

**Public Service Motivation and Extra-Role Performance:
Taking Charge Behavior at Police Services**

authors in alphabetical order

Fabian Homberg (*corresponding author*)
Southampton Business School
University of Southampton
University Road
SO17 1BJ
UK
Email: F.Homberg@soton.ac.uk

Rick Vogel
University of Hamburg
School of Business, Economics and Social Sciences
Von Melle Park 9
D – 20146 Hamburg
Germany
Email: rick.vogel@wiso.uni-hamburg.de

Julia Weiherl
Beiersdorf AG
Unnastraße 48
D – 20245 Hamburg
Email: julia.brockmann@gmail.com



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Abstract

Building change capabilities into public organizations is a challenge for strategic management. This study focuses on the micro-level of extra-role behaviors that contribute to continuous improvements in working procedures at the front-end of organizations (i.e. taking charge behavior; TCB). More particularly, we examine public service motivation (PSM) as a key variable mediating between perceived practices and TCB of street-level bureaucrats. The analyses are based on survey data from a state police force in Germany (N=1,165). Results confirm the role of PSM as full mediator, but this mediation is limited to the relationship between leadership behaviors and TCB, while perceived organizational characteristics – except for red tape – have direct positive impact on TCB.

Keywords: access to resources; change-oriented citizenship; extra-role behaviour; high reliability organizations; perceived organizational support; public sector reform; red tape; security organizations

**Public Service Motivation and Continuous Organizational Change:
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For Peer Review

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Introduction

In the course of the past decades, the public sector across many countries has undergone several reform waves, often politically charged, such as privatization, competition, public-private partnerships, benchmarking, total quality management, e-government, good governance and many more approaches (Pollitt and Bouckaert 2011). Many public organizations are thus faced with pressures for change. In contrast, however, the literature on organizational change has remained sparse in public administration, particularly when compared to change management in the field of general management. Fernandez and Rainey (2006), in their extensive review of the literature, conclude that “this recurrent theme of change in government agencies has not induced a high volume of articles that explicitly address the topic in public administration journals” (p. 168) and that more research efforts are long overdue.

Ever since this review, the body of literature on organizational change has grown at a modest rate (e.g. Giaque 2015; Wright, Christensen and Isett 2013), but a focus on what is commonly called organizational transformation has remained: large-scale, planned and strategic change initiated from the top of the hierarchy (Fernandez and Rainey 2006). The triggers of first-order (Bartunek 1984), evolutionary (Pettigrew, 1985) or continuous change (Weick and Quinn 1999), which is less disruptive to organizations than second-order, revolutionary or episodic change and develops bottom-up rather than being imposed top-down, have received far less attention by public management scholars and practitioners. This is despite the fact that promoters of change have growing difficulties to mobilize support for further large-scale reforms because a kind of ‘reform fatigue’ has spread among many public servants and employees who are increasingly fed up with yet another change initiative (de Vries 2013). Continuously changing organizations adapt more timely to new conditions, evoke less resistance on the part of organizational members and spend fewer resources on change management than organizations that are subject to rare but deep changes (Weick and Quinn 1999).

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3 Accordingly, the antecedents and consequences of change-related capabilities distrib-
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5 uted within public organizations deserve more attention (Piening 2013). More specifically, the
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7 theoretical underpinnings of individual behaviour in continuous (as opposed to episodic)
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9 change processes which provide microfoundations (e.g. Teece 2007) to the literature on or-
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11 ganizational change in the public sector are yet underdeveloped. We make a step in this direc-
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13 tion by exploring the question of why and how organizational members take charge of adap-
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15 tive changes at the front-end of the organization. Taking charge behaviour (TCB) is defined as
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17 ‘voluntary and constructive efforts by individual employees to effect organizationally func-
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19 tional change’ (Morrison and Phelps 1999, p. 403). Members who show high levels of TCB
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21 pay attention to, and engage in, the improvement of organizational structures, processes and
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23 routines.
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27 This paper thus examines the drivers of TCB of civil servants and employees at the
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29 front-end of a public organization. More particularly, we examine public service motivation
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31 (PSM) as a key mediator between organizational characteristics and leadership behaviour, on
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33 the one hand, and TCB, on the other. PSM is defined as ‘an individual’s orientation to deliver-
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35 ing service to people with the purpose of doing good for others and society’ (Hondeghe and
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37 Perry 2008, p. vii). The association of PSM with TCB is of particular interest because PSM
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39 predominantly has an external orientation towards citizens and the general public, while TCB
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41 is more directed towards internal processes. Recent work has emphasized the importance of
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43 understanding the relation between the different dimensions of PSM and organizational
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45 change (Wright et al. 2013). We build on this line of research to investigate if PSM also
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47 drives behaviours that do not, or not directly, address the public but are concerned with the
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49 improvement of work processes within the organization. Arguably, TCB supports organiza-
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51 tions in securing their functioning, which will in return positively affect the provision of pub-
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53 lic services.
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3 The subject of our study is the police force of a German federal state. New challenges,
4 such as religious extremism, right-wing terrorism and cybercrime have created strong pres-
5 sures for improving existing and implementing new practices and procedures in the police.
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7 Given this increasingly demanding work environment, police organizations offer an interest-
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The subject of our study is the police force of a German federal state. New challenges, such as religious extremism, right-wing terrorism and cybercrime have created strong pressures for improving existing and implementing new practices and procedures in the police. Given this increasingly demanding work environment, police organizations offer an interesting setting for the study of TCB. On the one hand, their structures and processes have to comply with extensive legal requirements, suggesting that many rules and procedures of police organizations are largely predetermined by the law and not subject to change efforts by organizational members. This view resonates with the literature on command-and-control organizations which implies that in public security organizations such as the military, fire departments or the police, authority is exercised top-down in formal chains of decision with little discretion at the bottom end of the hierarchy (e.g. McCann and Pigeau 2000).

On the other hand, the literature on street-level bureaucrats provides vast evidence that considerable degrees of freedom for front-line members of police organizations (Brockmann 2015) and other public organizations (Canales 2011) remain. Moreover, the police is frequently mentioned as prime example of high-reliability organizations (e.g. Roberts et al. 2008). This literature suggests that such organizations tend to foster a ‘collective mindfulness’ (Weick, Sutcliffe and Obstfeld 1999) among their members and direct their attention to details of work processes in order to prevent errors and crises. Mindful organizing implies that members proactively pay attention to structures, processes and practices and thereby contribute to the organization’s overall culture of safety (Weick et al. 1999).

Our study makes three distinct contributions to the literature: First, the findings have implications for the implementation of public sector reforms in times of increasing resistance to deep organizational changes on the part of public servants and employees (de Vries 2013). The triggers of continuous change deserve more attention by public management scholars and practitioners because they help building distributed capabilities of change into the organization. Second, by investigating the interrelationships between organization, leadership, motiva-

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3 tion, and extra-role performance, we open the 'black box' of why organizational members
4 take charge of adaptive changes at the front-end of the organization. With this focus, we also
5 enrich the hitherto limited literature on organizational and behavioural drivers of TCB (Love
6 and Dustin 2014) and provide first results on how a specific type of motivation (i.e. PSM)
7 affects TCB. And third, we expand on the theoretical understanding of how leadership behav-
8 iours translate into performance of subordinates beyond role expectations. Hence we extend
9 research and theory on leadership, in particular transformational leadership, as applied in the
10 public sector (Belle 2014).
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20 21 22 23 **Theory and hypotheses**

24 Previous research has referred to social exchange theory (Cropanzano and Mitchell 2005) in
25 order to explain attitudinal and behavioural responses to organizational structures and practic-
26 es (Gould-Williams 2007; Knies and Leisink 2014b). This line of reasoning assumes that
27 members of a supportive organization feel an obligation to reciprocate this support with be-
28 haviours that are valued by the organization and that help accomplishing organizational goals.
29 These reciprocating behaviours often go beyond contractual arrangements and may establish a
30 long-term social exchange between the individual and organization. As result, employees are
31 more likely to display high levels of autonomous motivation such as PSM and thus are more
32 inclined to show extra-role behaviours in the form of taking charge.
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45 Following these conceptual underpinnings, we focus on the mediating relationships
46 depicted in Figure 1. Our main focus is on a specific kind of extra-role performance as behav-
47 ioural outcome, i.e. TCB, and how it flows from PSM. While there is some debate about the
48 nature of PSM, we consider it as a response of the workforce that mediates the relationship
49 between perceived practices and behavioural outcomes (Vandenabeele, Leisink and Knies
50 2013). As regards these organizational and leadership practices, we focus more closely on
51 perceived organizational support, red tape, access to resources and transformational leader-
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3 ship. Our conceptual model considers both direct effects of these perceived practices on TCB
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5 (H1-H4), as well as the mediating effect of PSM (H5a-d).
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9 Please insert Figure 1 about here.
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11 12 13 *Taking charge behaviour*

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15 Taking charge behaviour (TCB) is regarded as a challenging-promotive behaviour that is ori-
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17 entated towards organizational change and improvement (Love and Dustin 2014; McAllister,
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19 Kamdar, Morrison and Turban 2007; Morrison and Phelps 1999). Employees who show this
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21 behaviour aim at correcting or improving procedures, or at executing them more effectively
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23 (Chiaburu and Baker 2006). TCB is distinct from other extra-role behaviours, such as organi-
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25 zational citizenship behaviour (OCB). Individuals who engage in OCB are predominantly
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27 concerned with the present state of an organization and aim at sustaining the status quo
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29 (Chiaburu and Baker 2006; Morrison and Phelps 1999). On the contrary, individuals who en-
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31 gage in TCB are concerned with the future state of an organization and challenge the status
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33 quo in order to bring about constructive change. TCB reveals faulty or misdirected procedures
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35 that undermine the effectiveness of organizations and prevent them from adapting to changing
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37 organizational environments. This change-related character of TCB has led researchers to
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39 include it into a group of behaviours called change-orientated citizenship (Love and Dustin
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41 2014).
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46 Like all behaviours, TCB has been considered as a function of personal dispositions
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48 (Bateman and Crant 1993) and situational cues (Morrison and Phelps 1999). As argued above,
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50 organizations can provide such situational cues by initiating practices that foster perceptions
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52 of support (Gould-Williams 2007). If this is the case, the dispositions of organizational mem-
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54 bers change favorably and motivate behaviours that are beneficial for the organization, thus
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3 paying back for the perceived support. The next sections introduce these elements in more
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5 detail.
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8 9 *Perceived organizational support*

10 Applied to strategic management and HRM, the social exchange perspective can build on the
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12 long-standing observation that employees develop an overall sense of the extent to which an
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14 organization appreciates their efforts and contributions and cares for their personal well-being
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16 (Eisenberger, Huntington, Hutchison and Sowa 1986). The antecedents and consequences of
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18 such perceived organizational support (POS) have gained much attention in the literature
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20 (Rhoades and Eisenberger 2002). POS has been found to be a strong predictor of work out-
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22 comes, including extra-role performance (Chen, Eisenberger, Johnson, Sucharski and Aselage
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24 2009). The prevailing explanation for this association in the literature is that organizational
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26 members adhere to social norms of reciprocity (Gouldner 1960) and respond to favorable
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28 treatment by the organization with increased work efforts within any beyond their job roles.
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34 Besides this mainstream reasoning, two more arguments can be put forward in order to
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36 establish a link between POS and extra-role performance (Yu and Frenkel 2013): First, sup-
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38 port by the organization addresses socio-emotional needs of belonging and relatedness (Deci
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40 and Ryan 2000). The fulfillment of these needs facilitates the incorporation of organizational
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42 membership into the self-concept and social identity of the individual which, in turn, fosters
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44 his or her identification with the organization. Members with high levels of identification are
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46 more likely to go the extra mile in favor of the organization. And second, employees may
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48 infer from POS beneficiary intentions of managers to advance their careers through promo-
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50 tion, approval and recognition. Following expectancy theory, higher expectations of career
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52 success encourages organizational members to perform at higher levels because they expect
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54 these efforts to translate into rewards. Taken together, these lines of theoretical reasoning pro-
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3 wide strong grounds to assume that POS will have a positive impact on extra-role behaviours
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5 such as TCB. We therefore state:
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10 *Hypothesis 1:* Perceived organizational support is positively associated with taking charge
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12 behaviour.
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14 15 16 ***Red tape***

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18 If organizational members reciprocate POS with TCB, than the opposite should be true when
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20 they perceive unnecessary burdens imposed on them by the organization. This is a common
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22 perception in bureaucratic organizations because the procedural downsides of bureaucracy are
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24 frequently manifested in high levels of red tape (Brewer and Walker 2010). Red tape is de-
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26 fined as sets of ‘rules, regulations, and procedures that remain in force and entail a compli-
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28 ance burden for the organization but have no efficacy for the rules’ functional object’ (Bo-
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30 zeman 1993, p. 283). Andersen and Kjeldsen (2013, p. 906) argue that ‘public employees may
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32 become frustrated in achieving their goal to do good for other people and society when they
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34 experience burdensome, formal rules’. The amount of burdensome rules in place may prevent
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36 individuals from initiating proactive extra-role behaviour. High levels of red tape may alienate
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38 employees and managers alike (DeHart-Davis and Pandey 2005) and decrease risk-taking
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40 (Feeney and DeHart-Davis 2009). Before engaging in challenging-promotive behaviour, indi-
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42 viduals tend to assess the likelihood of success and possible consequences (Morrison and
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44 Phelps 1999). Hence, red tape might prevent employees from engaging in TCB because they
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46 expect change efforts to have a low chance of success and fear possible consequences. In turn,
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48 individuals are less likely to engage in these behaviours. Thus, our hypothesis is:
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56 *Hypothesis 2:* Perceived red tape is negatively associated with taking charge behaviour.
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Access to resources

Organizations can support members and increase their motivation by providing them with access to resources. Resources in terms of time, attention and information are limited, and members often have no clear guidance about priorities when using these resources (Meyers and Lehmann-Nielsen 2012). Previous studies have shown that access to resources contributes to an individual's sense of self-efficacy, independency and powerfulness (Spreitzer 1996). Individuals who have access to resources have increased feelings of control (Galperin 2012) and, in turn, feel empowered to make their own decisions and to effectuate change. Beyond these motivational benefits of empowerment, access to resources also provides organizational members with better opportunities to perform (Boxall and Purcell 2016; Vandenabeele et al. 2013). Sufficient access to relevant resources is necessary not only for performing daily tasks, but also for going beyond the traditionally assigned work roles in order to improve the working environment (DeHart-Davis 2007). In particular, access to information can support organizational members in 'develop[ing] alternative frames of references for understanding their roles in the organisation's operation' (Spreitzer 1996, p. 488). By offering information, employees better understand the nature of their work and, therefore, can make sound judgements on the effectiveness of work-related procedures. According to Fuller, Marler, and Hester (2006), individuals who have access to resources 'will engage in constructive change-orientated behaviour and utilise resources to solve problems, experiment, make work-related improvements, and take advantages of new opportunities' (pp. 1095–1096). Thus, employees who have access to resources can accomplish their work more autonomously and, consequently, are more likely to take charge. From this, we conclude that perceived access to resources is an important contextual factor that influences TCB:

Hypothesis 3: Perceived access to resources is positively associated with taking charge behaviour.

Transformational leadership

In social exchange processes, middle and line managers are critical agents because it is them who implement the intended practices at the front-end of the organization and who may engage in supportive leadership behaviours towards their subordinates (Knies and Leisink 2014a; Purcell and Hutchinson 2007). Among the most widely spread frameworks for studying leadership within and across different organizations, industries and cultures is transformational leadership. According to the originators of the theory (Bass 1985; Burns 1978), transformational leaders help followers to live up to their full potential and to perform beyond their own and others' expectations. Transformational leaders show charismatic behaviours, trigger inspirational motivation, provide intellectual stimulation and consider subordinates individually (Bass 1985; Bass and Avolio 1990). While transactional leadership is directed at intra-role behaviours derived from implicit or explicit exchange agreements, transformational leadership additionally elevates followers' self-actualizing needs and motivation to show extra-role behaviours: 'Transformational leaders move followers to transcend their own self-interests for the good of the group, organization, or country' (Bass 1997, p. 133). Through transformational leadership, leaders and followers are united in the pursuit of 'higher' goals and collective interests beyond contractual transactions. As a consequence, the followers of transformational leaders show higher levels of activity, initiative and responsibility as compared to the subordinates of transactional leaders (Dvir, Eden, Avolio and Shamir 2002). More specifically, the intellectual stimulation by transformational leaders 'gets followers to question the tried and true ways of solving problems' (Avolio and Bass 1999, p. 444) and to search for improved rules and procedures. Developmental leaps in how followers comprehend, conceptualize and discern problems and solutions are thus considered a valid indicator for intellectual stimulation by a transformational leader (Bass 1985). Transformational leaders thus empower their followers to put operating rules into question, think autonomously and

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3 independently, and develop innovative and creative ideas (Bass and Avolio 1990). Since TCB
4 is a specific form of extra-role behaviours, intended to challenge the status quo of operations
5 and to bring about organizational change, we conclude from transformational leadership theo-
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14 *Hypothesis 4:* Perceived transformational leadership is positively associated with taking
15 charge behaviour.
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18 19 20 ***Public service motivation***

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22 Beyond the direct effects of perceived organizational and leadership practices on TCB, as
23 hypothesized above, attitudinal and motivational responses may mediate these relationships. It
24 has been suggested that PSM is such an intervening variable (Vandenabeele et al. 2013;
25 Wright, Hassan and Park 2016). Public service motivation (PSM) is conceived of as a mix of
26 attitudes towards public service and consists of four dimensions: attraction to policy making,
27 commitment to the public interest, self-sacrifice and compassion (Perry 1996). Individuals
28 who display high levels of PSM tend to be more considerate towards the needs of others
29 (Rainey and Steinbauer 1999) and are thus more likely to show behaviours that generate bene-
30 fits for others.
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43 Previous research has considered PSM as both dependent and independent variable
44 (Ritz, Brewer and Neumann 2016). When results from these streams are combined, they pro-
45 vide additional support for the assumption that PSM mediates between workforce perceptions
46 and behavioural outcomes. Most evidently, transformational leadership has repeatedly been
47 shown to exert positive impact on PSM (PSM as dependent variable) (e.g. Vandenabeele
48 2014; Wright, Moynihan and Pandey 2012). There is also some evidence that red tape is nega-
49 tively associated with PSM (Moynihan and Pandey 2007; Scott and Pandey 2005), although
50 this relationship is far less explored. To the best of our knowledge, this is the first study to
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3 examine the association between access to resources and PSM. As argued above, POS and
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5 perceived access to resources empower organizational members and provide them with better
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7 opportunities to perform in their jobs. Feeling empowered and having better opportunities to
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9 serve the public should therefore also address and reinforce PSM.
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12 Research also shows that PSM is positively linked to a variety of attitudes and behav-
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14 iours that are beneficial to the organization (PSM as independent variable). For example, PSM
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16 is positively associated with job satisfaction (Homburg, McCarthy and Tabvuma 2015), or-
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18 ganizational commitment (Leisink and Steijn 2009), whistleblowing (Brewer and Selden
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20 1998), citizenship behaviour (Pandey, Wright and Moynihan 2008; Gould-Williams, Mostafa
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22 and Bottomley 2015) and perceived internal efficiency (Ritz 2009). There is also first evi-
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24 dence that PSM triggers change-related behaviours. Wright et al. (2013) found empirical sup-
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26 port for the positive influence of PSM, particularly self-sacrifice and compassion, on affective
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28 commitment to change. The authors argue that 'employees with higher PSM are more likely
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30 to support organizational change, primarily because of their direct commitment to changes
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32 that improve public service provision and less because of their commitment to the organiza-
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34 tion' (Wright et al. 2013, p. 739). Conversely, individuals with high PSM levels tend to be
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36 less resistant to change (Ritz and Fernandez 2011). One supportive argument by the authors is
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38 that individuals with high levels of PSM accept changes as long as the new arrangement still
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40 allows for satisfaction of public service motivated needs. We follow this line of thought and
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42 argue that the improvement of the work environment for organizational peers as a defining
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44 element of TCB reflects an opportunity to satisfy the altruistic need element contained in
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46 PSM.
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52 Aligning these implications of previous research, we conclude that PSM, on the one
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54 hand, is affected by the perceived practices in our conceptual model and, on the other, affects
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56 TCB as behavioural outcome. Accordingly, and in line with current conceptual reasoning
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58 (Vandenabeele et al. 2013), we hypothesize PSM as mediator variable in our model:
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5 *Hypothesis 5a:* Public service motivation mediates the relationship between perceived
6 organizational support and taking charge behaviour.
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9 *Hypothesis 5b:* Public service motivation mediates the relationship between perceived
10 red tape and taking charge behaviour.
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13 *Hypothesis 5c:* Public service motivation mediates the relationship between perceived
14 access to resources and taking charge behaviour.
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17 *Hypothesis 5d:* Public service motivation mediates the relationship between perceived
18 transformational leadership and taking charge behaviour.
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22 23 24 25 **Data and methods**

26 27 *Sample*

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29 Our study is based on data collected from December 2013 to January 2014 through an online
30 survey at the police force of a German federal state (N = 1,165). The survey was supported by
31 the HR Directorate, the staff council and the police commissioner in the Ministry of the
32 Interior of the federal state ('Bundesland'). It was distributed electronically to 3,000 randomly
33 selected law enforcement officers and administrative staff members of the police force. Sam-
34 ple characteristics are displayed in Table 1 and descriptive statistics are displayed in Table 2.
35 The survey generated responses from police service members in all six branches, the regional
36 directorate and headquarter as well as the police academy. The highest mean taking charge
37 level is present in the regional directorate (3.9), the lowest in one small city branch (3.3). To
38 account for those differences we use cluster robust standard errors in the estimations. Our
39 sample is fairly representative of the German police (for details see online supplement).
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56 The survey instrument used German language. Thus, all measures, which are based on
57 established and validated scales from the literature, had to be adapted to the German context.
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3 In order to achieve this, all items originally in English language were translated to German by
4 members of the research team and then back-translated to English by professional translators.
5
6 We also piloted the survey with 161 undergraduate and graduate students and made necessary
7 adjustments afterwards. All items are measured on 5-point Likert scales if not indicated oth-
8 erwise in the sections below. To compute the individual scale measures from the indicator
9 variables we took the row-sum mean for all multi-item scales. Additionally, we computed
10 confirmatory factor analyses (CFAs) for all multi-item measures. Results are reported with the
11 variable descriptions in the subsequent sections. The hypothesized factor structure fitted the
12 dataset well (CFI 0.96, TLI 0.95, RMSEA 0.037). All items, their translations and factor load-
13 ings are displayed in Appendix 1.
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26 Please insert Table 1 and Table 2 about here.
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29 30 ***Dependent Variable***

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32 Our dependent variable of interest is TCB. We adapted the measure suggested by Morrison
33 and Phelps (1999). The original measure is designed for supervisor/supervisee or work-
34 er/coworker dyads. As we were facing a research opportunity which was reliant on the fact
35 that respondents self-report their answers, we transformed the TCB items to an agreement
36 scale. The measure still displays good reliability (Cronbach's alpha = 0.85) and factor load-
37 ings fall between 0.73 and 0.85.
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48 49 ***Independent Variables***

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51 *Perceived Organizational Support.* We measured POS based on an eight-item scale suggested
52 by Rhoades, Eisenberger and Armeli (2001). Reliability is excellent (alpha = 0.91) and factor
53 loadings range from 0.59 to 0.83. Two items are reversely coded and hence display negative
54 loadings.
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3 *Global Red Tape.* We employed the global red tape scale consisting of a single item
4 measured on an 11-point scale. This measure has been applied widely (e.g. Moynihan and
5 Pandey 2007).
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9 *Access to Resources.* Access to resources was measured using a three-item scale indi-
10 cating excellent reliability ($\alpha = 0.90$) and factor loadings ranging from 0.82 to 0.90. The
11 scale was adapted from Spreitzer (1996).
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15 *Transformational Leadership.* To measure transformational leadership ($\alpha = 0.91$),
16 we used the German version of the Multifactor Leadership Questionnaire (MLQ) inventory,
17 which is based on the works of Bass and Avolio (1995). Factor loadings fall between 0.69 and
18 0.82.
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21 *Public Service Motivation.* We used a global PSM measure consisting of seven items
22 adapted from Wright, Moynihan and Pandey (2012) and Giauque, Ritz, Varone, Anderfuhren-
23 Biget and Waldner (2011). Drawing on Giauque et al. (2013) was particularly useful as they
24 used items worded in German already. Two items captured attraction to policy making, self-
25 sacrifice and compassion, and one item measured the public interest dimension. The PSM
26 measure also displayed acceptable reliability ($\alpha = 0.73$). Factor loadings were generally
27 acceptable ranging from 0.44 to 0.58 with the exception of the second compassion item
28 (0.38). Nonetheless, we decided to take all items forward to the analysis as the overall picture
29 yields a viable measure.
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47 ***Control Variables***

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49 We included a three item measure of goal clarity because Parker and Collins (2010) showed
50 that goal orientations are an antecedent of TCB. The scale suggested by Wright and Pandey
51 (2011) had acceptable reliability ($\alpha = 0.74$) and acceptable factor loadings from 0.62 to
52 0.76.
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3 We also considered socio-demographic characteristics of the respondents as control
4 variables. We used a standard set of control variables including dummies for a leader's gen-
5 der, the duration of the leader-supervisee relationship, respondent's gender, employment vol-
6 ume and job role (law enforcement officer, administrative officer, administrative employee).
7 Additional control variables capture the civil status of the respondent, age group, education
8 level and salary grade. The latter was measured according to the German Public Service grad-
9 ing scale.¹
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20 **Results**

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22 We applied multiple OLS regression analyses to test our hypotheses. In a first step we assess
23 the hypothesized direct relationships (i.e. H1-H4). Models 1 to 4 display the direct relations of
24 our main variables (i.e. POS, red tape, access to resources and transformational leadership)
25 with TCB alongside with the control variables. In a second step, using the Baron and Kenny
26 (1986) approach to investigate the mediation hypothesis, we add four additional models.
27 Model 5 begins investigating the mediation hypothesis by using PSM as the dependent
28 variable in order to analyse the association of the independent variables with the potential
29 mediator, PSM. Model 6 is the full model without mediator, using again TCB as the
30 dependent variable. Model 7 displays the association of PSM with TCB, and Model 8 is the
31 full model including the mediator. Results are displayed in Table 3.
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45 As our data is cross-sectional in nature, common method bias (CMB) may be a prob-
46 lem. In order to limit the effects of CMB, we had to consider it at the design stage of the sur-
47 vey. Following best practice recommendations (Podsakoff, MacKenzie and Podsakoff 2012),
48 we separated independent and dependent variables; we varied scales and used validated
49 scales. Due to the online nature of the survey, we were able to benefit from item randomiza-
50 tion. In addition, it has been shown that 'common method bias can be effectively controlled
51 by including other independent variables, which exhibit small bivariate correlations ($\leq .30$)
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3 among each other and whose measures suffer from CMV' (Siemsen, Roth and Oliveira 2012,
4 p. 472). Thus, we have taken all necessary precautionary measures available in order to
5 mitigate the effects of CMB. We ran a statistical check for CMB after the data were collected.
6
7 While some authors challenge the viability of such statistical CMB checks as they do not
8 solve the issue (e.g. Jakobsen and Jensen 2015), many of them agree that they are useful to
9 detect the presence of CMB. Hence, in order to detect the amount of CMB, we
10 loaded a common latent factor on all items in order to assess the shared variance. Results in-
11 dicate that the amount of shared variance is 1.7 % and hence we conclude that CMB is not a
12 big issue in this data. A reason for this result may be that we have taken a lot of precautionary
13 measures in the design stage of the survey.
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25 Results were further checked for multicollinearity using variance inflation factors. The
26 mean VIF is 1.47 and the single highest VIF is 2.27. Thus, we have no reason to believe mul-
27 ticollinearity affects the results. The density plot indicated a normal distribution of residuals
28 and heteroscedasticity was ruled out through the use of robust standard errors. Additional ro-
29 bustness checks (i.e. subsample and instrumental variable regressions) were presented to re-
30 viewers but are omitted here for reasons of brevity (see online supplement for details).
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40 Please insert Table 3 about here.
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43 Hypothesis 1 assumes a positive association between POS and TCB and is fully supported.
44 The coefficient on POS (0.176, $p < 0.01$) is positive and highly significant in Model 1. A one
45 standard deviation (SD) increase in POS is associated with 0.056 of a SD increase in TCB.
46 Since this coefficient remains significant in Models 6 (0.099, $p < 0.01$) and 8 (0.087, $p <$
47 0.05), we conclude that POS is a driver of TCB. Hypothesis 2 states that red tape is negatively
48 associated with TCB. Our results do not lend support for this hypothesis as the red tape meas-
49 ure remains insignificant across all specifications. The relation of access to resources and
50 TCB is positive and significant (0.116, $p < 0.01$) in Model 3. A one SD increase in access to
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resources is associated with 0.10 of a SD increase in TCB. Again, the coefficient's sign and significance holds in Models 6 (0.097, $p < 0.01$) and 8 (0.117, $p < 0.01$), which allows for the conclusion that perceived access to resources is positively associated with TCB, thus supporting Hypothesis 3. The fourth hypothesis suggested that transformational leadership is associated with higher levels of TCB. In Model 4 (0.102, $p < 0.01$), a one SD increase in transformational leadership is associated with 0.05 of a SD increase in TCB. The coefficient remains significant in Model 6 (0.061, $p < 0.05$) but disappears in the full model after PSM was entered. Accordingly, we find only partial support for Hypothesis 4.

As regards the control variables, two stand out: First, the education level plays a role in relation to TCB. Our results show that lower levels of education are associated with lower TCBs (e.g. in Model 8 the education coefficient is -0.340 , $p < 0.01$). Second, the lowest salary grades showed the same results: Low salaries are associated with lower levels of TCB (e.g. Model 9, -0.363 , $p < 0.01$).

Evidence for mediation is provided by meeting four conditions. First, the independent variables display significant associations with the dependent variables in the absence of the mediator. The results presented in Table 3 thus rule out red tape, implying rejection of Hypothesis 5b. Second, the independent variables need to significantly affect the mediator, PSM in our case. According to Model 5 this is only the case for transformational leadership (0.086, $p < 0.01$) implying that Hypotheses 5a (perceived organizational support) and 5c (access to resources) are not supported either. Third, the mediator needs to be a significant predictor of the dependent variable which is shown in Model 7 by the positive significant coefficient of the PSM variable (0.458, $p < 0.01$) implying a one SD increase in PSM is associated with a 0.29 increase of a SD in TCB.² Fourth, the association of the independent variables with the dependent variable becomes not significant in the case of full mediation or substantially decreases but remains significant in the case of partial mediation. The results presented in Model 8 provide evidence for full mediation as the association between transformational leadership

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3 and TCB completely vanishes (0.022, n.s.) in the presence of PSM which remains a strong
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5 predictor of taking charge behaviour (0.457, $p < 0.01$). Hence, we conclude that the evidence
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7 is consistent with Hypothesis 5d establishing PSM as a mediator in the relation between trans-
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9 formational leadership and TCB.
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11 12 13 14 15 **Discussion**

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17 When episodic change is too difficult or too costly to implement because organizational
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19 members are tired of large-scale reforms that are imposed top-down, capabilities of continu-
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21 ous change from bottom-up are of particular importance for public organizations. This paper
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23 investigated individual and organizational factors that influence members to take charge of
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25 their organization by improving the effectiveness of work-related procedures. Results show
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27 that factors at different levels of analysis (i.e. organizational, leadership and individual) moti-
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29 vate TCB, but that the nature of these relationships differs. Among the organizational factors,
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31 POS and access to resources exert significant influence on TCB which remains stable even
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33 after introducing PSM as mediator. Access to resources provides members with the informa-
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35 tional, social, economic or technical means to effectuate structures and procedures. This is
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37 consistent with previous research, which has revealed that resources affect constructive
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39 change-orientated behaviour (Fuller et al. 2006) and personal initiative (Salanova and Schau-
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41 feli 2008).
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46 At the individual level, PSM is the single-most powerful predictor of TCB. This find-
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48 ing helps to shed light on the still underexplored relationship of PSM with organizational
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50 change (Ritz and Fernandez 2011; Wright et al. 2013). It shows that PSM is not only directed
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52 towards the societal environment of public organizations but may also drive members to en-
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54 gage in internal change of work-related procedures. Arguably, improvements in the effective-
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56 ness of public organizations indirectly address needs associated with PSM because a more
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58 effective public organization is likely to make more significant contributions to society.
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3 Contrary to the assumptions, PSM is not receptive towards external influences from
4 the structural environment of the organization. This applies both for supportive practices (i.e.
5 POS and access to resources) and for burdensome rules and procedures (i.e. red tape). Across
6 all specifications of our models, red tape has no significant influence, neither on PSM nor on
7 TCB. A possible explanation for this meaningful non-finding is that organizational members
8 anticipate red tape already at the stage of self-selection into public services in general and
9 police services more specifically. They may also get used to excessive bureaucracy in the
10 course of their socialization. Such selection and socialization effects, especially when com-
11 bined, may contribute to a 'normalization' of red tape, with the consequence that it is accepted
12 as unavoidable and then no longer affects motivation and behaviour. It has also been argued
13 that bureaucracy is both coercive and enabling (Adler and Borys 1996), and these opposite
14 effects may balance on aggregate.
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29 The absence of significant influences of perceived organizational practices on PSM,
30 both positive and negative, is all the more remarkable because it allows for the conclusion that
31 not all structural characteristics of (public) organizations are among the institutional roots of
32 PSM (Moynihan and Pandey 2007). An institutional theory of PSM comes into play only after
33 leadership is considered (Vandenabeele 2014). Our results provide evidence that PSM fully
34 mediates transformational leadership and TCB. Transformational leaders remind their follow-
35 ers of the 'higher purpose' of the organization and provide them with inspiration and stimula-
36 tion to live up to this mission (Bass 1985; Bass and Avolio 1990). In the public sector, organ-
37 izational missions embody public values, and the promotion of such values by transforma-
38 tional leaders relates to the PSM of followers (Vandenabeele 2014). POS, access to resources
39 and red tape lack this value base and may thus fail to address PSM. Moreover, structural char-
40 acteristics are aspects of an impersonal relationship between the individual and the organiza-
41 tion, whereas leadership constitutes an interpersonal relationship between leaders and follow-
42 ers. Attitudinal and motivational reactions may be stronger in such personalized relationships
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3 because this kind of relationship is more true to *social* exchange and may be associated with
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5 higher levels of mutually perceived obligations.
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8 The visionary character of transformational leadership with its strong emphasis on
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10 high-level missions is also a possible explanation for the disappearance of the direct effect on
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12 TCB once we control for PSM. We thus had to deny full support for Hypothesis 4 which pro-
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14 poses a positive association between transformational leadership and TCB. A possible expla-
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16 nation for this finding is that transformational leaders, while building commitment to organi-
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18 zational goals and values through inspiration and stimulation, may neglect the operational
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20 details of working procedures that are subject to TCB. Leadership styles with a low task ori-
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22 entation, such as transformational leadership, may be too distant from the daily work to di-
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24 rectly stimulate change-related behaviours at the front-end of an organization. This conclusion
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26 resonates with feedback-intervention theory (Kluger and DeNisi 1996) which suggests that
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28 leadership interventions by transformational leaders, due to their visionary character, do not
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30 direct attention of followers to task details and thus fail to induce task-learning processes.
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32 Such learning on task details is likely to precede the identification of opportunities for im-
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34 provements in work procedures.
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39 Our findings also have significant implications for the literature on high-reliability or-
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41 ganizations. They imply that in times of unexpected events, individuals' perceptions of sup-
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43 port and access to resources become important in order to organize mindfully. Under these
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45 conditions, organizational members feel empowered and enabled to improve existing or
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47 implement new practices and procedures in order to respond to unexpected events (e.g. reli-
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49 gious extremism, cybercrime) in a flexible way. This supports studies on mindful organizing,
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51 which state that resources are necessary to understand the working context and, in turn, to
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53 engage in it (Vogus 2011; Weick et al. 1999). Due to its strong effects on TCB which go even
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55 beyond those found with regards to the other aforementioned organizational facilitators of
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57 TCB, PSM is also of much relevance for high reliability organizations.
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Limitations

First, as our data is cross-sectional in nature, we are unable to make strong causal claims. However, we share DeHart-Davis, Davis and Mohr's (2014) argument that in such cases theoretical reasoning is of utmost importance and provides guidance. Following the theories reviewed earlier, in particular the assumption is that leadership and motivation precede action (in this particular case the action of taking charge behaviour). Thus, we consider our results pointing in this direction while clearly acknowledging that future work using longitudinal data on the relationship between leadership, PSM and taking charge behaviour is required. We also encourage future research to collect dyadic data with both self- and other-ratings of our key variables. Unfortunately, we were not able to match responses from leaders and followers because concerns about confidentiality are exceptionally strong in the German public sector in general and in the state police in particular. Second, by using a global measure of PSM we are not able to break PSM down to the dimensional level. Nonetheless, it is not unreasonable to assume that the effects vary with its dimensions. Thus, future research should employ dimensional PSM measures to assess their effect on TCB. Although our PSM measure displays good reliability levels and had been validated in a German speaking context, some PSM items show factor loadings less than .5. This is a common problem in PSM studies, in particular regarding the attraction to policy making dimension. Third, we study public servants and employees in a particular profession, the police, which has specific characteristics that are not necessarily shared by other government agencies. Thus, we cannot claim representativeness for the public service in general. Nonetheless, we share Oberfield's (2014, p. 215) view that 'police share much in common with the general class of bureaucrats: they reckon with voluminous rules and regulations, they must learn to apply the general to the specific, and they are symbolic of the governments that employ them'.

Conclusion

In broader theoretical terms, we conclude that important capabilities of organizational change reside within frontline members who take charge of continuous improvements in order to deal with an increasingly complex work environment. Our focus was on a particular *behaviour* that drives first-order, evolutionary or continuous change in work-related structures and procedures. We consider such a behavioural perspective on organizational change in the public sector as important because it is not clear if and how positive attitudes towards change translate into high levels of proactivity in actual extra-role behaviours.

Furthermore, cumulative improvements from bottom up may be a supplement to, or substitute of, deep-cutting reforms from top down, which often do not live up to the expectations of managers and policy-makers and evoke growing resistance to change on the part of many organizational members (de Vries 2013). Exploring TCB, and the organizational and individual drivers of such behaviour, provides microfoundations of the capabilities that are necessary to sustain the long-term adaptability of public organizations. Since such capabilities are distributed within the organization, traditional images of bureaucratic organizations with coercive chains of commands are challenged.

A behavioural approach to microfoundations of change-related capabilities is of high practical relevance, too, because how to build these capabilities into the organization is a key question for public managers (Piening 2013). Facilitating supportive organizational structures and cultures as well as providing access to resources are important practical implications of our findings if TCB is to be fostered. Caring and helping behaviours across different layers of the hierarchy are likely to elevate perceptions of organizational support. This resonates with HR policies that consider PSM and proactivity in the attraction, selection and retention of personnel. Likewise, training and development of transformational leaders would indirectly contribute to TCB through motivational effects on the part of followers.

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3 These managerial implications are conditional on the desirability of TCB. We have
4 outlined the benefits of TCB in building distributed capabilities of change into public organi-
5 zations, but it needs to be acknowledged that such behaviour by subordinates may also pose
6 severe challenges to public managers. If TCB involves variation of, and deviation from, exist-
7 ing rules and procedures as well as experimentation with new ones, the reliability of public
8 organizations in general and law enforcement organizations more specifically may be threat-
9 ed. Public managers thus have to balance the intended and potentially unintended effects of
10 TCB.
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23 Notes

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25 ¹ German Civil Service Salary Grading Scale: Lower grades A2–A6, Middle grades A6–A9, Upper grades A9–
26 A13, Highest grades A13–A16 / B1–B11; University degree required to enter at grade A13.
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28 ² We also conducted Wald tests to compare the PSM coefficient to the coefficients of the other main independ-
29 ent variables in Model 8. Results indicate that the coefficient on PSM is statistically different from POS, red
30 tape, access to resource and transformational leadership ($p < 0.001$ for all tests).
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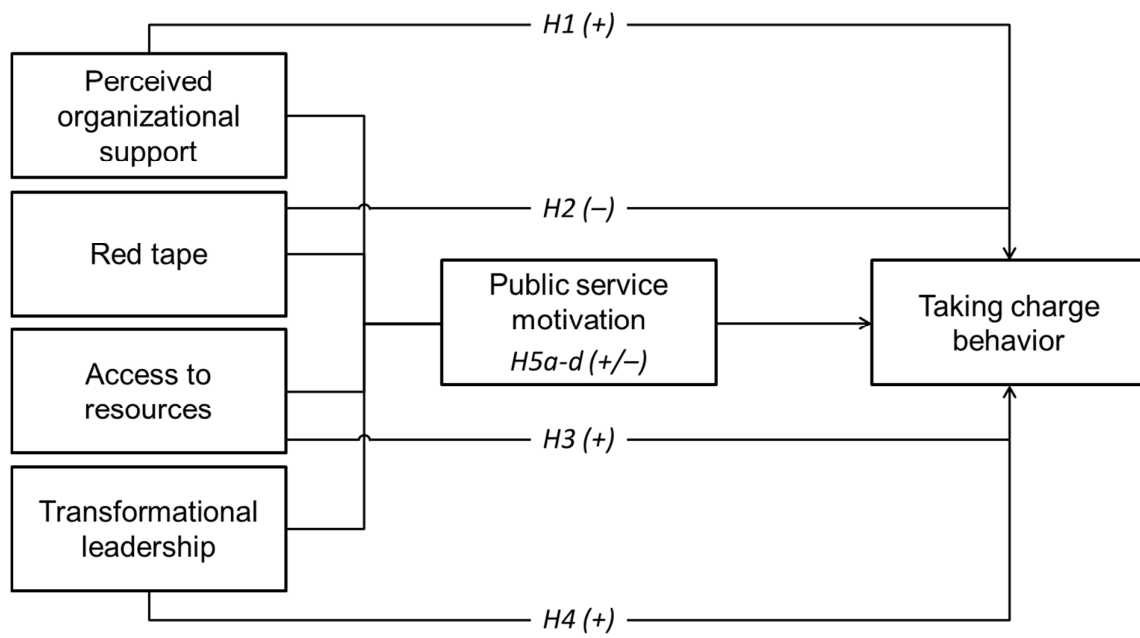
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Figure 1. Conceptual Model



Peer Review

Table 1. Sample characteristics

Total number of respondents		1165	100.0%
Gender	Male	871	74.8%
	Female	294	25.2%
Age	≤ 20	3	0.3%
	21–30	116	10%
	31–40	261	22.4%
	41–50	309	26.5%
	51–60	447	38.4%
Marital status	> 60	29	2.5%
	Single	263	22.6%
	Married	747	64.1%
	Divorced	151	13.0%
Educational level	Widowed	4	0.3%
	certificate of secondary education (9 years) ^a	14	1.2%
	certificate of secondary education (10 years) ^b	284	24.4%
	vocational qualification ^c	99	8.5%
	entry qualification for university of applied sciences ^d	259	22.2%
	entry qualification for university ^e	326	28.0%
	degree from university ^f	70	6.0%
Employment volume	PhD ^g	5	0.4%
	Other	108	9.3%
Leader gender	Full-time	1048	90.0%
	Part-time	117	10.0%
Leadership duration	Male	1043	89.5%
	Female	122	10.5%
Job role	< 6 months	171	14.7%
	6-12 months	117	10.0%
	1-2 years	245	21.0%
	3-5 years	280	24.0%
	> 5 years	352	30.2%
Salary Grade	Law enforcement officers ('Vollzugsbeamte')	1003	86.1%
	Administrative officers ('Verwaltungsbeamte')	36	3.1%
	Administrative employees ('Verwaltungsangestellte')	126	10.8%
Salary Grade	Grades A2–A10	719	61.7%
	Grades A11–A15	320	27.5%
	Missing (=privately employed staff)	126	10.8%

Note. ^a Hauptschulabschluss: 9 years; ^b Mittlere Reife: 10 years; ^c Abgeschlossene Ausbildung;

^d Fachhochschulreife; ^e Hochschulreife; ^f Universitätsabschluss; ^g Promotion.

Table 2. Descriptive statistics, correlations and reliabilities of main constructs

		M	SD	1	2	3	4	5	6	7
1	TCB	3.55	0.93	(0.85)						
2	POS	3.02	0.53	0.168***	(0.91)					
3	Global red tape	8.58	1.61	-0.032	-0.203***	(n/a)				
4	Access to resources	2.78	0.97	0.145***	0.373***	-0.253***	(0.90)			
5	Transformational leadership	2.66	0.89	0.134***	0.370***	-0.096**	0.269***	(0.91)		
6	PSM	3.66	0.60	0.351***	0.084**	0.002	-0.015	0.120***	(0.73)	
7	Goal Clarity	3.45	0.87	0.118***	0.353***	-0.238***	0.259***	0.263***	0.061*	(0.74)

Note. Cronbach's alpha in parentheses, * p<0.05, ** p<0.01, *** p<0.001; TCB: Taking Charge Behavior, POS: Perceived Organizational Support, PSM: Public Service Motivation.



Table 3. Results of multiple regression analysis (robust standard errors in parentheses)

	(1) TCB	(2) TCB	(3) TCB	(4) TCB	(5) PSM	(6) TCB	(7) TCB	(8) TCB
<i>Hypotheses</i>								
Perceived Org. Support	0.176*** (0.038)				0.025 (0.059)	0.099*** (0.026)		0.087** (0.036)
Red tape, global		0.011 (0.026)			0.010 (0.017)	0.026 (0.026)		0.022 (0.022)
Access to resources			0.116*** (0.027)		-0.044 (0.024)	0.097*** (0.027)		0.117*** (0.029)
Transformational leadership				0.102*** (0.028)	0.086*** (0.016)	0.061** (0.025)		0.022 (0.020)
PSM							0.458*** (0.055)	0.457*** (0.047)
<i>Controls^a</i>								
Goal clarity	0.074 (0.043)	0.113** (0.048)	0.078 (0.045)	0.083* (0.040)	0.021 (0.022)	0.059 (0.046)	0.094** (0.034)	0.049 (0.036)
Female leader	-0.153** (0.066)	-0.162** (0.068)	-0.156* (0.073)	-0.179** (0.074)	-0.047 (0.060)	-0.159* (0.071)	-0.148* (0.076)	-0.137 (0.078)
Female	-0.240** (0.086)	-0.248** (0.086)	-0.260** (0.088)	-0.249** (0.086)	-0.248*** (0.041)	-0.248** (0.090)	-0.133 (0.084)	-0.135 (0.085)
Full time	0.008 (0.099)	-0.009 (0.010)	-0.012 (0.099)	-0.011 (0.094)	-0.112* (0.054)	-0.008 (0.101)	0.044 (0.095)	0.043 (0.098)
Law enforcement officers	0.053 (0.193)	0.051 (0.183)	0.084 (0.188)	0.033 (0.188)	0.097* (0.042)	0.072 (0.196)	-0.006 (0.187)	0.028 (0.200)
Administrative employees	0.327** (0.112)	0.369*** (0.106)	0.341** (0.115)	0.349** (0.115)	0.332*** (0.075)	0.328** (0.120)	0.209** (0.078)	0.176* (0.088)
Age up to 20	-0.120 (0.327)	-0.074 (0.345)	-0.151 (0.325)	-0.218 (0.362)	0.205 (0.140)	-0.217 (0.394)	-0.216 (0.380)	-0.310 (0.441)
Age 21 to 30	0.129	0.156	0.165	0.105	-0.011	0.132	0.136	0.137

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	TCB	TCB	TCB	TCB	PSM	TCB	TCB	TCB
	(0.099)	(0.094)	(0.095)	(0.098)	(0.074)	(0.097)	(0.074)	(0.076)
Age 31 to 40	0.161**	0.183**	0.191***	0.158**	-0.161**	0.166***	0.243***	0.239***
	(0.054)	(0.057)	(0.048)	(0.052)	(0.063)	(0.048)	(0.047)	(0.033)
Age 41 to 50	0.204***	0.211***	0.220***	0.195***	-0.053	0.209***	0.226***	0.233***
	(0.042)	(0.044)	(0.046)	(0.044)	(0.047)	(0.046)	(0.040)	(0.043)
Age above 60	0.065	0.075	0.0260	0.076	0.074	0.038	0.049	0.004
	(0.154)	(0.142)	(0.144)	(0.149)	(0.094)	(0.150)	(0.108)	(0.112)
Low educational level ^b	-0.370***	-0.352***	-0.362***	-0.360***	-0.076	-0.375***	-0.320***	-0.340***
	(0.093)	(0.088)	(0.086)	(0.093)	(0.044)	(0.094)	(0.091)	(0.097)
Salary grade A2 to A10	-0.467***	-0.513***	-0.495***	-0.485***	-0.234***	-0.470***	-0.394***	-0.363***
	(0.055)	(0.062)	(0.056)	(0.052)	(0.025)	(0.063)	(0.052)	(0.063)
Constant	3.104***	3.434***	3.294***	3.390***	3.644***	2.745***	1.786***	1.079*
	(0.312)	(0.428)	(0.266)	(0.317)	(0.269)	(0.475)	(0.420)	(0.547)
Observations	1,165	1,165	1,165	1,165	1,165	1,165	1,165	1,165
Adjusted R-squared	0.139	0.131	0.144	0.139	0.101	0.150	0.211	0.228

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; ^a Not displayed (n.s.): duration of leadership relationship, marital status; ^b Below entry qualification for university or university of applied sciences.

Appendix I: Constructs and items

Construct	English items	Factor Loading	Cronbach's α
Taking charge behavior adapted from Morrison and Phelps, 1999 & (5-point Likert-Scale, 1 = strongly disagree to 5 = strongly agree)			
Inwieweit treffen die folgenden Aussagen auf Sie zu....	How much do you agree with the following statements ...		0.85
Ich versuche, Verfahrensweisen für die Durchführung meiner Arbeit zu verbessern.	... this person tries to bring about improved procedures in your workplace?	0.73	
Ich versuche, neue effektivere Arbeitsmethoden einzuführen.	... this person tries to institute new work methods that are more effective?	0.85	
Ich versuche, neue Lösungswege für dringliche Probleme der Organisation umzusetzen.	... this person tries to implement solutions to pressing organization problems?	0.74	
Ich versuche, meiner / meinem direkten Vorgesetzten neue effektivere Arbeitsmethoden vorzuschlagen.	...this person tries to introduce new structures, technologies, or approaches to improve efficiency	0.78	
Perceived organizational support adapted from Rhoades et al., 2001 (5-point Likert-Scale, 1 = strongly disagree to 5 = strongly agree)			
Meine Organisation würde einen von mir begangenen, aber unbeabsichtigten Fehler entschuldigen.	My organization would forgive an honest mistake on my part.	0.69	0.91
Meine Organisation schenkt mir keine große Beachtung. (R)	My organization shows little concern for me.	-0.59	
Meine Organisation ist an meiner Meinung interessiert.	My organization cares about my opinions.	0.79	
Meine Organisation berücksichtigt ernsthaft meine Ziele und Werte.	My organization strongly considers my goals and values.	0.80	
Meine Organisation hilft mir, wenn ich ein Problem habe.	Help is available from my organization when I have a problem.	0.83	
Meine Organisation ist bereit, mir zu helfen, wenn ich sie um einen besonderen Gefallen bitte.	My organization is willing to help me if I need a special favor.	0.78	
Meine Organisation würde mich ausnutzen, wenn sie dazu Gelegenheit hätte. (R)	If given the opportunity, my organization would take advantage of me.	-0.69	
Meiner Organisation ist mein Wohlbefinden wichtig.	My organization cares about my well-being.	0.82	

Construct	English items	Factor Loading	Cronbach's α
Access to resources adapted from Spreitzer, 1996 (5-point Likert-Scale, 1 = strongly disagree to 5 = strongly agree)			0.90
Ich kann diejenigen Ressourcen beschaffen, die nötig sind, um neue Ideen voranzubringen.	I can obtain the resources necessary to support new ideas.	0.88	
Wenn ich zusätzliche Ressourcen für meine Arbeit benötige, bekomme ich diese für gewöhnlich auch.	When I need additional resources to do my job, I can usually get them.	0.90	
Ich habe Zugriff auf diejenigen Ressourcen, die ich benötige, um meine Arbeit gut zu machen.	I have access to the resources I need to do my job well.	0.82	
Global red tape adapted from Bozeman and Feeny, 2011 (11-point drop-down list, 0 = no red tape to 10 = high red tape)		n/a	n/a
Nehmen Sie bitte für den Augenblick an, „Bürokratisierung“ sei definiert als das Ausmaß an mühsamen, dem Arbeitsalltag eher hinderlichen Abläufen und Prozessen. Diese wirken sich negativ auf den Grad der eigentlichen Aufgabenerfüllung Ihres Arbeitgebers aus. Wie beurteilen Sie den Grad der Bürokratisierung unter der zuvor beschriebenen Annahme bei Ihrem Arbeitgeber? Bitte bewerten Sie diese Frage auf einer Skala von 0 = keine Bürokratisierung bis 10 = höchstes Ausmaß an Bürokratisierung.	If red tape is defined as burdensome administrative rules and procedures that have negative effects on the organization's effectiveness, how would you assess the level of red tape in your organization?		
Transformational leadership (items from © Bass and Avolio, 1995; validated German items from Felfe, Tartler and Liepmann, 2004) (5-point Likert-Scale, 1 = very seldom to 5 = very often)	Items blinded due to copyright		0.91
	MLQ1	0.79	
	MLQ2	0.72	
	MLQ3	0.82	
	MLQ4	0.69	
	MLQ5	0.79	
	MLQ6	0.77	
	MLQ7	0.74	

Construct	English items	Factor Loading	Cronbach's α
		MLQ8	0.78
Public service motivation adapted from Giauque et al., 2011 and Wright et al., 2012 (5-point Likert-Scale, 1 = strongly disagree to 5 = strongly agree)			0.73
Mir ist es wichtig, dass die öffentliche Verwaltung sinnvolle Aufgaben übernimmt.	Meaningful public service is very important to me.	0.44	
Im Alltag werde ich oft daran erinnert, wie abhängig wir voneinander sind.	I am often reminded by daily events how dependent we are on one another.	0.38	
Etwas in der Gesellschaft zu verändern bedeutet mir mehr als persönliche Erfolge.	Making a difference in society means more to me than personal achievements.	0.58	
Ich bin bereit Opfer zu bringen, wenn sie dem Wohl der Gesellschaft dienen.	I am prepared to make sacrifices for the good of society.	0.53	
Ich habe keine Angst, mich für die Rechte anderer einzusetzen, auch wenn ich dafür belächelt werde.	I am not afraid to go bat for the rights of others even if it means I will be ridiculed.	0.57	
Ich interessiere mich sehr für Politik.	I am very interested in politics.	0.48	
Mit anderen über Politik zu diskutieren gefällt mir sehr.	I like to discuss political subjects with others.	0.49	
Goal clarity adapted from Wright et al., 2012			0.74
Der Auftrag dieser Organisation ist allen, die hier arbeiten, verständlich.	The organization's mission is clear to almost everyone who works here.	0.76	
Es ist nicht schwer, Außenstehenden die Ziele der Organisation zu erklären.	It is easy to explain the goals of the organization to outsiders.	0.62	
Diese Organisation hat klar definierte Ziele.	This organization has clearly defined goals.	0.74	

Felfe, J., Tartler, K., & Liepmann, D. (2004). Advanced research in the field of transformational leadership. *Zeitschrift für Personalforschung*, 18, 1–27.

Appendix II: Robustness checks (*for peer review only*)

In cross-sectional data, bias due to unobserved variables might arise. Hence, we run a number of robustness checks. Two analytic strategies are useful in this respect. First, we run various split sample regressions to show that the main effects hold under different circumstances. Individuals in different subsamples might react differently on our main variables, public service motivation (PSM), transformational leadership and taking charge behaviour (TCB). Thus, subsample regressions are a useful approach to investigate the robustness of results further. Second, we use an instrumental variable approach which helps to overcome issues of endogeneity (Semadini, Withers and Certo, 2014).

Table A.1 summarizes the results for the different subsamples. Table A.2 displays the results of the instrumental variable regressions. For space concerns, the tables display results for the key variables only. However, all variables as displayed in table 3 of the main manuscript have been included in the regressions.

Subsample Regressions

We decided to create four different subsamples. First, PSM has been shown to be a driver of sector attraction (Clerkin & Cogburn, 2012, Pedersen 2013). Additionally, joining police services in Germany is a career decision made early in ones working life. However, evidence also shows that PSM might decline with age and organisational socialization due to experience of red tape. Therefore, older police officers' PSM might be lower than that of early career officers. However, the effect holds when we run the analysis on service members between 51 and 60 years of age.

Second, it might be that only those employees who are generally satisfied with their jobs display PSM-driven TCB whereas those who are not satisfied would not care for the organisation anyway. Thus, we define highly satisfied police service members as those individuals who indicate job satisfaction levels above one standard deviation from the mean and remove them from the sample. However, the results hold for the subsample of unsatisfied to moderately satisfied employee, too.

Ultimately, work-family conflict might play a role and it might be the case that those employees who have to care for families are less concerned for the organisation and, as a consequence, show less PSM-driven TCB than single employees. This is because single employees have the opportunity to focus exclusively on their careers while married officers face additional family constraints. However, also here the results hold for both subsamples.

Table A1. Subsample regressions

	(1) PSM	(2) TCB	(3) PSM	(4) TCB
<i>Subsample 1</i>				
	Age (51-60)		Age (not 51-60)	
Transformational leadership	0.100*** (0.038)	0.026 (0.054)	0.080*** (0.026)	0.021 (0.038)
PSM		0.316*** (0.069)		0.546*** (0.054)
Observations	447	447	718	718
Adjusted R-squared	0.053	0.202	0.101	0.242
<i>Subsample 2</i>				
	Job satisfaction ⁺ (high)		Job satisfaction (low)	
Transformational leadership	0.097*** (0.026)	0.033 (0.037)	0.075* (0.039)	-0.007 (0.057)
PSM		0.444*** (0.052)		0.465*** (0.074)
Observations	765	765	400	400
Adjusted R-squared	0.121	0.229	0.049	0.174
<i>Subsample 3</i>				
	Single		Not Single	
Transformational leadership	0.111** (0.045)	0.063 (0.069)	0.078*** (0.025)	0.011 (0.035)
PSM		0.363*** (0.098)		0.480*** (0.047)
Observations	263	263	902	902
Adjusted R-squared	0.112	0.076	0.077	0.259
<i>Subsample 4</i>				
	Married		Not Married	
Transformational leadership	0.085*** (0.027)	0.016 (0.038)	0.087** (0.036)	0.050 (0.056)
PSM		0.461*** (0.051)		0.445*** (0.077)
Observations	747	747	418	418
Adjusted R-squared	0.086	0.248	0.097	0.169

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; robust standard errors in parentheses; results on control variables are suppressed to save space. PSM: public service motivation Transf. Lead.: transformational leadership.

⁺ Job satisfaction split at the mean.

Instrumental Variable Regression

Cross-sectional data has the downside of limiting our ability to make causal claims. While we cannot change the nature of the dataset, we can exploit the dataset further to acknowledge potential omitted variable bias. In order to do so, we use an instrumental variable approach which helps to solve problems of endogeneity (Semadini, Withers and Certo, 2014). A variable that is correlated with a specific endogenous variable but not correlated with its error term is a suitable instrument for the particular variable. We exploit two instrumental variables that are contained in the dataset but have not been used in the main analyses.

First, our instrument for transformational leadership is an item stemming from the “use of performance information” (UPI) measure. It asks respondents if supervisors regularly use performance information to identify priorities. Following Moynihan, Pandey and Wright (2012), use of performance information is related to transformational leadership. However, since this item focuses on problem identification it is likely not to be correlated with TCB focusing on implementing action.

Second, our instrument for PSM is an item adapted from the voice behaviour (VB) battery that was included in the survey (Van Dyne & LePine 1998). It asks respondents to declare how often they raise issues that they perceive to be present in their organisational unit. As such issues are likely to contribute to the whole work unit such behaviour can be interpreted as driven by PSM. However, since it is not leaning towards implementation it is detached from TCB.

Table A.2 presents the results of the two stage least squares (2sls) instrumental variable estimations. Models 1 and 3 are results for the first stage, models 2 and 4 are results for the second stage. Only main variables are displayed, all others suppressed for reasons of brevity. Results confirm at least partial mediation, therefore confirm PSM as a strong mediator in the transformational leadership – TCB relationship.

Table A2. Instrumental variable regression

	(1) 1 st Stage Transf. Leadership	(2) PSM	(3) 1 st Stage PSM	(4) TCB
Transformational leadership		0.181*** (0.040)		-0.332** (0.054)
Instrument 1: UPI	0.292 *** (0.029)		0.055 *** (0.010)	
PSM				2.567*** (0.021)
Instrument 2: VB			0.108*** (0.009)	
Observations	1,165	1,165	1,165	1,165
Controls	YES	YES	YES	YES
Wald Chi-Square		159.70***		2324.34***
1 st stage F	15.62***		6.20***	

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; cluster robust standard errors in parentheses, only main variables displayed. Results on control variables are suppressed to save space. Control variables displayed in table 2 of main manuscript. UPI: use of performance information, VB: voice behaviour, PSM: public service motivation Transf. Lead.: transformational leadership

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- Peer Review

Appendix III: Representativeness (*for peer review only*)

To evaluate the representativeness of the sample for the total police force in Germany, we requested data on gender, employment volume, staff category, age and salary grade from the Federal Statistical Office. Chi-square tests show that the sample is representative to the population as for gender ($\chi^2(1)=0.081$, $p=.776$) and employment volume ($\chi^2(1)=0.004$, $p=.948$). Public servants (as opposed to employees) are slightly overrepresented in the sample ($\chi^2(1) = 13.383$, $p<.001$). This might be the reason why respondents were also slightly older than the average of the total police force ($\chi^2(5) = 66.908$, $p<.001$) and had higher incomes ($\chi^2(4) = 210.76$, $p<.001$). However, as these deviations from the total population are rather small, we have reason to assume that our sample is fairly representative of the German police.