining those controls that significantly correlated with our focal study variables (i.e., age, gender, social media use, and policy field dummies of welfare and environment). We did so to avoid a reduction of statistical power or biased parameter estimates due to impotent controls (Becker, 2005). Country fixed effects were used to eliminate country-specific influences on the relationship between our predictor variables and creativity: Though we presume our hypothesized relations to be rather universal, it is conceivable that

Italy and Germany with their well-known strongly legalistic civil service systems offer less creativity for their policy officials than Norway. The comparative literature on the importance and consequences of civil service systems for the micro-foundations of bureaucratic behavior provides ample evidence for their variation in providing tight or looser rules and frameworks for behavior. Thus, a country's cultural tightness, that is, the extent to which it is characterized by strong social norms and low tolerance for deviant behavior is argued to affect creativity (Chua et al., 2015; see Gelfand et al., 2006), with individuals from tight cultures being less likely than those from loose cultures to engage in and succeed at such creative tasks.

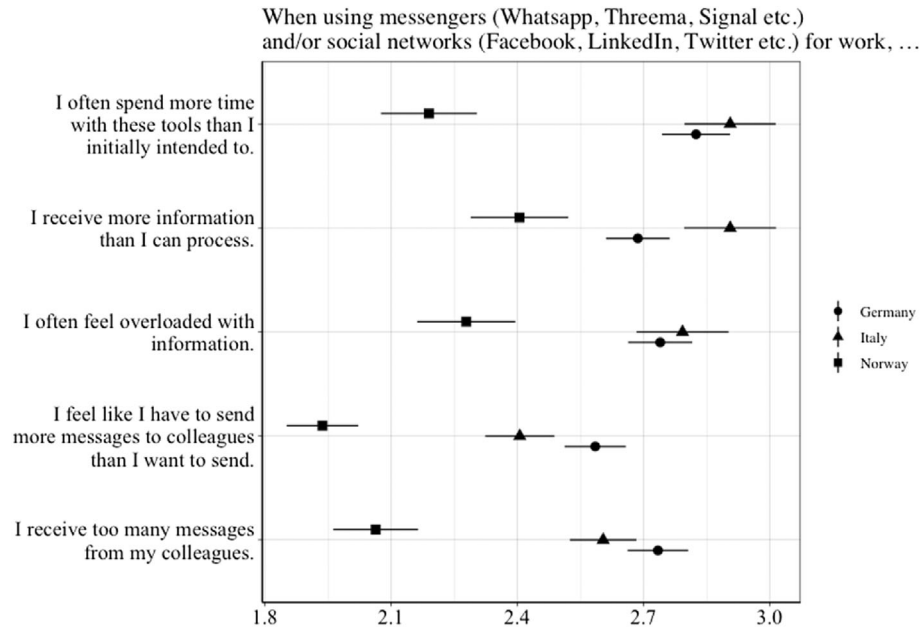


FIGURE 3 Social media stress across countries.

TABLE 2 Ordinary least squares regression results of our fixed-effects model.

	Model 1	Model 2	Model 3	Model 4
Innovation climate	0.193** (0.066)			0.142* (0.065)
Public service motivation		0.585***		0.518*** (0.118)
Social media stress			-0.183** (0.061)	-0.160** (0.059)
Age	0.000 (0.007)	-0.001 (0.007)	0.002 (0.007)	0.003 (0.007)
Gender	-0.032 (0.109)	-0.132 (0.105)	-0.106 (0.107)	-0.099 (0.106)
Social media use	0.078 (0.051)	0.042 (0.051)	0.088 (0.051)	0.043 (0.050)
Govt. area (1 = welfare)	0.244* (0.124)	0.273* (0.121)	0.252* (0.124)	0.269* (0.119)
Govt. area (1 = environment)	0.064 (0.144)	0.113 (0.141)	0.078 (0.144)	0.145 (0.139)
Country fixed effects	Yes	Yes	Yes	Yes
N_{Country}	3	3	3	3
N	373	373	373	373
Log	-518.705	-510.737	-518.439	-504.493
AIC	1055.411	1039.474	1054.878	1030.986

Note: Standard errors in parentheses.

Abbreviation: AIC, Akaike information criterion.

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

RESULTS

Our first model confirms the hypothesized effect and shows that organizational innovation climate has a significant and positive effect on creativity in policy work. Our second model also shows that the expected positive importance of public sector motivation on policy creativity exists and is significant: Those policy officials with greater PSM also report to have greater policy creativity. In contrast, the third model shows that social media stress yields medium significant and negative effects on creativity in policy work: Those policy officials experiencing the

accelerated use of SNS at work as straining and stressful also report lower levels of creativity. The final model confirms all effects from the separate models, yet the significance level of climate for innovation weakens slightly, strengthening the overall relevance of individual-level predictors such as PSM and social media stress in studying creativity at work. Neither of the control variables deemed a significant relationship with policy creativity, except for policy officials engaged in welfare policy exhibiting higher levels of policy creativity (compared with the base category of state services). An all-controls model (see Table A3) confirmed the above results, and—though

not significant—additionally revealed a tendency of policy officials engaged in foreign affairs and all officials working from home as revealing more policy creativity. These variations may be related to other individual traits shaped by recruitment and promotion policies across ministerial departments, for example, welfare and foreign affairs issues are often handled by a more diverse workforce of policy officials and trained diplomats, respectively.

CONCLUSION

In this paper, we study creativity within central government organizations, focusing on policy officials engaged in policy formulation. This policy creativity is oftentimes overlooked in empirical research, despite its crucial role for drafting government policies—as it involves to constantly identify and digest information as well as (political) signals from actors inside and outside of government. Our results show that ministries' organizational climate for innovation has significant positive effects on creativity, also in the context of policy work. Similarly, PSM yields significant positive effects on policy creativity. Yet, the accelerated use of SNS and the corresponding individual social media stress levels show significant negative effects: Those policy officials with greater social media stress also report lower policy creativity. Though more extensive creativity scales or (quasi) experimental methods may provide more differentiated or robust inferences, our study highlights the relevance of creative policy work in the social media age, thus bringing together previous research in occupational psychology as well as public administration and public policy.

This paper is limited to studying the relevance of social media stress as one of many changing features in the work environment of policy officials and public sector employees more generally, which experience the digital transformation of public sectors. Other digital means at work may be regarded as even more important, such as electronic monitoring (cf. Fusi & Feeney, 2018) or the increasing use of big data and automated decision-making systems (Busuioc, 2021). However, for policy officials engaged in the day-to-day work of preparing government policy, the use of social media to collect information and gather signals from politics and society may be particularly relevant for their capabilities to be creative at work. Furthermore, we focused on three Western European countries, and although our analysis shows that these different contexts correspond to different patterns of policy creativity (and organizational climate as well as social media stress), comparisons with further countries may reveal more insights on the importance of macro-level features for understanding the old and new determinants of policy creativity.

Our findings contribute to several debates on creativity and innovation in the public sector, on the micro-

foundations of public policy formulation but also of the digital transformation of the public sector and the effects of corresponding changes in the working environments of public sector employees. Firstly, we contribute to the creativity and innovation literature by assessing the importance of government organizations' innovative climate, PSM, and social media stress for creativity in policy work. Secondly, we add to public policy studies that the changing working environments in the current era of digital government may have severe repercussions on how policy officials gather and collect information and arguments and go about their crucial role in preparing and formulating government policy. Given the significant importance of novel stress triggered by social media platforms at work, public policy research may take these platforms more into account, not only for research interests into how governments make policies regarding these platforms as subjects to, for example, government regulation but also as a growingly relevant context feature alongside many other organizational and institutional determinants of preparing public policy inside governments. Thirdly, we add to the recent growth of studies on bureaucratic behavior in the digital era by analyzing potential detrimental effects of work-related social media stress. Future research may further investigate how this type of stress and other ICT-related work stressors shape policy work, service delivery or citizen–state interactions. In applying and studying these phenomena that have been initially discussed in (occupational) psychology, we showed relevant explanatory perspectives that can be explored further in the behavioral public administration debate and beyond. Lastly, we echo growing concerns in the current debate on the digital transformation of the public sectors over the feasibility and potential to control ICT use in government organizations (Charbonneau & Doberstein, 2020; van der Voort et al., 2019). On the one hand, SNS are easily accessible and used by policy officials from their official office hardware but also their private mobile devices. Therefore, government organizations as employers and organized representations of public sector employees arguably need to consider the accelerated use of these tools for policy work. The fact that policy officials already report social media stress levels may be of some concern, yet they are more difficult to level and regulate than other ICT at work such as access to email accounts and files outside office hours. On the other hand, the reported use of social media and corresponding stressors show that little or no control is in place over these parts of policy officials' work routines. The adoption or at least debate over a “right to disconnect” for government officials is a first indication of more control being necessary but also shows how crucial ICT-related stress has become for government officials.

ACKNOWLEDGMENT

Open Access funding enabled and organized by Projekt DEAL.

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ENDNOTES

- ¹ Note that studies discuss whether PSM also incorporates aspects of intrinsic motivation or whether these two are conceptually distinct (Potipiroon & Ford, 2017).
- ² A CFA on the PSM items revealed a good model fit ($\chi^2 = 8.46$, $df = 5$, CFI = 0.984, SRMR = 0.026, and RMSEA = 0.043). Measurement invariance was additionally tested, indicating that configural ($\chi^2 = 24.97$, $df = 15$, CFI = 0.951, SRMR = 0.039, and RMSEA = 0.073) and metric invariance ($\chi^2 = 31.19$, $df = 23$, CFI = 0.960, SRMR = 0.050, and RMSEA = 0.054) holds across countries.

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How to cite this article: Fleischer, Julia, and Camilla Wanckel. 2024. "Creativity in Policy Capacity: Organizational and Individual Determinants." *Public Administration Review* 84(2): 218–232. <https://doi.org/10.1111/puar.13676>

APPENDIX A

TABLE A1 Summary of the hypothesized and alternative measurement models ($N = 373$).

	χ^2	df	χ^2/df	Δdf	$\Delta\chi^2$	SRMR	RMSEA	CFI	AIC
Measurement model of the latent study variables									
Hypothesized four-factor model	159.06	84.00	1.89	-	-	0.048	0.049	0.960	11,727.85
Alternative model 1: Three-factor model (PSM + organizational innovation climate)	398.29	87.00	4.58	3.00	239.23	0.101	0.098	0.832	11,997.17
Alternative model 2: Three-factor model (creativity + organizational innovation climate)	315.29	87.00	3.62	3.00	156.23	0.085	0.084	0.877	11,899.36
Alternative model 3: Three-factor model (PSM + creativity)	289.15	87.00	3.32	3.00	130.09	0.072	0.079	0.891	11,873.10
Alternative model 4: One-factor-model	944.66	90.00	10.50	6.00	785.60	0.166	0.160	0.539	12,684.59
Cross-country measurement invariance									
Configural invariance	347.15	252.00	1.38	-	-	0.062	0.055	0.951	11,642.16
Metric invariance	379.48	274.00	1.38	22.00	32.33	0.072	0.056	0.945	11,633.43
Measurement invariance across office and remote working respondents									
Configural invariance	233.67	168.00	1.39	-	-	0.053	0.046	0.965	11,786.97
Metric invariance	250.64	179.00	1.40	11.00	22.02	0.057	0.046	0.961	11,782.05

Note: Chi-square (χ^2) values denote Satorra–Bentler adjusted statistics using MLM estimator in order to correct for non-normality. Competing models were compared by drawing on the Satorra–Bentler chi-square difference test as well as the Akaike information criterion (AIC).

Abbreviations: CFI, confirmatory fit index; PSM, public service motivation; RMSEA, root mean square error of approximation; SRMR, standardized root mean residual.

TABLE A2 Means, standard deviations, and factor loading of the study variables.

	Germany		Italy		Norway	
	λ	M (SD)	λ	M (SD)	λ	M (SD)
Policy creativity						
For my work in policy and program development, I feel confident that I can...						
Identify policy alternatives that others may not think of.	0.71	3.92 (0.72)	0.97	3.74 (0.77)	0.68	3.78 (0.75)
Come up with new approaches to policy problems.	0.82	3.80 (0.83)	0.78	3.76 (0.76)	0.71	4.03 (0.70)
Innovation climate						
My supervisors encourage creative solutions to problems.	0.87	3.87 (0.85)	0.84	3.48 (1.04)	0.75	3.58 (0.79)
Members at all levels are encouraged to contribute new ideas to improve this organization's work.	0.74	3.67 (0.87)	0.83	3.31 (1.09)	0.82	3.86 (0.69)
My supervisors are open to changes in procedural routines.	0.75	3.65 (0.85)	0.89	3.37 (1.04)	0.77	3.61 (0.84)
Public service motivation (PSM)						
I am often reminded by daily events about how dependent we are on one another in society.	0.41	4.12 (0.66)	0.50	3.95 (0.75)	0.49	4.09 (0.74)
Making a difference in society means more to me than personal achievements.	0.54	4.02 (0.75)	0.50	3.73 (0.83)	0.60	3.82 (0.71)
I am prepared to make sacrifices for the good of society.	0.81	4.07 (0.66)	0.80	4.00 (0.65)	0.52	3.79 (0.61)
I am not afraid to go to bat for the rights of others even if it means I will be ridiculed.	0.68	4.11 (0.70)	0.66	3.96 (0.68)	0.36	3.79 (0.67)
Meaningful public service is very important to me.	0.36	4.80 (0.42)	0.44	4.66 (0.50)	0.59	4.60 (0.52)
Social media stress						
When using messengers (Whatsapp, Threema, Signal, etc.) and/or social networks (Facebook, LinkedIn, Twitter, etc.) for work, ...						
I receive too many messages from my colleagues.	0.76	2.73 (0.99)	0.65	2.60 (0.81)	0.8	2.06 (0.90)
I feel like I have to send more messages to colleagues than I want to send.	0.77	2.59 (1.00)	0.67	2.41 (0.85)	0.89	1.94 (0.76)

(Continues)

TABLE A2 (Continued)

	Germany		Italy		Norway	
	λ	<i>M</i> (SD)	λ	<i>M</i> (SD)	λ	<i>M</i> (SD)
I often feel overloaded with information.	0.95	2.74 (1.05)	0.87	2.79 (1.13)	0.84	2.28 (1.04)
I receive more information than I can process.	0.82	2.69 (1.04)	0.90	2.91 (1.13)	0.74	2.41 (1.03)
I often spend more time with these tools than I initially intended to.	0.75	2.82 (1.11)	0.74	2.91 (1.12)	0.74	2.19 (1.02)

Note: Lambda (λ) indicates factor loadings. All factor loadings are significant at the 0.05 level.

TABLE A3 Ordinary least squares regression results of our fixed-effects model with all controls.

	Model 1	Model 2	Model 3	Model 4
Innovation climate	0.196** (0.067)			0.144* (0.065)
Public service motivation		0.601*** (0.118)		0.533*** (0.118)
Social media stress			-0.188** (0.061)	-0.163** (0.006)
Rank	-0.028 (0.089)	0.001 (0.088)	-0.034 (0.089)	-0.019 (0.086)
Age	0.001 (0.007)	0.001 (0.007)	0.003 (0.007)	0.004 (0.007)
Gender	-0.038 (0.110)	-0.143 (0.106)	-0.115 (0.108)	-0.107 (0.107)
Social media use	0.068 (0.052)	0.032 (0.051)	0.078 (0.051)	0.031 (0.050)
Education (1 = law)	-0.079 (0.135)	-0.078 (0.132)	-0.016 (0.134)	-0.098 (0.131)
Main work location (1 = home office)	0.119 (0.111)	0.145 (0.108)	0.149 (0.111)	0.140 (0.107)
Govt. area (1 = economic affairs)	-0.042 (0.157)	-0.028 (0.153)	-0.009 (0.157)	-0.014 (0.151)
Govt. area (1 = welfare)	0.270 (0.153)	0.311* (0.150)	0.298 (0.153)	0.317* (0.148)
Govt. area (1 = foreign affairs)	0.210 (0.188)	0.233 (0.183)	0.228 (0.187)	0.252 (0.181)
Govt. area (1 = environment)	0.090 (0.170)	0.148 (0.167)	0.128 (0.171)	0.193 (0.165)
Country fixed effects	Yes	Yes	Yes	Yes
N_{Country}	3	3	3	3
<i>N</i>	373	373	373	373
Log	-516.900	-508.355	-516.452	-501.877
AIC	1061.800	1044.711	1060.904	1035.755

Note: Standard errors in parentheses.

Abbreviation: AIC, Akaike information criterion.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. State services serve as a reference category for the other government areas.

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