



# Working more, paying less: differential effects of austerity measures on the motivation of public employees

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## Abstract

Public organizations worldwide are increasingly expected to perform more effectively at a lower cost. Austerity measures are thus taken, affecting the wellbeing of hundreds and thousands of employees. By utilizing the 6th European Working Conditions Survey (EWCS) completed by 10,112 public employees, we investigate in this study the contingencies that affect the relationships among longer work hours, reduced pay, and work motivation. We found that austerity-oriented human resources practices not only diminish the motivation of public sector workers, they also (1) differentially affect these workers in various hierarchical positions and (2) can be counteracted by perceived openness of communication. This study will serve as a timely reminder that public organizations experiencing cutbacks are able to significantly lessen the frustration of their workforce by taking certain essential organizational factors into account.

**Keywords** Pay cuts · Longer working hours · Span of supervision · Ex-ante communication · Work motivation

## 1 Introduction

Since the early 1980s, there have been countless efforts across the globe to reform governments in order to improve the performance of public agencies amid economic recessions and anti-tax uprisings (Ege, 2019; Gruening, 2001). Collectively dubbed

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the “new public management” (NPM) movement, these efforts embrace market disciplines (Diefenbach, 2009), predominantly focus on increasing the cost-effectiveness of public organizations (Andersen et al., 2016; Boruvka & Perry, 2020; Kamensky 1996), and strive to develop approaches through which public goods and services can be delivered in a more efficient and inexpensive manner<sup>1</sup> (Rutherford & Voet, 2019; Warner et al., 2021). Under NPM, public employees are empowered and guided by performance indicators, fostering a shift towards business-like and proactive attitudes (Diefenbach, 2009).

While popularized nearly three decades ago, the core tenets of NPM remain much in vogue to date. This is in part because “an atmosphere of austerity and retrenchment”, coined years ago by Jick and Murray (1982, p. 141) has increasingly become the new normal. As indicated by the statistics from European Federation of Public Service Unions, 19 countries imposed pay cuts or pay freezes in the first years of the economic crisis, impacting on over 20 million workers. In the meanwhile, several governments were freezing recruitment and cutting jobs and forcing public-sector employees to work longer hours for the same pay.<sup>2</sup> The prevalence of these austerity programs was triggered by the 2008 worldwide economic tsunami and the 2009 Eurozone debt crisis that resulted in soaring unemployment rates in many European countries. It was further fueled by the COVID-19 pandemic that has led to massive community lockdowns and business shutdowns (Curley & Federman, 2020; Gaynor & Wilson, 2020; Moon, 2020). Under unprecedented pressure to ease fiscal hardships and regain public trust, government executives around the world have attempted to strengthen bureaucratic performance and accountability as well as reduce operational costs by respectively increasing the working hours and decreasing the salary of their employees (e.g., Kiefer et al., 2015; Raudla et al., 2015; Schmidt et al., 2017). Hence, a key and timely research question arises as to how these practices influence the work-related motivation of public sector participants, which is deemed one of the key contributors to the efficiency and effectiveness of public organizations (e.g., Andersen et al., 2016; Rainey & Steinbauer, 1999; Wright, 2004).

The majority of the existing research touches upon how the austerity measures impact the organizational behavior or the strategies public organizations use to respond to budgetary cutbacks (e.g., Esteve et al., 2017; Rutherford & Voet, 2019). Yet, to our knowledge, only the collective effects of a panoply of austerity measures on employees’ work attitudes have been examined and the coping strategies are framed by and largely at the macro-level, such as the elimination of programs or searches for new funding sources (Jick & Murray, 1982; Pollitt & Bouckaert, 2017). These limitations should not be overlooked, as public leaders (1) are less likely to simultaneously apply all austerity approaches at their disposal to cope with gloomy external environments or meet elevated public expectations and (2) do not

<sup>1</sup> Classically referred to as “work better and cost less” (Gore 1993).

<sup>2</sup> “Pay in the public services-how workers continue to pay for the crisis”. Retrieved on May 25, 2022 from [https://www.csee-etuice.org/images/CALLS/EPSU-ETUCE\\_Briefing\\_Pay\\_in\\_the\\_Public\\_Sector.pdf](https://www.csee-etuice.org/images/CALLS/EPSU-ETUCE_Briefing_Pay_in_the_Public_Sector.pdf).

necessarily have the power to cut programs or broaden funding channels at their will. In reality, as suggested by Randma-Liiv and Kickert (2017, p. 159), even “politicians may prefer efficiency savings [i.e., doing more] over straight cutbacks [i.e., getting less].” In this scenario, exploring the contingencies of how various austerity measures might affect employees’ on-the-job motivation will enable public leaders to make wiser and more realistic decisions.

Austerity, by its nature, refers to the broad set of measures which take the crisis and public debt as a pretext to reduce welfare states, cut public services, reduce workers’ rights, and put downward pressure on wages (Addabbo et al. 2018). Its most common manifestations in administrative practice are the increase in work hours and the decrease in salary. For instance, in Italy, 20% of public officials were to be fired as part of the austerity drive in 2012, resulting in a dramatic increase in working time for the remaining public employees.<sup>3</sup> During the very same period of time in Spain, public sector workers were subject to a salary freeze and a 16% reduction in their health- and education- related fringe benefits.<sup>4</sup> These melancholic conditions were also no better in countries outside of the European Union. Serbia, for example, carried out its austerity plan in 2014 by imposing a 10%- and 20%-pay cut on those who earned over €211 and €844 respectively.<sup>5</sup> Given that many scholarly works have emphasized the importance of satisfying salary and moderate work hours in maintaining workers’ motivation (Giurge & Woolley, 2022; Muo, 2013; Opachl and Dunnette, 1966; Rynes et al., 2004), the prevalence of austerity measures in Europe proposes an urgent call to look into how the deteriorating work conditions affects public servants’ job motivation.

In this study, we delve into the intricate relationships among decreased salary, increased work hours, employee motivation, and relevant organizational factors by analyzing the 6th European Working Conditions Survey (EWCS) taken by 10,112 public employees across Europe in 2015. “Going backward in its aims to become the most competitive economy in the world”, as lamented by the head of the European Trades Union in an exclusive interview,<sup>6</sup> Europe has been written off in recent years as a continent that has long passed its heyday. Imaginably, its ability to withstand fallout stemming from global financial crises pales in comparison with superpowers such as the United States and China. As implied by the aforementioned examples of austerity governance in Europe, the impacts of a battery of these austerity measures were still freshly felt among European public workers when the 6th EWCS was administered, offering us fertile and relatively more truthful data for analysis.

Although it would appear obvious at first glance that employee motivation would suffer in the wake of longer hours and less income, we identified circumstances

<sup>3</sup> Valentina Pop, “Italy approves more cuts as recession worsens” (2012). Retrieved on January 10, 2021 from: <https://euobserver.com/economic/117183>.

<sup>4</sup> BBC News, “EU austerity drive country by country” (2012). Retrieved on January 10, 2021 from: <https://www.bbc.com/news/10162176>.

<sup>5</sup> Gordana Andric, “Serbia decides to cut pension and salaries” (2014), Retrieved on January 10, 2021 from: <https://balkaninsight.com/2014/09/19/serbia-decides-to-cut-down-pensions-and-salaries>.

<sup>6</sup> Richard Carter, “EU ‘going backwards’ on economic goals” (2004). Retrieved on January 10, 2021 from: <https://euobserver.com/economic/14883>.

under which these unwelcome but necessary approaches can result in less undesirable outcomes. Employing the Johnson-Neyman technique which is capable of both determining significance and estimating parameter values (Johnson & Fay, 1950), our findings reveal that public employees are more receptive to working overtime when they supervise 14 or more subordinates or receive advanced information about impending restructuring plans. In addition, motivation of public employees is actually enhanced, rather than jeopardized, by a decline in their incomes when they are in major supervisory positions, which is defined as having more than 398 subordinates.

In sum, this study offers evidence that calls into question the conventional wisdom. Public sector workers do not always resent working longer hours or getting paid less; rather, the sentiments they hold towards these objectionable solutions are contingent upon their supervisory span in the workplace hierarchy and their perception of transparency regarding decision-making. Notably, the negative motivational effect of decreased pay is less likely to be washed out by external factors: neither the presence of open communication nor the assumption of non-top supervisory roles is capable of cheering up public employees facing pay reductions. Compared to longer hours, reduced pay clearly deals a more serious blow to the motivation of public employees, particularly if they have not quite climbed up the administrative ladder to the top echelon. Termed as "a virus of austerity" by some observers, the Covid-19 pandemic has inflicted widespread damage on numerous European countries, further straining their recovery from the global financial crisis of 2008 (Randma-Liiv & Kickert, 2017).<sup>7</sup> In fact, some researchers have found that austerity is poised for a dynamic comeback in the post-pandemic world (Kentikelenis & Stubbs, 2022). Regarding this, the implications generated from this study are bound to be timely and useful for public administration practice in the current post-Covid-19 era. That is, by making the best of austerity measures, public organizations in these countries might still be able to retain a generally motivated workforce in the midst of all inevitable rough patches.

Our research makes several significant contributions to existing knowledge. Firstly, it extends our understanding of the impact of austerity and cutback measures on their direct recipients—the public employees—a dimension that has been largely underexplored in prior research. Secondly, our study adds to the literature on work-related attitudes of public sector employees by revealing the distinct but equally adverse effects of pay cuts and extended working hours on their work motivation. Furthermore, it identifies the conditions under which these negative impacts can be mitigated. By employing the Johnson-Neyman technique, our research acknowledges the positive influence of ex-ante communication in sustaining employee motivation. It goes on to specify the particular range of supervisory span wherein public workers not only remain unaffected but may even respond positively to austerity actions.

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<sup>7</sup> "The 2008 global crisis impacted European countries to various degrees. After the 2008 banking crisis, which accelerated economic decline, the low point was reached in 2009 when all European countries faced negative growth" (Randma-Liiv & Kickert 2017, p. 160).

The remainder of this article is organized as follows. In the next section, we lay out the theoretical background of this research, discuss the extant studies on employees' work motivation, and posit our hypotheses. In the section that follows, we introduce the data we use and the measurement methods of the key variables. We then describe the analytical strategies we employ and empirical results we gain from our statistical analysis. We conclude our article with a summary of our findings and a discussion on the implications and limitations of this research.

## 2 Theoretical background and hypothesis development

Previous studies reveal an abundance of theories on employees' work motivation (Latham and Pinder 2005; Steers et al., 2004). Research on the particular determinants of this issue in the public sector can be divided into two major factions—one that focuses on employees' personal traits and the other highlights the organizational environment (Wright, 2004). As for the former, scholarship has identified that personal demographic characteristics like age (Boumans et al., 2011; Vandenabeele, 2011), gender (Bright, 2005; Riccucci, 2018) and education (Miller-Mor-Attias and Vigoda-Gadot, 2022; Taylor, 2005), and work values like the classic intrinsic-extrinsic dichotomy can exert marked effects on public workers' motivation. For instance, the distinction between intrinsic and extrinsic values suggests that one's intrinsic motivation stems directly from one's job performance or the work itself, whereas extrinsic motivation originates from external goals that are separate from the work, including, but not limited to, salary, security, and positive relationships with supervisors, co-workers and subordinates (Bozeman, 2010; Chen & Bozeman, 2013; Chen & Hsieh, 2015; Mann, 2006; Vandenabeele et al., 2014). With regard to the latter, scholars emphasize the vital importance of one's working environment (Perry & Porter, 1982; Wright & Davis, 2003) and indicate that factors such as organizational support (Homberg et al., 2019), chain of command issues (Jacobsen & Andersen, 2014), and transparency of policy (Anderfuhren-Biget et al., 2014) significantly influence one's motivation in the workplace.

Besides, job demands-resources (JD-R) model is insightful for this research (Bakker & Demerouti, 2014; Demerouti & Bakker, 2011) to examine how two salient and undesirable working conditions—long work hours and pay cuts—elicit negative psychological effects among employees (Conway et al., 2014; Ryu, 2016; Wright et al., 2013). According to this theory, work environments can be characterized in terms of either job demands that are associated with energy costs (i.e., job stress, task complexity, and role ambiguity) or job resources that help employees to cope with these job demands, satisfy basic psychological needs, and achieve organizational goals (Bakker, 2015; Crawford et al., 2010). Long work hours and pay cuts are two relevant job demands that merit scrutiny. Scholarship has found that the long work hours can undermine the perceived positive aspects of a job, quickly leading to a decline in motivation and engagement (Haun et al., 2018; Lodge & Hood, 2012). Moreover, work stress caused by protracted office hours breaks down employee optimism and efficiency, which eventually leads to exhaustion and lower output (Rousseau 2011). Likewise, decreased salaries conflict with the psychological contract

between the employee and employer that rewards will be commensurate with personal contributions and performance (Johnson & O'Leary-Kelly, 2003). Pay deductions for public employees, in particular, may profoundly exacerbate emotional stress since these workers' salaries are rarely subject to a possible decline (Somers & Birnbaum, 2000).

In addition, existing literature on the impact of cutbacks on public employment has mostly revealed a negative relationship between various austerity measures and the wellbeing, satisfaction, and commitment of public-sector staff (Conway et al., 2014; Esteve et al., 2017; Van der Voet & Vermeeren, 2017). Although the relevant evidence for the undesirable and disruptive impacts of austerity measures on work motivation is copious, there have been fewer studies on whether such impacts are contingent upon organizational factors and managerial practices (Beckers et al., 2004; Conway et al., 2014). This study is thus intended to specify and test the potential moderators of the relationship between austerity measures and public-sector workers' job motivation. By drawing on the prior works and applying the JD-R model in the context of austerity movement in European countries, this research is expected to advance the current discussion on how adverse working conditions are related to employee motivation.

Among the wide range of contingent factors in the public workplace, employees' span of supervision and communication within organization hold great potential to shape employees' work experience and attitudes, causing variations in employees' perception of austerity measures. Specifically, the span of supervision is a leadership contingency variable that can directly influence workers' role orientation and their attitudes toward the initiations and programs introduced by their organization. Besides, open communication can be utilized as an effective tool for winning employees' understanding and trust and organizing preparations for organizational change. Both of these two factors and their respective effects on individual feelings and organizational performance have been widely explored by scholars (Bucata & Rizescu, 2017; Putnam et al., 1996; Spreitzer & Mishra, 1999). By introducing these two variables into the examination of the relationship between austerity measures and public servants' motivation, this research is expected to disclose useful insights into the contingencies of public employees' psychology in the austerity era.

In the next section, we develop hypotheses to explore whether and how public employees' (1) span of supervision and (2) perceived openness and timeliness of communication taking place before organizational restructuring occurs moderate the main relationships of interest. Two sets of hypotheses are illustrated below.

## 2.1 The moderating role of the span of supervision

The degree to which employees are affected by the stress and disruption evoked by austerity varies significantly within the organization. The span of supervision, which can be defined as the number of followers reporting formally and directly to a particular employee (Gittell, 2001; Schriesheim et al., 2000), noticeably shapes one's work context and therefore is potentially attributable to attitudinal variations among employees (Meier & Bohte, 2003). For instance, lower-level workers with limited

spans of supervision are usually more susceptible to organizational downsizing and less likely to participate in the decision-making process (Spreitzer & Mishra, 1999). Therefore, they are more likely to interpret the salary decline and increased work hours as leading to greater uncertainty with regard to their future work life and subsequently become hostile, lose their motivation, and withhold efforts (Bloom, 1999).

On the contrary, their supervisors and managers may react less negatively to such adversity in the work environment. According to the JD-R model, a large span of supervision could function as a job resource and act as a buffer against the undesirable, negative impact of job stress (Bakker, 2015). To be specific, public managers with a wider supervisory span possess relatively more resources to cope with anxiety, stress and uncertainty. For example, they are able to increase and improve their work efficiency and performance more easily by facilitating coordinated actions and channeling the efforts of their subordinates (Compton & Meier, 2016). In addition, because senior civil servants usually work on more interesting and complex tasks than their junior counterparts, they are less likely to feel overwhelmed by the increasing demands. Their enriched work assignments may also partly offset the negative attitudes associated with financial stress. Indeed, researchers such as Hargrove et al (2013) have highlighted the role that challenging work plays in generating positive energy that enables employees facing off-the-charts work quantity and quality to persevere.

For top executives, in terms of role perceptions and values, they usually have more perceived control over the austerity policies. The administrative elites' literature suggests that top executives tend to hold more optimistic views towards the organizations they lead (Frazier & Swiss, 2008). A survey of top civil service executives in Europe also found that they value the intrinsic elements of the job than by extrinsic aspects such as pay and job security (Steen & Weske, 2016). Therefore, top executives may even react positively if they consider austerity measures to be necessary for the long-term survival of the organization (Goffee & Scase, 1992; Inkson & King, 2011) or when pay cuts are substituted for forced turnover. Therefore, we propose that the adverse impacts caused by increased work hours and reduced income could be lessened by an increase in an employee's supervisory span.

H1a: *The negative relationship between increased work hours and work motivation will lessen as an employee's span of supervision expands.*

H1b: *The negative relationship between pay cuts and work motivation will lessen as an employee's span of supervision expands.*

## 2.2 The moderating role of communication before restructuring occurs

Organizations adopt distinct philosophies and practices when discussing restructuring and layoff plans with employees (Huang et al., 2012; Iverson & Zatzick, 2011; Marchington & Kynighou, 2012). An unintended consequence of downsizing is the negative impact it has on the work attitudes of those layoff survivors. Job insecurity could arise as employees may consider pay cuts and heavier workloads as a sign of future layoffs and become less motivated to perform their job duties and less committed to the organization at large. From a social network perspective, those whose

jobs are unaffected may also feel frustrated about losing friends from prior layoffs. To minimize these negative emotions, organizations can intervene in advance. The literature has emphasized the paramount importance of communication in alleviating employee stress and anxiety (Carrière & Bourque, 2008; Fenlason & Beehr, 1994; Goris, 2007). For example, in more decentralized organizations in which employees are informed and consulted by decision makers in advance of changes, employees are less likely to feel alienated from the decision-making authorities. According to the JD-R model, communication in this context functions as a job resource that helps employees more effectively handle job stress and be wary of burnout (Bakker, 2015). It helps employees understand the decisions surrounding the divestitures will first enhance their perceptions of the procedural justice of the layoffs (Gopinath & Becker, 2000; Men & Stacks, 2014). When promptly informed about the organizational changes and invited to share their thoughts with those in upper management, moreover, employees will feel much less worried about their career prospects than their counterparts who are kept in the dark. Besides, open communication could attenuate the negative impacts of austerity measures by giving employees time to better prepare for future organizational restructuring.<sup>8</sup> Thus, once instilled with a sense of preparedness and respect, employees are expected to consequently heighten their trust in and commitment to the organizations in which they work (Jiang & Probst, 2014; Nelissen & van Selm, 2008; Tourish et al., 2004). We hereby posit the following two hypotheses:

H2a: *The negative relationship between increased work hours and motivation will be lessened when employees are informed about organizational restructuring well before it occurs.*

H2b: *The negative relationship between pay cuts and work motivation will be lessened when employees are informed of organizational restructuring well before it occurs.*

### 3 Research design

#### 3.1 Sources of data

The data used in this study were obtained from the 6th European Working Conditions Survey (EWCS), which was administered in 2015 to employees in 35 countries and regions.<sup>9</sup> The data collection was performed by *Gallup Poll Europe* and its subsidiaries through face-to-face interviews with respondents. It merits mentioning

<sup>8</sup> In “Top Public Managers in Europe”, it was agreed that communication plays an increasingly important role in defining competency management in civil service. In the authors’ exact words, “*Several competencies were equally as important as in 2008 or even more important in 2015: leadership, strategic vision, communication, awareness/sensitivity, integrity and ethics*” (Kuperus and Rode 2016, p. 44).

<sup>9</sup> For more information about the metadata of respondent interviews in EWCS2015, please refer to this website: <https://www.eurofound.europa.eu/surveys/european-working-conditions-surveys/sixth-european-working-conditions-survey-2015>. The 35 countries and regions in the EU28 include, Norway, Switzerland, Albania, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, and Turkey.



that the EWCS project, which takes place every five years, was first carried out in 1990. The 6th EWCS (2015) is the latest wave with data publicly available.<sup>10</sup> Building on the valuable lessons learned from the previous five rounds, this batch gathers responses that help attain a more comprehensive portrait of workplace trends and sentiments shared among European workers. Each interview, which lasted an average of 45 min, was conducted in the respondent's home in his or her native language. All information was gathered and maintained in the strictest confidence according to ethical regulations, and the identity of each interviewee was kept anonymous during analysis. The total number of valid responses to this survey was 43,850. As this study focuses on the motivation of public employees, our eventual sample included only 10,112 respondents who self-reported as public sector employees. Among them, the percentage of male and female respondents were 39.4% and 60.6%, respectively. The mean age was 44.99 (SD=11.45) years old. Their average tenure in their organization was 13.2 years, with a standard deviation of 10.79 years.

## 3.2 Measurements

### 3.2.1 The dependent variable

As indicated by Esteve et al. (2017), work motivation can be understood in its broader sense as a force that drives individuals to accomplish personal and organizational goals. In the 6th EWCS survey, each participant was asked to rate the extent to which he or she agreed with the statement “the organization I work for motivates me to give my best job performance” with answers ranged from 1 to 5 (1 = never, 2 = rarely, 3 = sometimes, 4 = most of the time, 5 = always).

### 3.2.2 Explanatory variables

**3.2.2.1 Increased hours** Participants were asked<sup>11</sup>, “Did the number of hours you work per week in the last 12 months change in the following ways?” In the raw data set, respondents' answers ranged from 1 (increased a lot) to 5 (decreased a lot). To conform to the intuitive understanding that more intensive work schedules are associated with increased hours, we reverse-coded the original scale (1 = decreased a lot, 2 = decreased a little, 3 = no change, 4 = increased a little, 5 = increased a lot).

**3.2.2.2 Decreased salary** Participants were asked, “Did your salary or income in the last 12 months change in the following ways?” This variable was measured on a

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<sup>10</sup> The results of the 7th EWCS will be published in July 2021 and the full dataset should be made publicly accessible in one or two years from that point on. Given that the newest round of this landmark survey took place in the midst of the COVID-19 pandemic, computer-assisted telephone interviewing, in lieu of face-to-face interviewing, was utilized for the very first time to solicit responses.

<sup>11</sup> In measuring the two independent variables as indicated above, we assume that the change of hours and decreased income are closely related to organizational austerity practices. A glimpse at the event information, as aforementioned, suggests that public sector cuts was planned and implemented in the majority of European countries during the survey period (2014–2015).

five-point scale without conversion (1 = increased a lot, 2 = increased a little, 3 = no change, 4 = decreased a little, 5 = decreased a lot).

### 3.2.3 Moderators

**3.2.3.1 Span of supervision** Respondents were prompted to reveal, “how many people work under your supervision, for whom pay increases, bonuses or promotion depend directly on you?” In our sample, this supervisory span ranged from 0 to 2000, yielding an average number of 2.437 (SD = 27.78). Approximately 86% of the respondents did not have any employees under their supervision; 9.69% supervised one to 10 people; 3.84% supervised 11 to 100 people. 0.19% had 101–500 people, and 0.05% had more than 500 people.

**3.2.3.2 Work communication** Participants were asked to indicate whether there has been an organizational restructuring that has substantially affected their work. Those answered “Yes” (about 29.79% of the total sample) were then required to provide a “yes” or “no” answer to the question, “Before this restructuring or reorganization took place, were you informed of the coming changes?” The variable *work communication* was coded in a binary manner in which 0 = No communication and 1 = Communication. In our sample, 21.88% of the respondents answered “no communication,” and the remaining 78.12% indicated that they were informed ahead of time.

### 3.2.4 Controls

We controlled for several key demographic factors, including the gender, age, and nationality (country) of the respondents.<sup>12</sup> The number of years that officials have been working in the public sector (i.e., organizational tenure) was also included in the model. Less than a year of work experience was counted as zero in this study.

## 4 Analytical strategies and empirical results

Table 1 shows the means, standard deviations, and correlation coefficients of the main variables. We have found increased work hours to be negatively related to salary decrease ( $r = -0.243$ ,  $p < 0.01$ ), suggesting that protracted work hours and pay cuts might not have been simultaneously considered and hence necessitating the need to separately explore the impacts of these two approaches on employee motivation. Insignificant associations were shown between increased hours and work motivation, and between one’s span of supervision and work motivation. Finally,

<sup>12</sup> Several limitations of the data set warrant mentioning. (1) Among 10,112 respondents who self-reported as public sector employees, 50.97% of them did not provide information on their part-time/full-time job status; (2) only 0.54% confirmed that they worked on a part-time basis. Thus, it is difficult for us to identify if decreased salary is attributable to the change in job or in status. (3) Information on the types of public sector job is also unavailable.

**Table 1** Means, standard deviations, and correlations

|                        | Mean   | SD     | N      | 1        | 2        | 3        | 4        | 5        | 6     | 7       |
|------------------------|--------|--------|--------|----------|----------|----------|----------|----------|-------|---------|
| 1. Gender              | 0.394  | 0.489  | 10,109 |          |          |          |          |          |       |         |
| 2. Age                 | 44.993 | 11.451 | 10,082 | -0.005   |          |          |          |          |       |         |
| 3. Org tenure          | 13.204 | 10.787 | 9987   | 0.034**  | 0.579**  |          |          |          |       |         |
| 4. Increased hours     | 3.175  | 0.606  | 10,078 | -0.017   | -0.050** | -0.024*  |          |          |       |         |
| 5. Decreased salary    | 2.829  | 0.723  | 10,067 | -0.001   | 0.071**  | 0.089**  | -0.243** |          |       |         |
| 6. Span of supervision | 2.437  | 27.777 | 9949   | 0.045**  | 0.027**  | 0.041**  | 0.014    | -0.016   |       |         |
| 7. Work communication  | 0.781  | 0.414  | 2993   | -0.049** | -0.001   | -0.031   | -0.003   | -0.142** | 0.028 |         |
| 8. Work motivation     | 3.642  | 1.149  | 9957   | -0.005   | -0.018   | -0.043** | -0.013   | -0.107** | 0.003 | 0.142** |

\* p<0.05, \*\* p<0.01

we detected that salary decrease was negatively related to motivation ( $r = -0.107$ ,  $p < 0.01$ ) and work communication was positively related to motivation ( $r = 0.142$ ,  $p < 0.01$ ).

Since the data were collected in 35 countries, we first tried to analyze the data using a multilevel modelling approach. However, the results obtained from the data aggregation test suggested the inappropriateness of employing this cross-level analytical strategy. Except for *work communication*, all remaining variables of interest failed to meet basic requirement of  $ICC(1) < 0.05$ ,  $ICC(2) < 0.08$ , or  $Rwg < 0.08$ . In addition, given the ordinal nature of the variables of interest, we also considered using ordinal regression in data processing. However, both of the explanatory variables in this study violated the parallel line assumption, indicating that an ordinal regression strategy was not fit to our data.

In this case, we drew on the data analysis methods employed by existing literature that had utilized the Likert scale in the examination of work motivation (Dysvik & Kuvaas, 2008; Esteve et al., 2017; Orpen, 1997; Santisi, 2014) and decided on using ordinary least squares (OLS) regressions to test all posited hypotheses. To eliminate the potential confounding effects arising from distinct cultural backgrounds of the respondents, the country effect was controlled for. Specifically, we treated Albania as the reference (omitted) category and created 34 dummy variables that individually represented the remaining 34 countries. All these dummies were included as regressors. We also took into account the gender, age, and organizational tenure of the public employees in the models. Meanwhile, when testing *increased hours*-related hypotheses, *decreased salary* was controlled for; likewise, when testing *decreased salary*-related hypotheses, *increased hours* was controlled for. The first column (model 1), shown in Table 2, presents the results with control variables only. In model 2, we added two main independent variables and held the others constant. To test hypotheses 1a and 1b, we added the *span of supervision* and its interaction terms to the two explanatory variables in models 3 and 4 (“increased hours  $\times$  span of supervision” in model 3; “decreased salary  $\times$  span of supervision” in model 4). Similar procedures were adopted for models 5 and 6 to examine hypotheses 2a and 2b. Finally, we tested model 7 with a full list of variables and interaction terms.<sup>13</sup>

We used models 3 and 4 to determine the results of the moderating effect of span of supervision. Specifically, model 3 indicated that the coefficient of “increased hours  $\times$  span of supervision” was 0.004 ( $p < 0.01$ ). Figure 1 below visualizes the nature of this significant interaction. We separately examined a simple slope computation at “high” (=MEAN + SD) and “low” levels (=0) of span of supervision. We found increased hours to be negatively related to work motivation when the employees have a small span of supervision ( $\beta = -0.100$ ,  $p < 0.01$ ). Under a high-level span of supervision, this association was positive but insignificant ( $\beta = 0.018$ ,

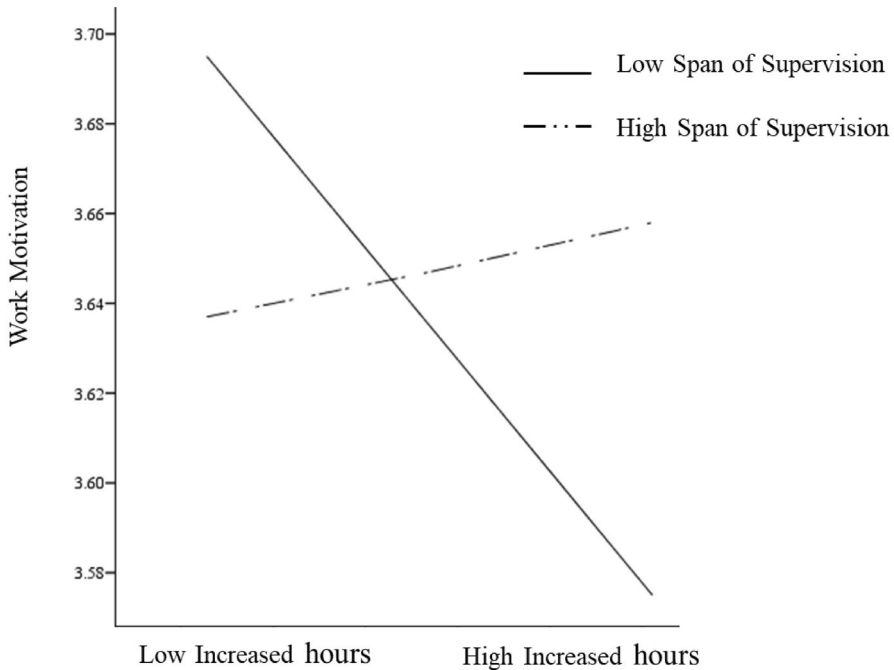
<sup>13</sup> In the main analysis, we performed the moderation tests without mean-centering. Admittedly, additive transformations are often proposed as a remedy for the common problem of collinearity in moderated regression and polynomial regression analysis; yet, mean-centering reduces nonessential rather than essential collinearity; and “in most cases, mean-centering of predictors does not accomplish its intended goal” (Dalal and Zicka 2012, p. 339). Results with mean-centered variables shown in Appendix are consistent with that of the main analyses.

**Table 2** Results of Linear Regression Models

| Work Motivation                               | Model 1             | Model 2             | Model 3             | Model 4             | Model5              | Model 6             | Model 7             |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Constant                                      | 3.681**<br>(0.103)  | 4.399**<br>(0.135)  | 4.461**<br>(0.136)  | 4.440**<br>(0.136)  | 4.330**<br>(0.299)  | 3.979**<br>(0.271)  | 4.392**<br>(0.338)  |
| Increased hours                               |                     | -0.082**<br>(0.020) | -0.100**<br>(0.020) | -0.089**<br>(0.020) | -0.141*<br>(0.065)  | -0.021<br>(0.031)   | -0.150*<br>(0.065)  |
| Decreased salary                              |                     | -0.186**<br>(0.018) | -0.187**<br>(0.018) | -0.191**<br>(0.019) | -0.183**<br>(0.031) | -0.197**<br>(0.058) | -0.200**<br>(0.058) |
| Span of supervision                           |                     |                     | -0.012**<br>(0.004) | -0.005*<br>(0.002)  |                     |                     | -0.006<br>(0.008)   |
| Work communica-<br>tion                       |                     |                     |                     |                     | -0.122<br>(0.244)   | 0.335+<br>(0.197)   | -0.184<br>(0.328)   |
| Increased hours ×<br>Span of supervision      |                     |                     | 0.004**<br>(0.001)  |                     |                     |                     | 0.002<br>(0.001)    |
| Decreased salary ×<br>Span of supervision     |                     |                     |                     | 0.002**<br>(0.001)  |                     |                     | 0.000<br>(0.002)    |
| Increased hours ×<br>Work communica-<br>tion  |                     |                     |                     |                     | 0.152*<br>(0.073)   |                     | 0.149*<br>(0.074)   |
| Decreased salary ×<br>Work communica-<br>tion |                     |                     |                     |                     |                     | 0.013<br>(0.064)    | 0.024<br>(0.065)    |
| Gender  | -0.017<br>(0.024)   | -0.025<br>(0.024)   | -0.032<br>(0.024)   | -0.033<br>(0.024)   | -0.063<br>(0.045)   | -0.062<br>(0.045)   | -0.080+<br>(0.046)  |
| Age   | 0.001<br>(0.001)    | 0.001<br>(0.001)    | 0.001<br>(0.001)    | 0.001<br>(0.001)    | 0.005*<br>(0.003)   | 0.005*<br>(0.003)   | 0.005*<br>(0.003)   |
| Org tenure                                    | -0.004**<br>(0.001) | -0.004**<br>(0.001) | -0.004**<br>(0.001) | -0.004**<br>(0.001) | -0.005*<br>(0.003)  | -0.005*<br>(0.003)  | -0.005*<br>(0.003)  |
| Country#                                      | /                   | /                   | /                   | /                   | /                   | /                   | /                   |
| R <sup>2</sup>                                | 0.031               | 0.042               | 0.043               | 0.042               | 0.074               | 0.073               | 0.077               |
| SE  | 1.135               | 1.128               | 1.129               | 1.129               | 1.162               | 1.162               | 1.162               |
| F   | 8.531**             | 10.887**            | 10.488**            | 10.366**            | 5.657**             | 5.544**             | 5.317**             |
| N   | 9824                | 9778                | 9648                | 9648                | 2945                | 2945                | 2899                |

+ $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ . The SEs of regression coefficients are presented in parentheses. #All country dummies were controlled, and the reference (omitted) category is Albania

$p > 0.1$ ). In line with H1a, these results indicate that as the number of people working under one's supervision rose, the negative association between increased hours and work motivation tended to lessen. Likewise, H1b was substantiated, given that the interaction between decreased salary and span of supervision was significantly correlated with work motivation ( $\beta = 0.002$ ,  $p < 0.01$ ). We plotted this interaction in Fig. 2, which shows that a reduction in salary had a negative effect on work motivation ( $\beta = -0.191$ ,  $p < 0.01$ ) of public employees who don't possess supervisory power (span of supervision = 0). For public employees with subordinates (the span of supervision = MEAN + SD), this negative association was significantly lessened ( $\beta = -0.133$ ,  $p < 0.01$ ).



**Fig. 1** Interaction between Increased Hours and Span of Supervision in Predicting Work Motivation

As shown in model 5, the positive coefficient of “increased hours  $\times$  work communication” ( $\beta=0.152$ ,  $p<0.05$ ) lent support to H2a, suggesting that the negative impact of increased hours on work motivation dissipated as long as public employees were informed of the organizational changes well beforehand. We present the interaction plot in Fig. 3 below. The slope of the relationship between increased hours and work motivation was positive but insignificant when work communication was present ( $\beta=0.011$ ,  $p>0.1$ ). This relationship, however, became negative when work communication was absent ( $\beta=-0.141$ ,  $p<0.05$ ). Unfortunately, the slope coefficient of “decreased salary  $\times$  work communication” failed to reach a significance level, evidenced by the results yielded in model 6. Therefore, H2b is rejected. We will discuss the possible causes in the concluding section.

For model 7, we included all covariates and interaction terms. However, only one interaction term, “increased hours  $\times$  work communication,” stood out as statistically significant ( $\beta=0.149$ ,  $p<0.05$ ). The small sample size could be a possible explanation for the insignificant association of the other three interaction items. As we mentioned earlier, not every respondent had experienced a restructuring at the workplace. After taking communication into consideration, our sample size was reduced from 9648 (span of supervision possesses a mean of 2.483 and SD of 28.195) in Models 3 and 4 to only 2899 in model 7 (span of supervision possesses a mean of

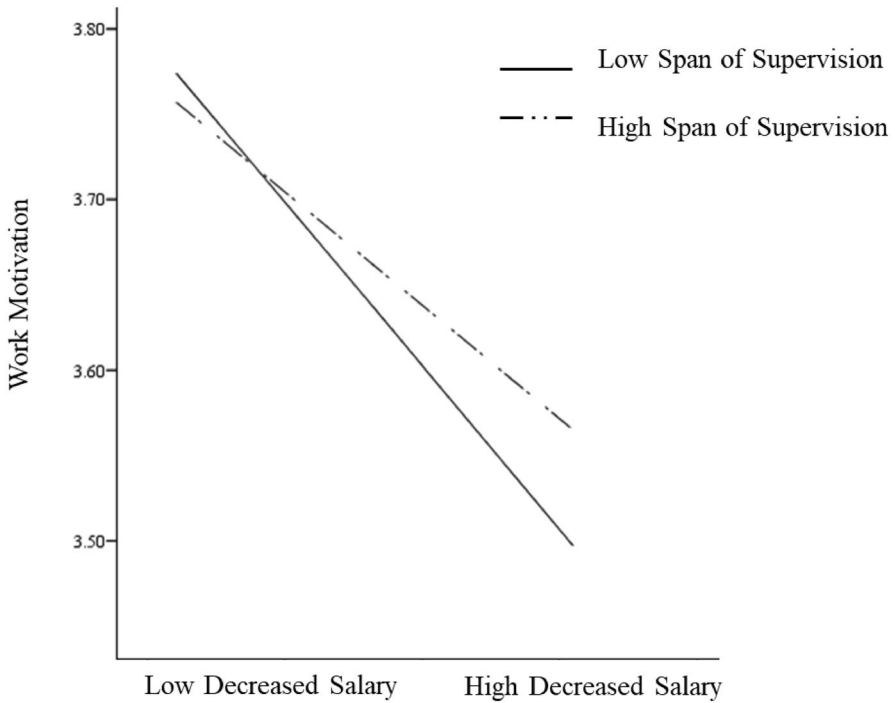
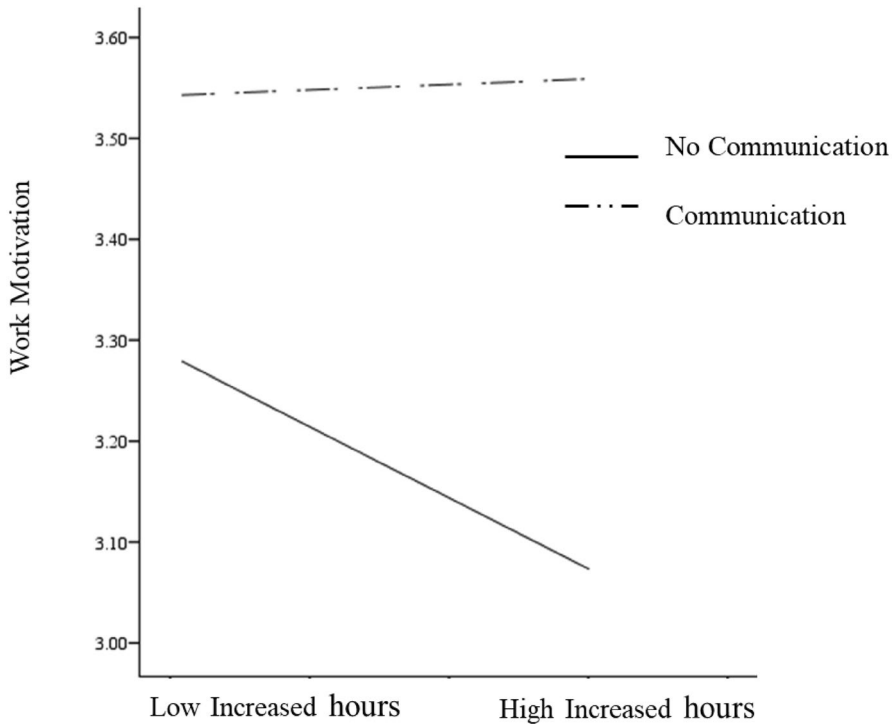


Fig. 2 Interaction between Decreased Salary and Span of Supervision in Predicting Work Motivation

3.688 and SD of 25.926). Significant interaction results were therefore more difficult to obtain due to our severely limited sample with less variability.

### 5 Further analysis using the Johnson–Neyman technique

Although we determined that span of supervision had a moderating effect on the relationship between austerity measures and work motivation, we are still unsure of how the terms “wide” and “narrow” span of supervision should be defined in the real world and whether or not precise numbers can be derived to inform practices. For these reasons, we utilized the Johnson–Neyman technique to calculate the regions of significance for the simple slope and to pinpoint the threshold of a continuous moderating variable where the relationship between the explanatory and outcome variables transforms from statistically significant to insignificant (Miller et al., 2013). Capable of both determining significance and estimating parameter values (Johnson & Fay, 1950), this statistical tool is advantageous in providing more comprehensive information for reporting how the effect of an independent variable’s influence on a dependent variable is conditional on the entire range of a moderator (Lin, 2020).



**Fig. 3** Interaction between Increased Hours and Work Communication in Predicting Work Motivation

In addition, it overcomes the weakness inherent in the commonly-adopted simple slope tests that rely primarily on arbitrarily chosen values for the moderator (Dawson, 2014).

By virtue of Hayes's (2013) PROCESS macro for SPSS, we probed the regions within the range of the continuous moderator, *span of supervision*, where the effect of increased hours on public employees' work motivation moves from statistically significant to insignificant. The results are showcased in Tables 3 and 4 below. According to Table 3, the variable increased work hours was significantly related to one's work motivation in opposite directions when the span of supervision stayed respectively within the intervals [0, 14.030] and [60.726, 2000]. In other words, for public employees who supervised more than 60 subordinates, longer work hours actually increased their work motivation. Yet, for public employees who oversaw fewer than 15 subordinates, increased hours had a negative correlation with work motivation.



**Table 3** Johnson–Neyman regions of significance for the conditional effect of increased hours at values of span of supervision

| Span of supervision | Effect | SE    | t      | p     | LLCI   | ULCI   |
|---------------------|--------|-------|--------|-------|--------|--------|
| 0.000               | -0.100 | 0.020 | -4.933 | 0.000 | -0.139 | -0.060 |
| 14.030              | -0.046 | 0.023 | -1.960 | 0.050 | -0.092 | 0.000  |
| 60.726              | 0.133  | 0.068 | 1.960  | 0.050 | 0.000  | 0.266  |
| 100.000             | 0.284  | 0.111 | 2.558  | 0.011 | 0.066  | 0.501  |
| 200.000             | 0.667  | 0.223 | 2.997  | 0.003 | 0.231  | 1.104  |
| 300.000             | 1.051  | 0.335 | 3.138  | 0.002 | 0.394  | 1.708  |
| 400.000             | 1.435  | 0.447 | 3.206  | 0.001 | 0.558  | 2.312  |
| 500.000             | 1.818  | 0.560 | 3.247  | 0.001 | 0.721  | 2.916  |
| 600.000             | 2.202  | 0.672 | 3.274  | 0.001 | 0.884  | 3.520  |
| 700.000             | 2.585  | 0.785 | 3.293  | 0.001 | 1.047  | 4.124  |
| 800.000             | 2.969  | 0.898 | 3.308  | 0.001 | 1.210  | 4.729  |
| 900.000             | 3.353  | 1.010 | 3.319  | 0.001 | 1.372  | 5.333  |
| 1000.000            | 3.736  | 1.123 | 3.328  | 0.001 | 1.535  | 5.937  |
| 1100.000            | 4.120  | 1.235 | 3.335  | 0.001 | 1.698  | 6.541  |
| 1200.000            | 4.503  | 1.348 | 3.341  | 0.001 | 1.861  | 7.146  |
| 1300.000            | 4.887  | 1.461 | 3.346  | 0.001 | 2.024  | 7.750  |
| 1400.000            | 5.271  | 1.573 | 3.350  | 0.001 | 2.187  | 8.354  |
| 1500.000            | 5.654  | 1.686 | 3.354  | 0.001 | 2.350  | 8.959  |
| 1600.000            | 6.038  | 1.798 | 3.358  | 0.001 | 2.513  | 9.563  |
| 1700.000            | 6.422  | 1.911 | 3.360  | 0.001 | 2.676  | 10.167 |
| 1800.000            | 6.805  | 2.024 | 3.363  | 0.001 | 2.839  | 10.772 |
| 1900.000            | 7.189  | 2.136 | 3.365  | 0.001 | 3.001  | 11.376 |
| 2000.000            | -0.100 | 0.020 | -4.933 | 0.000 | -0.139 | -0.060 |

N=9648

In a similar fashion, we used the Johnson–Neyman technique to precisely discern the moderating effect of span of supervision on the relationship between pay cuts and work motivation. Table 4 below displays two thresholds of the span of supervision: 56.098 and 398.921. We found that when the number of their supervised subordinates was below 57, public employees facing an income decline concomitantly suffered from a decrease in their work motivation. However, when bestowed with the authority to supervise more than 398 employees, these managers tended to exhibit a positive attitude towards the income deduction, evidenced by the significantly positive relationship between decreased salary and work motivation. Conceivably, big hierarchical power is tempting and even the loss in money cannot turn this tide.

**Table 4** Johnson–Neyman regions of significance for the conditional effect of decreased salary at values of span of supervision

| Span of supervision | Effect | SE    | t       | p     | LLCI   | ULCI   |
|---------------------|--------|-------|---------|-------|--------|--------|
| 0.000               | -0.191 | 0.019 | -10.274 | 0.000 | -0.228 | -0.155 |
| 56.098              | -0.084 | 0.043 | -1.960  | 0.050 | -0.169 | 0.000  |
| 100.000             | -0.001 | 0.073 | -0.014  | 0.989 | -0.145 | 0.143  |
| 200.000             | 0.189  | 0.145 | 1.304   | 0.192 | -0.095 | 0.473  |
| 300.000             | 0.379  | 0.217 | 1.744   | 0.081 | -0.047 | 0.805  |
| 398.921             | 0.567  | 0.289 | 1.960   | 0.050 | 0.000  | 1.134  |
| 400.000             | 0.569  | 0.290 | 1.962   | 0.050 | 0.001  | 1.138  |
| 500.000             | 0.759  | 0.363 | 2.092   | 0.036 | 0.048  | 1.470  |
| 600.000             | 0.949  | 0.436 | 2.179   | 0.029 | 0.095  | 1.803  |
| 700.000             | 1.139  | 0.508 | 2.241   | 0.025 | 0.143  | 2.136  |
| 800.000             | 1.329  | 0.581 | 2.287   | 0.022 | 0.190  | 2.469  |
| 900.000             | 1.519  | 0.654 | 2.323   | 0.020 | 0.237  | 2.801  |
| 1000.000            | 1.709  | 0.727 | 2.352   | 0.019 | 0.285  | 3.134  |
| 1100.000            | 1.899  | 0.800 | 2.375   | 0.018 | 0.332  | 3.467  |
| 1200.000            | 2.089  | 0.873 | 2.395   | 0.017 | 0.379  | 3.800  |
| 1300.000            | 2.280  | 0.945 | 2.411   | 0.016 | 0.426  | 4.133  |
| 1400.000            | 2.470  | 1.018 | 2.425   | 0.015 | 0.474  | 4.466  |
| 1500.000            | 2.660  | 1.091 | 2.438   | 0.015 | 0.521  | 4.798  |
| 1600.000            | 2.850  | 1.164 | 2.448   | 0.014 | 0.568  | 5.131  |
| 1700.000            | 3.040  | 1.237 | 2.458   | 0.014 | 0.615  | 5.464  |
| 1800.000            | 3.230  | 1.310 | 2.466   | 0.014 | 0.663  | 5.797  |
| 1900.000            | 3.420  | 1.382 | 2.474   | 0.013 | 0.710  | 6.130  |
| 2000.000            | -0.191 | 0.019 | -10.274 | 0.000 | -0.228 | -0.155 |

N=9648

## 6 Discussion and conclusions

In this study, we have found that the relationships among increased hours, decreased salary, and work motivation varied dramatically depending on the employee's span of supervision and perceived level of organizational communication. To be specific, when having very few people working under their supervision, public employees affected by austerity measures were doomed to experience a decline in motivation. In sharp contrast, those with a large number of subordinates working for them tended to maintain their motivation despite longer work hours and cuts to their payroll. Furthermore, as long as public employees are promptly informed of upcoming organizational changes, their work motivation will not be diminished by the addition of overtime work requirements. Nonetheless, truthful and timely communication

will do little to maintain the motivation of employees suffering from pay reductions. A possible explanation is that the utility of money is highly inelastic and therefore un-substitutable. Moreover, economists and psychologists have long suggested that “losses loom larger than gains” (Kahneman & Tversky, 1979), as individuals are commonly more sensitive to the pain of losing than to the pleasure of gaining. Compared to increased hours, pay deductions are certainly more difficult for employees to accept and are more problematic to justify or compensate for by improvements made in other areas.

This study advances theory in two major ways. First, it contributes to the emerging body of research that examines how employees navigate organizational turbulence such as restructuring and budget reductions. Prior studies have mainly focused on examining the accumulating effect of austerity measures on employees’ work attitudes. By specifying two major contingencies, we delineate in this research the influence of decreased salary and increased working hours. Our results mainly support the moderation model and suggest that austerity measures do not necessarily undermine public employees’ work motivation. As the level of supervisory span increases or if desirable communication practice is adopted during the pre-stage of organizational restructuring, the undesirability of austerity approaches in the eyes of public sector workers becomes less palpable. Second, we employed the Johnson–Neyman technique to systematically analyze the impact of the span of supervision by precisely discerning regions of significance. We were able to identify the point at which the impact of pay cuts and prolonged work hours on motivation shifted from significant to insignificant, or vice versa. Our findings clearly point to the need to differentiate between these two austerity measures by revealing distinct patterns of their interactions with span of supervision in shaping employees’ work motivation. As a matter of fact, within the entire range of supervisory span observed in the EWCS survey, income decline is more disrupting than working overtime as only those in major supervisory positions (> 398 subordinates) were found to be immune to pay cuts, whereas the threshold for not reacting negatively to longer working hours was supervising only 14 subordinates.<sup>14</sup>

The practical significance of our study is both straightforward and instructive. In a statistical fashion, we laid bare salient and feasible measures could be utilized to help supervisors ease the frustration of their employees. From an advisory perspective, this study delivers at least two important findings. First and foremost, employees greatly appreciate open and candid communication, as they commonly do not mind working longer hours if they are informed of important organizational decisions in a timely manner. Moreover, the enjoyment that individuals gain from power holding is irresistibly huge. Public employees occupying extremely high positions can even settle for pay cuts. In retrospect, this phenomenon makes sense, either

<sup>14</sup> The average size of staff subordinating to personnel at different hierarchical levels could vastly vary across departments and countries. In the Skills and Funding Agency in the Department for Education, UK, for instance, senior executive and grade-7 officers are both considered as occupants of senior management positions with over 300 subordinates, while managers with 14 subordinates are generally equivalent to individuals holding junior management positions, e.g., executive officers. *Source: Annual Report and Accounts 2013 -2014, Skills Funding Agency, Department for Education.*

because ambitious public employees place more emphasis on satisfying their self-actualization needs or the long-term, non-monetary benefits associated with powerful positions outweigh the temporary pay decline. Public agency leaders who are struggling during the current difficult time can thus benefit from our study by taking the following advice: (1) include employees in the decision-making loop as early as possible and (2) refrain from imposing one-size-fits-all austerity measures on staff members. In principle, a requirement for longer work hours is easier to impose on employees of all ranks and grades, whereas pay deductions must be more cautiously proposed and meticulously reviewed.

The limitations of this study invite further research in several directions. First, since all key variables of interest were measured in a single-item format, the measurement in this research runs the risk of compromised validity and reliability (McIver and Carmines 1981). Nonetheless, this study does not deem it to be problematic since the measurement items in this study are mainly used to assess theoretically deduced and clearly defined concepts and thus are considered as having reached quite acceptable levels of reliability (Loo and Kelts 1998). Besides, in previous research, the single-item measurement approach has been successfully developed and employed in the scholarly examination of work motivation. For instance, Esteve et al.'s (2017) work, which uses the same data source as this research, effectively assesses the effects of austerity measures on employees' job satisfaction and work motivation through a single-item scale. Considering the above factors, the concerns around the single-item-based measurement in this paper can be eased. Future research is suggested to keep working on the refinement of measurement scales on work motivation and conduct comparative studies on single versus multi-item scales.

Second, operationalizing principal variables based on the results collected from one survey, our analysis inevitably suffers from common source bias (Meier & O'Toole, 2012). That said, we do not consider it to be a fatal flaw within this study because the specific survey items used to measure the key variables focus on the factual aspects of individuals' work life. For instance, respondents are unlikely to exaggerate or lie about the number of subordinates they have or whether they were informed beforehand of any restructuring decisions within their organizations. Additionally, the items we used are not located in close proximity in the questionnaire. Interviewees answered questions—Q21a (*work communication*), Q23 (*span of supervision*), and Q89e (*work motivation*)—with significant time intervals in-between and also directly to field interviewers. The concerns over receiving careless or patterned responses can thus be put to bed. Future scholars may consider incorporating an experimental or qualitative component into their research to achieve a causal and nuanced perspective on the relationships among aggressive human resource directives, public employee motivation, job characteristics, etc.

Third, another limitation related to our measurement technique resides in the use of subjective measurement in measuring the changes in employees' working hours and salaries. Unlike objective measurement, which is more reliable, consistent, and

impartial, subjective measurement is inevitably influenced by human factors. Especially in our research setting, respondents are possible to report false answers out of concerns for possible unfavorable consequences, entailing inauthenticity of collected data. On this note, the anonymous interview setting and strict maintenance of confidentiality in the EWCS survey can help reassure the respondents and thus reduce the potential side effects of subjective measurement. Given this, though the absence of objective data dampens the reliability of our results to some extent, the authenticity loss falls within an acceptable range. Future studies could replicate our research design but supplement the subjective survey data with objective sources to corroborate our findings.

Fourth, this study departs from the taken-for-granted assumption that employees inherently loathe extended work hours and decreased pay. If we take the former as an example, however, we find that people from different countries and cultures view this element differently. In Japan, working long hours is considered an expression of an employee's allegiance to the organization and professional dedication, which are strongly tied to his or her personal identity and social status (Tsai et al., 2016; Weathers & North, 2009); In the U.S., long hours are common in the public sector because the productivity levels of employees are often difficult to measure and "hours spent at work are used as a proxy for work output" (Wharton & Blair-Loy, 2002 p. 33). Future researchers may wish to perform comparative studies by collecting survey data in countries or regions with significantly varied cultural roots or economic development levels.

Lastly, this study sheds light on two of many austerity measures. Emerging scholars may highlight other approaches used by the public sector in the cutback era to examine not only their impacts on employees' work attitudes but also the contingencies under which these identified effects can be intensified or mitigated. For instance, an insightful exploration into the ways public personnel layoffs influence the work morale of the remaining public employees would be a valuable avenue for further research. Besides, it would be intriguing to document the extent to which employees feel demoralized by the cancellation of various work-life balance (WLB) or family-friendly (FF) policies and whether these negative effects can be offset by other management practices (Stavrou & Kilaniotis, 2010). At the same time, various personal and organizational-level contingencies, such as public employees' organizational tenure and public managers' leadership style, can also be considered to enrich relevant findings. The associated findings may help those in leadership positions to simultaneously cut organizational costs while maintaining employee morale.

## Appendix

See appendix Tables 5, 6, 7.

**Table 5** Results of Linear Regression Models (Mean Centered)

|   | Model A3            | Model A4                      | Model A5            | Model A6            | Model A7                       |
|---|---------------------|-------------------------------|---------------------|---------------------|--------------------------------|
| Constant                                  | 4.432**<br>(0.136)  | 4.427**<br>(0.136)            | 3.953**<br>(0.237)  | 3.950**<br>(0.238)  | 3.953**<br>(0.242)             |
| Increased hours                           | -0.090**<br>(0.020) | -0.089**<br>(0.020)           | -0.022<br>(0.031)   | -0.021<br>(0.031)   | -0.029<br>(0.031)              |
| Decreased salary                          | -0.187**<br>(0.018) | -0.186**<br>(0.018)           | -0.183**<br>(0.031) | -0.186**<br>(0.031) | -0.181**<br>(0.032)            |
| Span of supervision                       | 0.000<br>(0.000)    | 0.001 <sup>+</sup><br>(0.000) |                     |                     | 0.002*<br>(0.001)              |
| Work communication                        |                     |                               | 0.360**<br>(0.055)  | 0.372**<br>(0.055)  | 0.354**<br>(0.056)             |
| Increased hours ×<br>Span of supervision  | 0.004**<br>(0.001)  |                               |                     |                     | 0.002<br>(0.001)               |
| Decreased salary ×<br>Span of supervision |                     | 0.002**<br>(0.001)            |                     |                     | 0.000<br>(0.002)               |
| Increased hours ×<br>Work communication   |                     |                               | 0.152*<br>(0.073)   |                     | 0.149*<br>(0.074)              |
| Decreased salary ×<br>Work communication  |                     |                               |                     | 0.013<br>(0.064)    | 0.024<br>(0.065)               |
| Gender                                    | -0.032<br>(0.024)   | -0.033<br>(0.024)             | -0.063<br>(0.045)   | -0.062<br>(0.045)   | -0.080 <sup>+</sup><br>(0.046) |
| Age                                       | 0.001<br>(0.001)    | 0.001<br>(0.001)              | 0.005*<br>(0.003)   | 0.005*<br>(0.003)   | 0.005*<br>(0.003)              |
| Org tenure                                | -0.004**<br>(0.001) | -0.004**<br>(0.001)           | -0.005*<br>(0.003)  | -0.005*<br>(0.003)  | -0.005*<br>(0.003)             |
| Country#                                  | /                   | /                             | /                   | /                   | /                              |
| R <sup>2</sup>                            | 0.043               | 0.042                         | 0.074               | 0.073               | 0.077                          |
| SE  | 1.129               | 1.129                         | 1.162               | 1.162               | 1.162                          |
| F   | 10.488**            | 10.366**                      | 5.657**             | 5.544**             | 5.317**                        |
| N   | 9648                | 9648                          | 2945                | 2945                | 2899                           |

<sup>+</sup>p < 0.10, \*p < 0.05, \*\*p < 0.01. The SEs of regression coefficients are presented in parentheses. # All country dummies were controlled, and the reference (omitted) category is Albania

**Table 6** Johnson–Neyman Regions of Significance for the Conditional Effect of Increased Hours at Values of Span of Supervision (Full Result)

| Span of supervision | Effect | SE    | t      | p     | LLCI   | ULCI   |
|---------------------|--------|-------|--------|-------|--------|--------|
| 0.000               | -0.100 | 0.020 | -4.933 | 0.000 | -0.139 | -0.060 |
| 14.030              | -0.046 | 0.023 | -1.960 | 0.050 | -0.092 | 0.000  |
| 60.726              | 0.133  | 0.068 | 1.960  | 0.050 | 0.000  | 0.266  |
| 100.000             | 0.284  | 0.111 | 2.558  | 0.011 | 0.066  | 0.501  |
| 200.000             | 0.667  | 0.223 | 2.997  | 0.003 | 0.231  | 1.104  |
| 300.000             | 1.051  | 0.335 | 3.138  | 0.002 | 0.394  | 1.708  |
| 400.000             | 1.435  | 0.447 | 3.206  | 0.001 | 0.558  | 2.312  |
| 500.000             | 1.818  | 0.560 | 3.247  | 0.001 | 0.721  | 2.916  |
| 600.000             | 2.202  | 0.672 | 3.274  | 0.001 | 0.884  | 3.520  |
| 700.000             | 2.585  | 0.785 | 3.293  | 0.001 | 1.047  | 4.124  |
| 800.000             | 2.969  | 0.898 | 3.308  | 0.001 | 1.210  | 4.729  |
| 900.000             | 3.353  | 1.010 | 3.319  | 0.001 | 1.372  | 5.333  |
| 1000.000            | 3.736  | 1.123 | 3.328  | 0.001 | 1.535  | 5.937  |
| 1100.000            | 4.120  | 1.235 | 3.335  | 0.001 | 1.698  | 6.541  |
| 1200.000            | 4.503  | 1.348 | 3.341  | 0.001 | 1.861  | 7.146  |
| 1300.000            | 4.887  | 1.461 | 3.346  | 0.001 | 2.024  | 7.750  |
| 1400.000            | 5.271  | 1.573 | 3.350  | 0.001 | 2.187  | 8.354  |
| 1500.000            | 5.654  | 1.686 | 3.354  | 0.001 | 2.350  | 8.959  |
| 1600.000            | 6.038  | 1.798 | 3.358  | 0.001 | 2.513  | 9.563  |
| 1700.000            | 6.422  | 1.911 | 3.360  | 0.001 | 2.676  | 10.167 |
| 1800.000            | 6.805  | 2.024 | 3.363  | 0.001 | 2.839  | 10.772 |
| 1900.000            | 7.189  | 2.136 | 3.365  | 0.001 | 3.001  | 11.376 |
| 2000.000            | 7.572  | 2.249 | 3.367  | 0.001 | 3.164  | 11.980 |

Note. N=9648

**Table 7** Johnson–Neyman Regions of Significance for the Conditional Effect of Decreased Salary at Values of Span of Supervision (Full Result)

| Span of supervision | Effect | SE    | t       | p     | LLCI   | ULCI   |
|---------------------|--------|-------|---------|-------|--------|--------|
| 0.000               | −0.191 | 0.019 | −10.274 | 0.000 | −0.228 | −0.155 |
| 56.098              | −0.084 | 0.043 | −1.960  | 0.050 | −0.169 | 0.000  |
| 100.000             | −0.001 | 0.073 | −0.014  | 0.989 | −0.145 | 0.143  |
| 200.000             | 0.189  | 0.145 | 1.304   | 0.192 | −0.095 | 0.473  |
| 300.000             | 0.379  | 0.217 | 1.744   | 0.081 | −0.047 | 0.805  |
| 398.921             | 0.567  | 0.289 | 1.960   | 0.050 | 0.000  | 1.134  |
| 400.000             | 0.569  | 0.290 | 1.962   | 0.050 | 0.001  | 1.138  |
| 500.000             | 0.759  | 0.363 | 2.092   | 0.036 | 0.048  | 1.470  |
| 600.000             | 0.949  | 0.436 | 2.179   | 0.029 | 0.095  | 1.803  |
| 700.000             | 1.139  | 0.508 | 2.241   | 0.025 | 0.143  | 2.136  |
| 800.000             | 1.329  | 0.581 | 2.287   | 0.022 | 0.190  | 2.469  |
| 900.000             | 1.519  | 0.654 | 2.323   | 0.020 | 0.237  | 2.801  |
| 1000.000            | 1.709  | 0.727 | 2.352   | 0.019 | 0.285  | 3.134  |
| 1100.000            | 1.899  | 0.800 | 2.375   | 0.018 | 0.332  | 3.467  |
| 1200.000            | 2.089  | 0.873 | 2.395   | 0.017 | 0.379  | 3.800  |
| 1300.000            | 2.280  | 0.945 | 2.411   | 0.016 | 0.426  | 4.133  |
| 1400.000            | 2.470  | 1.018 | 2.425   | 0.015 | 0.474  | 4.466  |
| 1500.000            | 2.660  | 1.091 | 2.438   | 0.015 | 0.521  | 4.798  |
| 1600.000            | 2.850  | 1.164 | 2.448   | 0.014 | 0.568  | 5.131  |
| 1700.000            | 3.040  | 1.237 | 2.458   | 0.014 | 0.615  | 5.464  |
| 1800.000            | 3.230  | 1.310 | 2.466   | 0.014 | 0.663  | 5.797  |
| 1900.000            | 3.420  | 1.382 | 2.474   | 0.013 | 0.710  | 6.130  |
| 2000.000            | 3.610  | 1.455 | 2.480   | 0.013 | 0.757  | 6.463  |

N = 9648

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**Data availability** The data used in this paper are publicly available and can be accessed here: <https://www.eurofound.europa.eu/en/surveys/european-working-conditions-surveys/sixth-european-working-conditions-survey-2015>. Additionally, the codebook and do-file necessary for replication purposes are available upon reasonable request.

## Declarations

**Conflict of interest** The authors declare that they have no conflicts of interest regarding the publication of this article. All financial and personal relationships that might bias their work have been disclosed.

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