# RED TAPE AND BURNOUT RISKS IN THE PUBLIC SERVICE

## EVIDENCE FROM A SURVEY EXPERIMENT OF SCHOOL PRINCIPALS

**Javier Fuenzalida,** Blavatnik School of Government, University of Oxford; Centre for Public Systems, Department of Industrial Engineering, Universidad de Chile

**Laura Gutiérrez**, Centre for Public Systems, Department of Industrial Engineering, Universidad de Chile

**Andrés Fernández-Vergara**, Centre for Public Systems, Department of Industrial Engineering, Universidad de Chile

**Pablo A. González**, Centre for Public Systems and Center for Research in Inclusive Education, Department of Industrial Engineering, Universidad de Chile; International Inequalities Institute, LSE

**Abstract**

Occupational stress and burnout remain largely unexplored as red tape repercussions, even though they can jeopardize public servants' wellbeing, motivation and performance. Using a survey experiment with 354 school principals conducted between November 2018 and January 2019 in Chile, we provide evidence that red tape foments burnout risks. More red tape increases emotional exhaustion, depersonalisation and a sense of low personal accomplishment, while cutting red tape reduces emotional exhaustion but does not attenuate depersonalisation and low personal accomplishment. These experimental results further prior observational findings about employee responses to red tape and are particularly pertinent for public services struggling with effectively cutting red tape.

Keywords: red tape, burnout, behavioural public administration, public service

**Acknowledgements**

## 1.    Introduction

The literature has underscored various repercussions of red tape on quintessential attitudes of public servants, such as job satisfaction (Davis 2013; Kjeldsen and Hansen 2018; DeHart-Davis and Pandey 2005; Borst 2018; Steijn and van der Voet 2019; DeHart-Davis et al. 2015), organisational commitment (Stazyk et al. 2011; DeHart-Davis and Pandey 2005), and work engagement and motivation (Bronkhorst et al. 2015; Wright 2004; Cooke et al. 2019; Borst 2018).  Nonetheless, the effects of red tape on occupational stress and burnout remain largely unexplored and calls for specific research in this area have emerged recently (Pandey, 2021). Only a few observational studies have contributed toward addressing this question (Brunetto et al. 2017, Giauque et al. 2013, Whiteoak 2021; Siverbo 2021; Quaratulain and Khan 2015). Further, recent meta-analyses and meta-regressions on red tape effects on public organisations and employees emphasize the substantial variation in the magnitudes of individual outcomes (George et al. 2021; Blom et al. 2020). Therefore, the current evidence-based negative attitudinal responses to red tape cannot be easily extrapolated to understand red tape's impacts on occupational stress and burnout.

Workplace stress, and particularly burnout, certainly lead to severe problems affecting government employees' wellbeing, motivation and performance (e.g. Golembiewski et al. 1998; Bacharach et al. 1991; Barboza-Wilkes et al. 2022; Salvagioni et al. 2017). These consequences and their organisational and social repercussions, along with the benefits of preventing and curbing public servants' burnout (e.g. Linos et al. 2022; Eldor 2018; Vella and McIver 2018), also stress the need to explore the nature of this red tape influence and how its ill effects are produced.

Our study leverages the literature's views on red tape and its effects on public servants' attitudes and behaviours and expands this body of evidence by inquiring into the adverse effects on officials' occupational stress. We study the influence of red tape on burnout through a survey experiment of 354 school principals in Chile. We first primed respondents with the actual compliance requirements they regularly deliver to key educational stakeholders of the school system's governance, including educational, administrative, human resource management and financial

requirements. We then exposed participants to randomly manipulated vignettes indicating either a continuation, an increase or a decrease in those requirements at different intensities. We then asked them about their perceptions of burnout, including questions about their state of emotional exhaustion, depersonalisation, and sense of personal accomplishment.

This paper offers two additional contributions. First, the Chilean public service, which motivated and shaped this research, provides a mostly hitherto unexplored specimen of public service institutions through which to examine red tape repercussions and, particularly, its impact on occupational stress and burnout. Almost all of the existing studies on this area are from the United States (US) or a few developed European countries (Brunetto et al. 2017, Giauque et al. 2013, Whiteoak 2021; Siverbo 2021; cf. Quaratulain and Khan 2015). Meta-analyses and meta-regressions have also concluded that red tape effects vary significantly across institutional contexts and, while most evidence on this area comes from a few developed countries with Germanic, Anglo-American or Nordic European administrative and cultural traditions, red tape is indeed more harmful in unresearched countries (George et al. 2021; Blom et al. 2020).

Second, the behavioural approach of this study addresses previous calls for more experimental research to examine public servants' responses to red tape (Bozeman 2012; Pandey et al. 2017; Carrigan et al. 2020; Grimmelikhuijsen et al. 2017). These claims are motivated by endogeneity concerns when testing red tape effects, especially on attitudinal and behavioural outcomes (Pandey et al. 2017). Red tape is influenced by other individual or organisational factors, further confounding employees' attitudes and behaviour (e.g. Brunetto et al. 2017). Furthermore, various attitudes and behaviours also affect how red tape is experienced and perceived, suggesting that a reverse causation might govern these presumed red tape influences (e.g. Pandey and Kinsley 2000).

The following section discusses the two major definitions of red tape and its general consequences on public service organisations and their employees. We then review the notion of burnout and the literature suggesting how this syndrome and its related constructs might be affected by red tape. Next, we describe the institutional context of this research and the experimental design and its participants, before presenting

the results. We finally analyse our findings, discussing their limitations and contributions to a better understanding of the consequences of red tape in public service.

## 2.    Literature Review

### 2.1    Red tape effects on public servants

Several theoretical and empirical advancements have contributed to defining and understanding red tape (Bozeman, 2000; 2012; Bozeman & Feeney, 2014; Pandey & Scott, 2002; Pandey et al., 2017). Most of those descriptions refer to burdensome and pointless rules and procedures that produce more harm than good. Scholars have focused on red tape as a 'psychological process' and conceive red tape based on individuals' organisational experiences and subject-dependent evaluations of rules, regulations, and procedures (Campbell, Pandey & Arnesen, 2023; Campbell, 2019; Pandey, 2021; Davis & Pink-Harper, 2016)[1]. According to Pandey (2021, p. 264), red tape is a 'role-specific subjective experience of compliance burden imposed by an organisation.' Thus, this psychological process approach holds that red tape exists to the extent that someone in the organisation subjectively perceives a compliance burden. This is also supported by recent experimental evidence (Hattke et al., 2020).

Recent meta-analyses and meta-regressions confirm a negative association between red tape and key public servants' attitudes and behaviour (George et al., 2021; Blom et al., 2021). Red tape has a small to medium negative influence on role clarity, autonomy, commitment, work satisfaction, work motivation, and intention to stay. The same meta-analyses confirm a small to moderate negative influence of red tape on various organisational behaviour outcomes, including risk culture, innovation, organisational support, leadership, goal clarity, and communication (George et al., 2021; Blom et al., 2021). These studies also show mixed or no effect on organisational performance.

### 2.2    Red tape and occupational health

The Job Demands-Resources (JD-R) model offers a comprehensive framework to study how red tape affects occupational stress and burnout (Demerouti et al., 2001). Demands are physical, social, or organisational features involving employees'

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[1] This approach is predominantly motivated by the problematic operationalization and measurement validity of the objective dysfunctionality of formalities suggested in Bozeman's (1993, p. 284) benchmark notion of red tape as 'rules, regulations and procedures that remain in force and entail a compliance burden for the organization but have no efficacy for the rules' functional object.'

continuous physical, cognitive, or emotional efforts. Resources refer to physical, psychological, social, or organisational aspects contributing to people's attainment of work goals, the reduction of job demands and their costs, and the stimulation of individual learning and development.

Red tape is a *hindrance* job demand imposing a burden whose sustained compliance undermines public servants and leads them to burnout (Yao et al., 2015; Demerouti et al., 2001; Giauque & Weissbrodt, 2021). As opposed to *challenge* job demands—which can promote personal development, mastery, or future benefits— *hindrances* are demands that preclude goal attainment, learning, and improvement (Cavanaugh et al., 2000).

Recent observational studies confirm the positive influence of red tape as a hindrance job demand on the burnout of Chinese school teachers and Finnish local government officials (Wu et al., 2020; Harju, 2021). As noted, recent meta-analytic evidence points out that red tape has a medium to large negative association with public servants' health-related wellbeing outcomes (Blom et al., 2021). Additionally, research has shown a strong positive association between red tape and stress and burnout-related outcomes. Giauque et al. (2013) confirmed that red tape increased officials' stress perception among Swiss municipal employees, while Brunetto et al. (2017) found no effects when testing this relationship in U.S. police officers. Quratulain & Khan (2015) showed a positive effect of excessive hierarchy and procedural compliance in agencies on Pakistani public officials' perceptions of stress. Freitas et al. (2019) conducted an observational study confirming a positive association between red tape and employee job stress within a Brazilian public university.

## 2.3 Red tape and emotional exhaustion, depersonalisation and personal accomplishment

Burnout is a three-dimensional model characterized by emotional exhaustion, depersonalisation, and reduced personal accomplishment, usually among human service and frontline professionals (Maslach, 2003; Maslach & Jackson, 1981). Emotional exhaustion refers to workers' feeling of being emotionally overloaded and their resources undermined. Depersonalisation corresponds to subjects' negative or

excessively disconnected responses to others, often regularly service users or beneficiaries of their organisations. Reduced personal accomplishment concerns a decline in employees' feelings of competence and achievement in work (Maslach & Jackson, 1981; Maslach, 1993). Research has consistently shown the negative consequences of job demands and the preventative influence of job resources on all three burnout dimensions (Alarcon, 2011; Lee & Ashforth, 1996).

As the conservation of resources (COR) theory posits, individuals strive to obtain, protect, and develop those resources they essentially value (Hobfoll, 1989; Hobfoll et al. 2018). Thus, burnout occurs when these central resources are threatened with loss, when central or key resources are actually lost, or when there is a failure to get anticipated essential resources following significant effort (Hobfoll, 1989). Resources include objects (e.g., infrastructure, tools for work), conditions (e.g., tenure, autonomy, learning and development opportunities), personal characteristics (e.g., optimism, self-efficacy), and energy (e.g., money).

The compliance burden involved in red tape threatens the emotional resources of individuals or, indeed, leads to their loss. For example, experimental evidence from a laboratory study by Hattke, Hensel, and Kalucza (2020) demonstrates that red tape and especially the compliance burden it means for individuals evoke negative emotional responses, including feelings of anger, frustration, and confusion. In certain public service occupations, employees might even need to suppress and mask the negative emotions produced by red tape (e.g., Henderson & Borry, 2023), which could lead to further erosion of their emotional resources. Observational studies on public servants also show a positive association between red tape and work exhaustion and emotional exhaustion (Muylaert et al., 2022; Lockey et al., 2022; Shim et al., 2017). Further, emotional exhaustion has been acknowledged as the central construct of burnout and the most vulnerable to job demands (Gmelch & Gates, 1998), and hence the burnout dimension that might be most vulnerable to red tape. Against such a background, we hypothesize that:

**H1**: Red tape increases emotional exhaustion.

According to COR theory, employees who suffer resource-draining situations tend to enter a defensive mode to preserve the self, which might even be characterized by

aggressiveness and irrationality (Hobfoll et al. 2018). Further, Ashforth and Lee (1990) argue that depersonalisation represents one form of defensive behaviour in organisations when individuals intend to reduce a perceived threat or avoid an unwanted demand. The authors also argue that rules, regulations, and procedures could lead to defensiveness as they convey "what is not [expected at organisations], providing justification for avoiding actions which do not match [them]" (p. 632).

When facing or even threatened by red tape and its compliance burden, employees might thus protect their available resources by detaching themselves from other resource-draining tasks, including problem-solving interactions with people, especially with users and beneficiaries. For instance, based on a study of Dutch child welfare professionals, Steijn & van der Voet (2019) show that red tape reduces the time public servants devote to users. Following this line of reasoning, we hypothesize:

**H2**: Red tape increases depersonalisation.

Red tape also threatens public servants' capacity to influence their work environment virtuously since it primarily decreases their perceived autonomy (Bloom et al. 2021). Management systems that restrict autonomy as well as job crafting hinder employees' exposure to challenge job demands promoting mastery at work—as qualitative evidence from Australian teachers at public schools suggests (Whiteoak, 2021). Moreover, the use of skills at work and autonomy are positively associated with personal accomplishment (Lee and Ashforth, 1993).

The autonomy reduction and the missing opportunities for challenging job demands produced by red tape limit public servants' experiences giving rise to feelings of efficacy or their 'effectance motivation' (White 1959). Indeed, red tape could lead to work alienation—characterized by feelings of powerlessness and meaninglessness—and to employee withdrawal behaviour (DeHart-Davis & Pandey, 2005; Quratulain & Khan, 2015; Wong; 2023). Therefore, red tape ultimately threatens public servants' self-perceptions of competence and achievement, as observational evidence from the Australian public service suggests (van Acker et al., 2018; Whiteoak, 2021). Although personal accomplishment seems to be consistently

less prone to being affected by organisational factors compared to emotional exhaustion and depersonalisation (Schaufeli & Taris, 2005; Alarcon, 2011; Lee & Ashforth, 1996), we thus nonetheless hypothesize:

**H3**: Red tape decreases personal accomplishment.

## 3.     Research Context

The Chilean public service offers a propitious institutional setting to study the consequences of red tape, as it is on the way to reaching substantive standards of administrative simplification and digitalisation and has achieved a leading role in Latin America in this area (Roseth et al. 2018). Yet, when compared globally, the country just ranks upper middle in comparative indexes related to government administrative simplification and digitalisation, mainly because of an extensive heterogeneity at the organisational level in these areas and the existence of major unsolved sources of government red tape (OECD 2020a; 2016).[2]

One major source of red tape in the Chilean public service is the school system. Evidence from a variety of sources including major policy reports from the government, international and non-profit organisations and university research centres has pointed to red tape at schools as an unsolved obstacle to improving educational quality in Chile (Santiago et al. 2017; CEDLE 2018; Educación 2020 2018). Those reports highlight inefficiencies in using diverse information systems, excessive time invested in administrative tasks, outdated school obligations and poor coordination between educational agencies and their subnational units, resulting in more red tape. Although this had been a challenge for Chilean schools for years, it became more pronounced and was salient in the policy agenda in 2018 when the media consistently featured red tape imposed on schools as a major problem in the educational system (see Appendix A). For instance, *El Mercurio* Newspaper noted that 'School principals spend excessive time resolving "high bureaucratic burden"' (Quevedo, 2018), and *Pauta* radio station underscored '…the bureaucratic knots that suffocate schools' (Ojeda and Rodríguez, 2018). Further, the Chilean government launched a national plan by the middle of 2018 called 'All to the Classroom' ('*Todos al Aula*') to de-bureaucratise schools (Ministry of Education 2018).

Chilean schools are mainly funded by a voucher system and receive resources from the Ministry of Education according to students' attendance. This scheme of public

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[2] To be sure, there is not an international comparative index of red tape. Other proxies of government red tape, for instance, ranked Chile 42 out of 193 countries in the E-Government Development Index in 2018 (United Nations 2018) and 55 out of 190 in the Ease of Doing Business Ranking in 2018 (World Bank 2018).

subsidies comprises municipal schools and private-voucher schools, representing 89% of the total student enrolment and 87% of all schools in the country. There are also fully private schools which do not receive public subsidies and technical schools owned by the Ministry of Education and administered by non-profit organisations linked to entrepreneurial organisations. Table 1 shows the number of schools and students by type.

Table 1. Number of schools and students in Chile

|  | Public | Private publicly subsidised | Private fee-paying | Delegated administration | Total |
|---|---|---|---|---|---|
| Schools | 4,667 | 5,089 | 950 | 122 | 10,828 |
| Students | 1,077,216 | 1,492,847 | 270,505 | 44,913 | 2,885,481 |

Note: The number of public schools comprises 4,411 municipal schools and 256 schools under the recently created Public Education Local Services, which started in 2018 and will gradually receive all municipal schools.

Chile's school system's governance operates at national and subnational levels and through various agencies. Schools, especially those funded by public subsidies, are directly related and accountable to several overseeing organisations. The leading institutions of the Chilean school system are:

- Ministry of Education: Sets curriculum and regulation standards and gives schools financial resources. Units inside the Ministry also offer technical and pedagogical support to schools.
- Agency for the Quality of Education: Leads the evaluations of schools' educational quality. It measures students' learning achievement, assesses school performance, makes those results publicly available and validates the teacher and principal evaluation mechanisms developed by individual schools.
- Education Superintendence: Protects the rights of all members in educational communities by inspecting compliance with educational regulations, processing complaints from families or other actors about potential violations of their educational rights and providing schools and their owners with knowledge and information.

- Regional and provincial education units: Represent the principal organisations in the Chilean school system at subnational levels. Education Regional Secretariats (SEREMIs) and Education Provincial Departments (DEPROVs) are responsible for implementing and supervising the Ministry of Education's national policies in the respective territories and providing schools with technical and pedagogical support. There are also regional units of the Education Superintendence and macro-zone units of the Agency for Quality Education.
- Providers: Manage a single school or a group of schools and their resources, infrastructure and staffing, among other administrative roles. For public schools, the provider is regularly a municipal education department or a municipally controlled non-profit corporation. Private non-profit or for-profit private entities carry out this role, but only the former can be publicly subsidised.

## 4.    Methods

We designed a survey experiment for school principals grounded on specific participants' institutional context features, addressing previous endogeneity concerns and calls for a behavioural approach when testing emotional and attitudinal responses to red tape (Bozeman 2012; Pandey et al. 2017; Carrigan et al. 2020; Grimmelikhuijsen et al. 2017). As detailed below, the experiment initially primed participants about their regular exposure of red tape by leveraging the regular requirements they had to comply with in various management and educational areas. Then, we exposed them to randomly manipulated red tape intensities by presenting hypothetical scenarios in which the number of regular requirements shown increased, decreased or was maintained. Subsequently, a question assessing principals' burnout in the vignette was presented.

The survey experiment was targeted at principals since managerial roles in schools are particularly susceptible to red tape effects (Borst et al. 2018). School principals perform many complex tasks including making strategic decisions about their schools' curriculum and instruction, managing personnel and budgets and establishing school policies (OECD 2020b). These responsibilities usually involve a level of operational detail beyond the principals' capacity (Friedman 1995). The

duties also require networking with various stakeholders including teachers and other school staff, students, parents and central and subnational public sector agencies which might also mean higher exposure to red tape (Torenvlied and Akkermann 2012). Administrative constraints such as interruptions, urgent paperwork and meetings have been identified as organisational predictors of school principals' burnout (Van Droogenbroeck et al. 2014; Mazur and Lynch 1989). Principals are generally more interrupted by administrative hassles than by administrative responsibilities (Poirel et al. 2012).

The Agency for the Quality of Education of the Ministry of Education in Chile distributed the survey via email. This organisation sent four email invitations to 6,025 school principals between November 2018 and January 2019. They were later reminded about the chance of voluntary participation during in-person training sessions conducted by the Agency in meetings across Chile in December 2018.

A total of 469 people participated in the survey, representing a 7.7% response rate. However, an initial screening question excluded 94 individuals in other managerial roles since the survey was targeted only at school principals. In addition, the compliance burden in the experimental design was primarily targeted at public schools and those private schools which were publicly subsidised. Thus, 17 principals from private schools and 4 heading schools with delegated administration were excluded from the sample.

Table 2 exhibits the statistics for the final 354 eligible subjects. Participants were mainly female (52%) and 50 years or older (73%). Most had completed a master's or a doctoral degree (66%) and had 3 years of experience as principals at their schools or more (77%). Their schools were predominantly publicly subsidised rather than public (61%) and from many regions in Chile outside the Metropolitan Region (78%), representing 15 of the 16 regions of the country. Eligible respondents were similar to the target population in these observable characteristics (see Appendix B). We added demographic controls in our analyses to adjust for non-response based on the abovementioned observable characteristics and our findings were not substantively affected by this.

Table 2. Descriptive statistics of eligible school principals

| Variable | Survey respondents | |
|---|---|---|
| | % | n |
| *Administrative dependence* | | |
| Public | 39 | 121 |
| Non-public | 61 | 189 |
| | | |
| *Regions* | | |
| Metropolitan region | 22 | 65 |
| Other regions | 78 | 231 |
| | | |
| *Gender* | | |
| Male | 47.9 | 149 |
| Female | 52.1 | 162 |
| | | |
| *Age* | | |
| Less than 50 | 27.5 | 86 |
| 50 or older | 72.5 | 227 |
| | | |
| *Experience as principal at school* | | |
| Less than 3 years | 23 | 72 |
| 3 years or more | 77 | 241 |
| | | |
| *Education level* | | |
| Bachelor/Professional degree | 34 | 106 |
| Master/PhD | 66 | 206 |

Table 3 shows the survey flow and the wording of the prime, the vignettes and the final question. The experiment initially primed respondents by reminding them about the regular compliance requirements around various administrative, financial, educational and human resource areas. Moreover, a list of these standard requirements was presented. Most of these educational and management requirements are formally established by the Ministry of Education and a variety of

stakeholders demand them. These include educational agencies and their subnational units, parents, providers (e.g. municipalities), school councils, teachers' councils and organisations providing support to schools such as NGOs, consultants and universities. The identification and listing of requirements were grounded on the regulations of the educational system in Chile, internal documents from the Agency for the Quality of Education and three major policy reports about the administrative burden schools' principals experience (CEDLE 2018; Educación 2020 2018; Ministry of Education 2018). Finally, the list was developed with feedback from the Agency for the Quality of Education to ensure that it accurately included all the standard compliance requirements of publicly funded schools in Chile.

Table 3. Survey flow and vignettes

| | | | |
|---|---|---|---|
| Prime | Please think about the **educational, administrative, financial and human resource management requirements** that you must deliver as your school's principal. <br> As a reference, there is a list below including the more common requirements, according to national studies and reports on this issue (see Appendix C) | | |
| Treatment and control vignettes | Increase treatment <br> ($n_{increase} = 115$) | Control <br> ($n_{maintain} = 118$) | Decrease treatment <br> ($n_{decrease} = 121$) |
| | As a result of a ministerial measure, suppose that at the beginning of next year the number of requirements related to educational management, administration, finances and human resource management you must deliver | | |
| | **increases** in X% | **maintains** as it is | **reduces** in X% |
| Question | **Given the situation presented**, please indicate how frequently you think you will experience the following situations in your school next year | | |

After the priming with the list of requirements, we experimentally manipulated red tape by presenting one out of three randomly assigned hypothetical scenarios: one increasing the requirements, one decreasing the requirements, and the other maintaining the requirements as a control group. Both scenarios showing a rise or decline in the requirements for principals also included a percentage to quantify the magnitude of the increase or decrease. This percentage was a random variable with a uniform distribution, ranging from 5 to 50.

The operationalisation and experimental manipulation of red tape were informed by the work environment of school principals participating in the study. The volume of requirements that schools and their principals face has been highlighted as the epitome of red tape within the Chilean educational system by specialised public, non-profit and academic organisations (CEDLE 2018; Educación 2020 2018; Ministry of Education 2018). As part of the de-bureaucratisation plan of the Chilean educational system ('*All to the Classroom*'), the Superintendence of Education analysed and systematised all extant ruled-based obligations of schools, finding no fewer than 2,500 requirements, resolving to reduce this number by 50% (Superintendence of Education 2018; Yévenes 2018). The media stressed this number of compliance obligations at schools to portray the utmost gravity of red tape within the educational system and featured the percentage of reduction of such requirements as a primary goal of the proposed de-bureaucratisation plan (see Appendix A).

After each vignette, the survey asked respondents: "Given the situation presented, please indicate how frequently the following situations would happen to you in your school during next year." A set of 14 items was shown in random order below this question, describing respondents' attitudes and emotions towards their work and the people they serve. These items were inspired in their wording by a validated burnout questionnaire in Chile, which is an adaptation by Olivares-Faúndez et al. (2014) of the Maslach Burnout Inventory translated into Spanish (Maslach & Jackson, 1981, Gil-Monte 1994; Gil Monte y Peiró 1997). Olivares-Faúndez et al. (2014) validated this adapted burnout questionnaire using a sample of human service employees, including primary and secondary school teachers. We conducted a focus group in November 2018 to pretest our burnout questionnaire as well as the list of compliance requirements in the prime. Participants comprised eight professionals of the Agency for the Quality of Education, mostly former school principals or teachers. We did not pre-measured respondents' occupational burnout before the vignette experiment in the survey.

The items exhibited included questions measuring the three burnout dimensions: six for emotional exhaustion, four for depersonalisation, and four for personal accomplishment. They were worded into conditional form to be consistent with the headline question and, hence, the hypothetical scenarios presented in the

vignettes. The questions around emotional exhaustion contain items such as 'I would feel overburdened by my work,' the depersonalisation statements include 'I would treat some people as if they were objects,' and the personal accomplishment items comprise 'My work would influence other people's life positively.' Respondents thus rated how frequently they would experience each attitude and emotion using a 7-point Likert scale, starting from never (0), a few times a year (1), once per month or less (2), more than once per month (3), once per week (4), more than once per week (5), to every day (6).

The adjustment of the statements to conditional forms shaped the outcome variables as they measured the anticipated burnout —emotional exhaustion, depersonalisation, and personal accomplishment— that school principals would experience in the hypothetical scenarios presented in the vignettes. The use of anticipated burnout measures as proxies of burnout represents a limitation of our study. However, they certainly represent a valid measure of burnout risks and can provide insights into real burnout, as shown by correlational evidence (Ross & Val Seeger, 1988). Further, as research on attitude strength suggests (Krosnick & Petty, 1995; Howe & Krosnick, 2017), our study design stresses crucial determinants of attitudes' persistence, stability over time and influence on cognition and actions. More particularly, the significance of the attitude (i.e., burnout) and attitude object (i.e., red tape) for individuals, their information about the attitude object and how easily the attitude comes to their mind. Red tape and the occupational health consequences it may produce are of are, indeed, of particular importance for school principals in Chile. Also, they are knowledgeable about red tape and its implications and hence they are highly sensitive to the attitudes red tape evokes.

The independent variable in our analysis is the group that respondents were randomly assigned in the vignette experiment (i.e., increase red tape, maintain red tape, decrease red tape). Our three outcome measures were the average of all the corresponding responses to emotional exhaustion, depersonalisation, and personal accomplishment. We developed a measurement model (Confirmatory Factor Analysis—CFA) to check that our burnout measures are meaningful in the Chilean setting and test the reliability of each burnout dimension.[3] As noted, we also

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[3] The model fits the data **reasonably well** ($\chi^2_{74}$= = 197.81, p < 0.00001; RMSEA [root mean square error approximation] = 0.069; CFI [comparative fix index] = 0.942). The Cronbach's alpha for each burnout measure

gathered information on a series of schools' and principals' covariates to help improve the efficiency of our average treatment effect estimates.

For the exploratory analyses of treatment intensity, we use a continuous red tape treatment variable consisting in the interaction of the treatment group assigned and the percentage shown to participants in the vignette. Therefore, this variable is just the multiplication of both variables—including a zero percent change for the group exposed to a continuation of their regular compliance requirements. The continuous red tape treatment variable thus ranges from -50 to 50.

## 5.      Results

We present our results in three steps. We first show through balance tests that randomisation appears to have been successful. Subsequently, we examine the three burnout measures, ignoring treatment group differences. Descriptively, we show substantial variation in school principals' emotional exhaustion, depersonalisation and personal accomplishment. To explain this, we next turn to the main analysis of the experimentally manipulated red tape. We use regression models for each burnout measure: one includes just the treatment variable assigned to school principals, whereas the others include control variables to examine whether the results remain robust.

As illustrated in Appendix D, balance tests suggest that randomisation was successful for the observable characteristics. This means the treatment and control groups were not significantly different in respondents' gender, age, education and experience as principals at their schools. The administrative dependence and geographic location were also not significantly different. The mean percentages were not statistically different, comparing both treatment groups in which they were indeed shown to respondents.

Appendix E shows that school principals' burnout outcomes vary substantially when analysing their three burnout measures ignoring treatment groups. However, responses tend to be slightly concentrated on lower scores across these indexes,

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was appreciably above standard benchmark (0.91 for emotional exhaustion is 0.91, 0.7 for depersonalisation is 0.7 and 0.71 for personal accomplishment is 0.71.

especially for depersonalisation. Respondents' emotional exhaustion ranges from 0 to 5.83, and its mean and standard deviation are 1.76 and 1.43 respectively. Depersonalisation ranges from 0 to 5.75, and its mean and standard deviation are 0.87 and 1.14. Personal accomplishment (reversed) ranges from 0 to 6 and its mean and standard deviation are 1.18 and 1.16. Burnout measures' distribution visualisations and measures of dispersion demonstrate a significant variation in participants' emotional exhaustion, depersonalisation and personal accomplishment.

Moving on to the primary analysis of experimental effects, Figure 1 exhibits the means of the three burnout outcomes for each treatment and control group with 95% confidence intervals (CIs). Table 4 presents the corresponding ordinary least squares (OLS) regressions for the main treatment effects (increase or decrease in red tape), using the control group as the reference (maintaining red tape). For estimation efficiency, and as a robustness check, we also control for principals' sociodemographic and professional attributes and by characteristics of their schools.

In support of **H1**, our findings show that red tape increases school principals' emotional exhaustion. More particularly, increasing red tape for school principals produces an average growth of 0.59 points in emotional exhaustion ($p < 0.01$), while declining red tape leads to a mean decrease of 0.34 points in emotional exhaustion ($p < 0.05$). These differences represent an increase and a decrease of 0.4 SD and 0.27 SD in respondents' emotional exhaustion.

Red tape rise also leads to an increase in principals' depersonalisation by 0.41 points on average ($p < 0.05$), which represents an increase of 0.33 SD in respondents' depersonalisation. This result is consistent with **H2** and represents an increase of 0.33 SD in school principals' depersonalisation. Notwithstanding a red tape decrease, as expected, reduces school principals' depersonalisation, this result is not statistically significant ($p = 0.158$).

The effect of increasing red tape on respondents' sense of personal accomplishment also offers support for **H3**. Increasing red tape produces a decline in school principals' mean personal accomplishment of nearly 0.31 points ($p < 0.05$),

which represents a decline of 0.27 SD. However, the red tape decrease did not lead to a statistically significant rise in participants' sense of personal accomplishment.

In sum, as our regression analyses indicate, increasing red tape leads to higher emotional exhaustion and depersonalisation and lower personal accomplishment in school principals. Moreover, decreasing red tape also reduces school principals' emotional exhaustion, although it does not reduce their depersonalisation or increase their sense of personal accomplishment. All our main inferences remain robust after covariate adjustment.

Figure 1. Differences in means for each burnout measure with 95% CIs
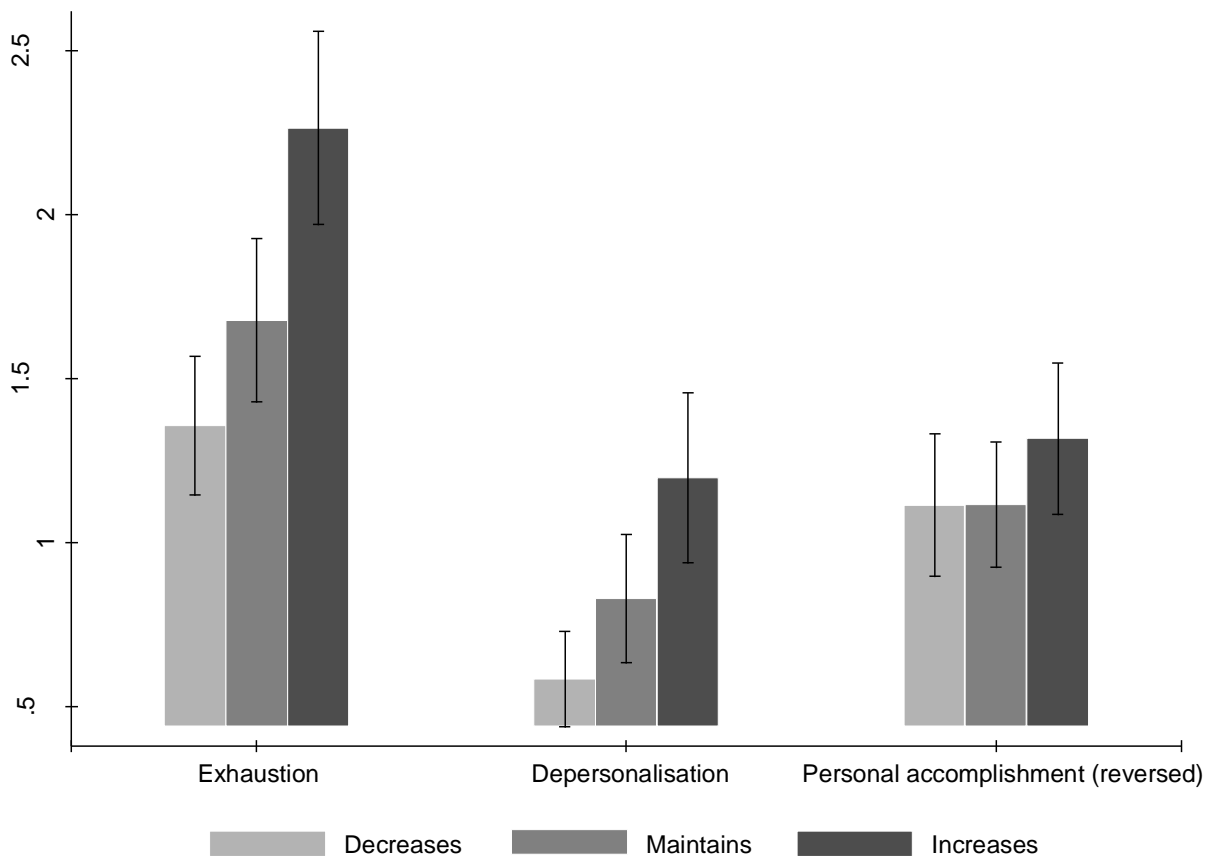
Table 4. Regression results

| | Emotional exhaustion | | Depersonalisation | | Personal accomplishment | |
|---|---|---|---|---|---|---|
| Decrease red tape | -0.339* | -0.330* | -0.211 | -0.170 | 0.0156 | 0.007 |
| | (0.180) | (0.198) | (0.149) | (0.168) | (0.151) | (0.168) |
| Increase red tape | 0.585*** | 0.537*** | 0.414*** | 0.460*** | 0.305** | 0.303* |
| | (0.183) | (0.199) | (0.150) | (0.168) | (0.154) | (0.170) |
| Administrative dependence (Public) | | -0.184 | | 0.0716 | | -0.198 |
| | | (0.180) | | (0.150) | | (0.153) |
| Regions (Metropolitan Region) | | 0.175 | | 0.188 | | 0.420** |
| | | (0.207) | | (0.172) | | (0.177) |
| Gender (Female) | | 0.0685 | | -0.234* | | -0.139 |
| | | (0.165) | | (0.139) | | (0.141) |
| Age (50 or older) | | -0.199 | | 0.0619 | | 0.00311 |
| | | (0.187) | | (0.160) | | (0.160) |
| Experience (3 years or more) | | 0.0149 | | 0.122 | | 0.0280 |
| | | (0.199) | | (0.169) | | (0.169) |
| Education (Master/PhD) | | -0.178 | | -0.0763 | | 0.0229 |
| | | (0.174) | | (0.147) | | (0.147) |
| Constant | 1.684*** | 1.968*** | 0.809*** | 0.740*** | 1.079*** | 1.120*** |
| | (0.128) | (0.301) | (0.107) | (0.254) | (0.108) | (0.255) |
| R-squared | 0.071 | 0.080 | 0.052 | 0.069 | 0.014 | 0.051 |
| F-statistic | 13.16 | 2.96 | 9.10 | 2.45 | 2.5 | 1.82 |
| N | 346 | 283 | 336 | 275 | 343 | 282 |

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

We examine the effects of treatment intensity by moving on to Appendix F, which exhibits the treatment effects estimated using an OLS regression on the three burnout metrics and using our continuous red tape treatment variable. The estimates are presented with and without the set of controls used in our previous analysis. As the regression coefficients indicate, a one percent increase in school principals' regular red tape leads to an average increase of 0.12 points of increase in their emotional exhaustion and 0.09 points of average increase in their depersonalisation. Although, as expected, the increase of one percent in red tape diminishes school

principals' sense of personal accomplishment, this effect is not statistically significant (p=0.193).

## 6.      Discussion and Implications

This study provides further insight into the consequences of red tape on occupational stress in public service, a crucial, yet mostly unexplored outcome of red tape. In a survey experiment with Chilean school principals, we found overall support for our hypothesis that red tape leads to burnout risks. As theorised, our findings show that red tape causes emotional exhaustion, depersonalisation and low personal accomplishment. More specifically, exposing school principals to information indicating an increase in their regular compliance burden requirements raises their emotional exhaustion, depersonalisation, and sense of low personal accomplishment, whereas showing them information signifying a reduction of requirements decreases their exhaustion. We found no evidence that a potential lessening of compliance burden requirements would decrease participants' depersonalisation and sense of low personal accomplishment.

The results also serve to underscore that red tape causes burnout risks but affects burnout dimensions differently. As discussed in the literature review, emotional exhaustion is substantively more vulnerable to red tape, followed by depersonalisation and then personal accomplishment (Gmelch and Gates 1998; Hakanen et al. 2008; Schaufeli and Taris 2005). This means that school principals respond to red tape mostly feeling overloaded and resource-undermined as well as disengaging from people and their job at their organisation. To a lesser extent, they also react with a sense of low competence and achievement.

The relative differences in the effects of red tape across burnout dimensions are consistent with recent metanalytic evidence alluding to a lower detrimental effect of red tape on performance-related outcomes while leading to a higher deterioration in attitudes associated with health-related well-being and engagement (Blom et al. 2020). According to this metanalysis, public servants work around red tape to achieve their jobs' goals, mainly internalising its repercussions. Furthermore, school principals' low personal accomplishment could be interpreted as a long-term red tape consequence, whereas emotional exhaustion and

depersonalisation represent a more immediate reaction and a mid-term strategic response respectively (Kristensen et al. 2005). These results ultimately stress the distinctiveness of each burnout dimension as manifestations of the same syndrome and the need to study them in their own right (Maslach et al. 2001)

This study also shows that burnout worsening due to red tape rises is substantially higher than the potential relief experienced from cutting it. The size effect of the increase in emotional exhaustion due to greater red tape is substantially higher than the magnitudes in the decline of this burnout metric owing to less red tape. Further, whereas we found that increasing red tape increases depersonalisation and a low sense of personal accomplishment, decreasing it does not result in an improvement in these burnout metrics. These asymmetric effects are suggestive of a non-linear response of school principals' occupational stress and burnout to red tape fluctuations.

Additionally, these asymmetric effects and their implications result from studying school principals' responses to red fluctuations from already high base levels, as red tape operationalisation and experimental manipulation depend on their regular compliance burden requirements (CEDLE 2018; Educación 2020 2018; Ministry of Education 2018). This illustrates the importance of testing red tape repercussions in hitherto unexplored models of public service institutions where red tape is more predominant and harmful than those widely examined by earlier studies in developed European countries and the US (George et al. 2021; Blom et al. 2020).

The findings of this research might reach public services in many countries which, like Chile, are part way towards effectively cutting red tape or serve as a guide for public services from countries at earlier stages of this journey. The high compliance burden faced by school principals participating in the study, which motivated and shaped this research, is a fairly common problem, one that is experienced globally across many governments struggling with achieving administrative simplification and digitalisation (e.g. Roseth et al. 2018).

The experimental evidence provided also expands the recent rise in behavioural approaches to strengthen the research on emotional and attitudinal responses to red tape and complement the pervasiveness of observational studies in this area

(Pandey et al. 2017; George et al. 2021; Blom et al. 2020; Bozeman 2012; Carrigan et al. 2020; Grimmelikhuijsen et al. 2017).

In terms of the limitations, we randomly manipulated red tape in a vignette rather than in a field experiment. Meaningful red tape operationalisations in field experiments for public servants that are informed by their real work environment—as we intended in our study—are difficult to achieve and not exempt from ethical considerations. One particular apprehension is the potential and perhaps irreversible damage that inducing greater red tape could have on officials and public service delivery. Whether the findings from our vignette experiment could be replicated in a field experiment that overcomes these challenges remains an unanswered question.

In addition, as a consequence of our experimental design, we measured the burnout risk of school principals through an attitudinal measure capturing their anticipated burnout after the vignettes. Future research should inquire into whether attitudinal measures of burnout risks translate into real burnout of public servants.

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**Appendices**

Appendix A. Headlines of Chilean news featuring the problem of red tape and compliance requirements in the Chilean educational system



Sources from upper left to bottom right: Quevedo (2018); Cooperativa (2019); Rodríguez (2018); Ojeda and Rodríguez (2018); 24 Horas (2018); T13 (2018); Yévenes (2018); Diario Constitucional (2018)

Appendix B. Descriptive statistics of eligible school principals

| Variable | Survey respondents | | Target population | |
|---|---|---|---|---|
| | % | n | % | n |
| *Administrative dependence* | | | | |
| Public | 39 | 121 | 47.1 | 5,168 |
| Non-public | 61 | 189 | 52.9 | 5,806 |
| | | | | |
| *Regions* | | | | |
| Metropolitan region | 22 | 65 | 24,2 | 2,653 |
| Other regions | 78 | 231 | 75.8 | 8,321 |
| | | | | |
| *Gender* | | | | |
| Male | 47.9 | 149 | 38.5 | 4,229 |
| Female | 52.1 | 162 | 61.5 | 6,745 |
| | | | | |
| *Age* | | | | |
| Less than 50 | 27.5 | 86 | 40.3 | 4,420 |
| 50 or older | 72.5 | 227 | 59.7 | 6,554 |
| | | | | |
| *Experience as principal at school* | | | | |
| Less than 3 years | 23 | 72 | 19.8 | 2,171 |
| 3 years or more | 77 | 241 | 80.2 | 8,803 |
| | | | | |
| *Education level* | | | | |
| Bachelor/Professional degree | 34 | 106 | NI | NI |
| Master/PhD | 66 | 206 | NI | NI |

Note: Target population's characteristics are based on the Ministry of Education's administrative data of all Chilean schools' workers in 2018. Experience as principal at school was proxied in the target population considering the whole experience of principals working at their schools and hence

also includes other previous roles—not only their jobs as principals.

Appendix C. List of the regular compliance burden requirements of school principals in Chile

*Administrative and Financial Requirements*

- Keep updated enrolment and attendance information.
- Reply to official letters and physical evidence requests to the provider.
- Report malfunctions in digital platforms to the Ministry of Education and/or the Agency for the Quality of Education.
- Conduct meetings and workshops for the Educational Improvement Plan (PME).
- Connect the goals of the Educational Improvement Plan (PME), the Preferential School Subsidy (SEP) Law, and the Agency for the Quality of Education.
- Prepare and verify compliance with requests from the Educational Improvement Plan (PME).
- Manage the technical pedagogical support for the Education Provincial Department's (DEPROV) supervision.
- Prepare the Preferential School Subsidy's (SEP) annual rendering of accounts.
- Prepare the school's general rendering of accounts.
- Develop new procedural protocols for safety behaviour, accidents, mistreatment, harassment, etc.
- Update school plans for school climate, sexuality, inclusion, professional development, citizenship education and healthy lifestyle.
- Collect and submit documentation for the SET 12 (a sworn statement required for the Educational Subventions Law) to enforce new students' right to subsidies.
- Collect internal information from the General Student Information System (SIGE) to send to overseeing institutions (e.g. National Quality Assurance System in Education, providers or the General Comptroller Office).
- Collect internal information to report on digital platforms.
- Judge students' eligibility for studies conducted by national and international consultants.
- Fill out visit questionnaires for the Agency for the Quality of Education.

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- Coordinate teachers' interviews with the Agency for the Quality of Education or other institutions and get the consequent support or replacement.
- Coordinate and run meetings with organisations interested in intervening in the school: universities, NGOs, neighbourhood councils, health services, municipal departments, etc.

*Educational Management Requirements*
- Choose the students' representative for various school celebrations, artistic events, recognition ceremonies, festivities, etc.
- Meet with the municipality to participate in local government bodies and planning.
- Manage the preparation of school buildings for local services (neighbourhood councils, libraries and sports, cultural or social development corporations) or higher subnational government authorities.
- Conduct the regular school councils (School Council or Teachers' Council).
- Address internal conflicts in the educational community concerning students, teachers and staff members.
- Oversee the development of various policy programmes at the school: healthy lifestyle, orientation, sexuality, road safety education, dental health, etc.
- Participate in meetings, groups, and engagement activities of school improvement networks.
- Keep records of planning and assessment activities of the School Integration Programme (PIE) and its students.
- Plan and implement school curriculum updates and innovations.
- Verify and manage payment codes for the School Integration Programme (PIE).
- Conduct diagnoses and judge needs to hire Educational Technical Assistance (ATE).
- Manage, coordinate and notify internally external assessments at the school (e.g. National Standardised Test (SIMCE)).
- Interview or meet with parents and guardians due to cases around school climate, complaint management or other issues.

- Update teachers with news about teaching regulations and assessments from the Department of Municipal Education Administration (DAEM) or the provider.
- Coordinate the schedule and reception of interns and their placements in courses.
- Approve and assess off-site course visits to museums, libraries, beaches and places of interest.

*Human Resource Management Requirements*
- Conduct diagnoses of staff needs.
- Manage the recruitment and selection of personnel (receive applications, conduct interviews, read applicants' background information, deliberate, select, etc.).
- Comply with management team internal requirements.
- Verify the harmonisation of contracts involving resources from the Preferential School Subsidy (SEP) and the School Integration Programme (PIE).
- Manage the implementation of the teacher assessment process (procedures for the National Teacher Evaluation System (SNED) and the Collective Performance Allowance (ADECO).
- Manage the supervision and internal collaboration of the Technical Pedagogical Unit (UTP) team and teachers.
- Verify bonus adjustments under the Teaching Career Policy.
- Ask the school provider for confirmation, approval, support, or feedback regarding new personnel to be hired.

Appendix D. Balance tests of each treatment vs. control

| | Maintaining red tape [M] | Increasing red tape [I] | Decreasing red tape [D] | P value [M] = [I] | P value [M] = [D] | P value [I] = [D] |
|---|---|---|---|---|---|---|
| Administrative dependence (% public) | 61.11 | 65.31 | 56.73 | 0.536 | 0.519 | 0.214 |
| Regions (% Metropolitan Region) | 22.86 | 19.57 | 23.23 | 0.576 | 0.95 | 0.54 |
| Gender (% female) | 56.07 | 52.00 | 48.08 | 0.559 | 0.247 | 0.578 |
| Age (% 50 years or older) | 72.48 | 70.00 | 75.00 | 0.694 | 0.678 | 0.426 |
| Experience as principal at school (% 3 years or more) | 77.06 | 73.00 | 80.77 | 0.5 | 0.510 | 0.19 |
| Education level (% Master/PhD) | 63.89 | 66.00 | 68.27 | 0.751 | 0.503 | 0.732 |
| Percentage (mean) | NA | 27.74 | 27.24 | NA | NA | 0.785 |

Appendix E. Distribution of responses to red tape vignette

Personal accomplishment (reversed)
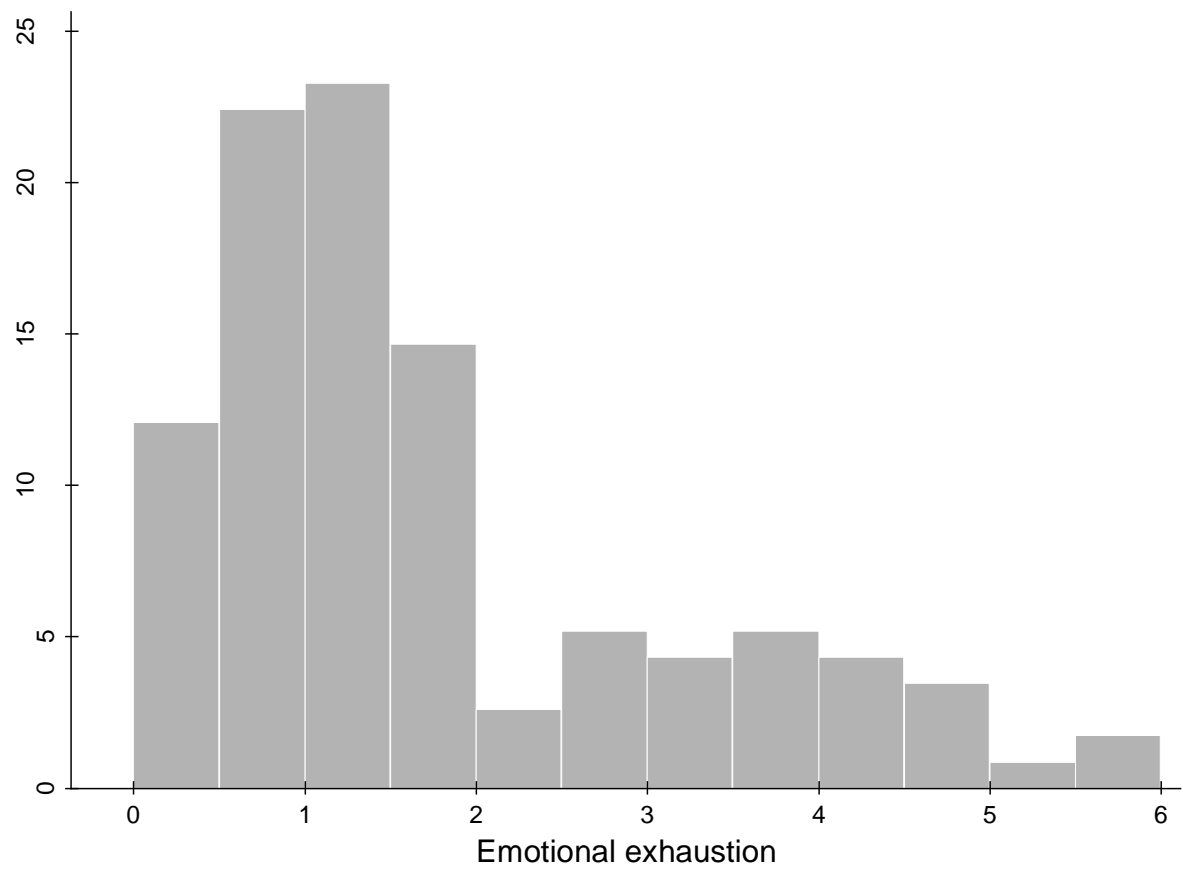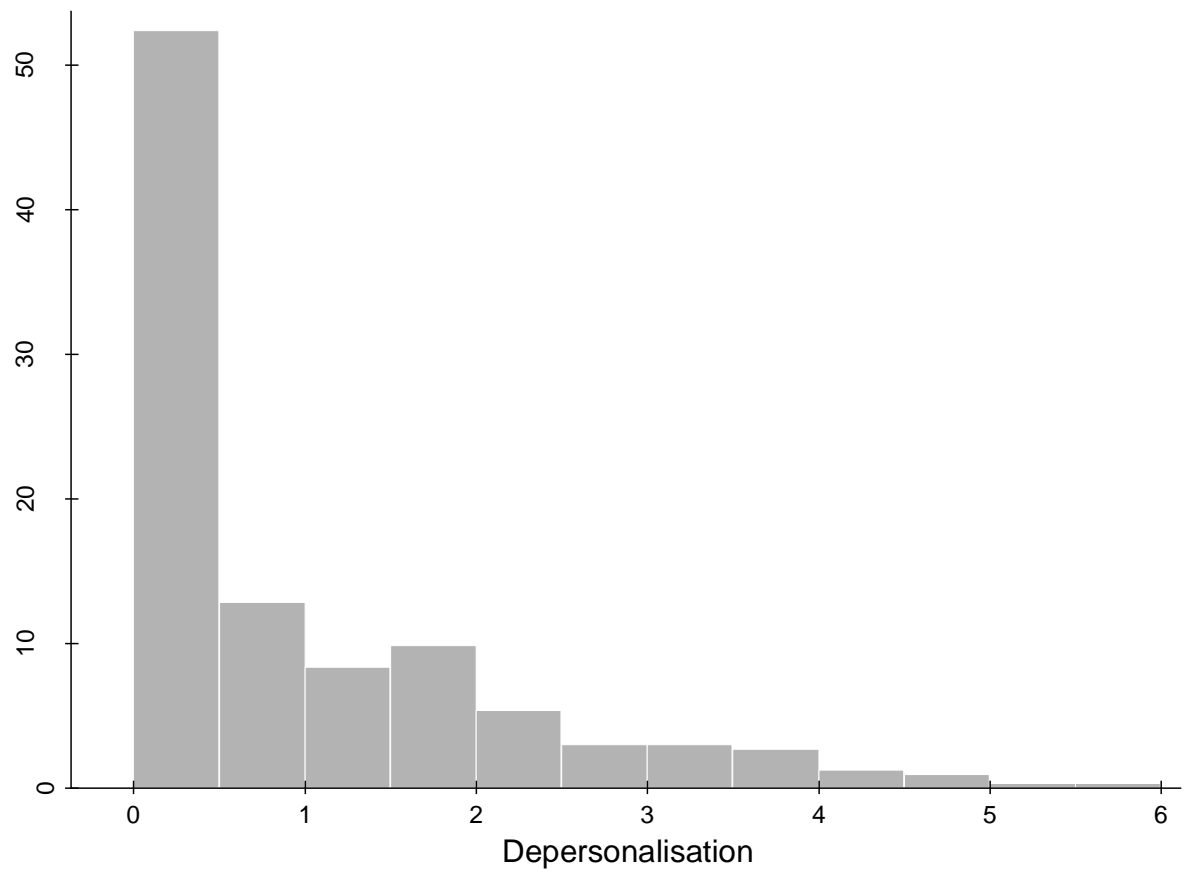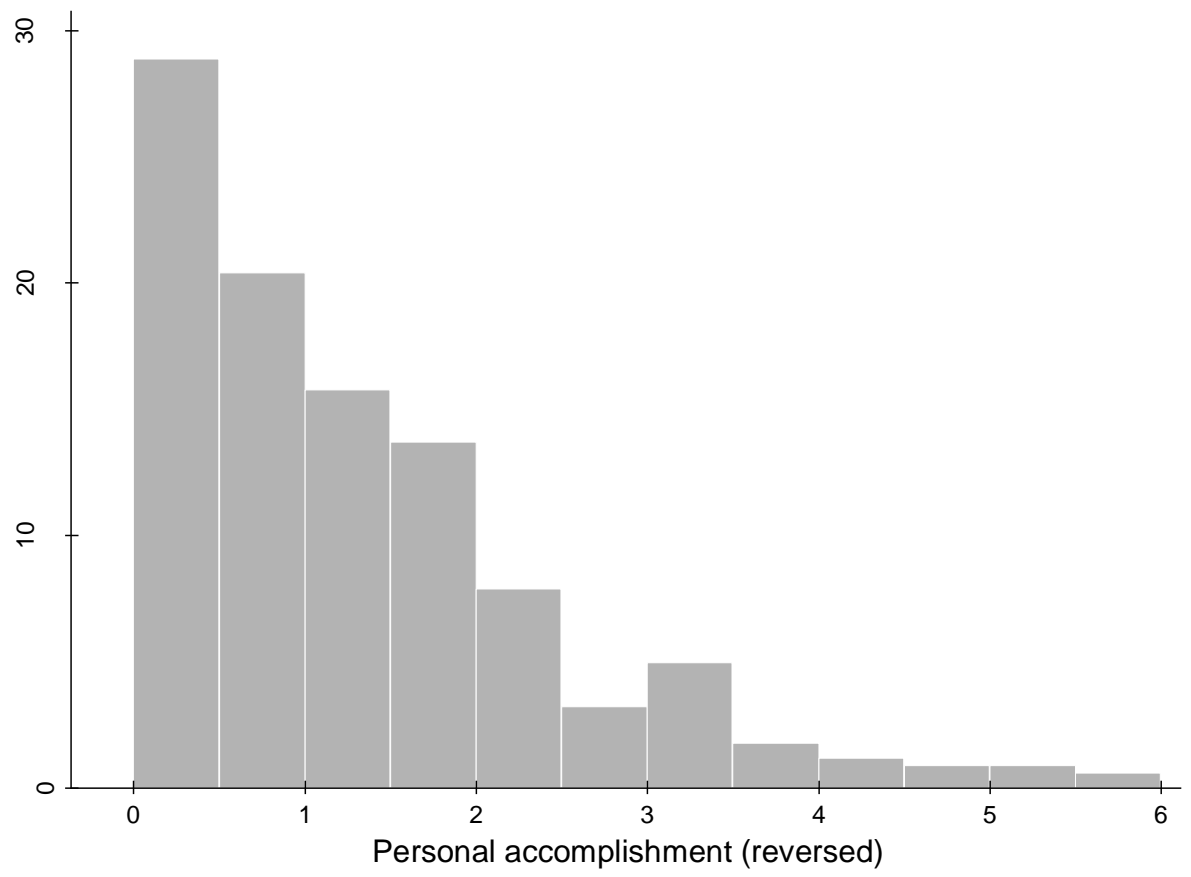
Appendix F. Effects of red tape as a continuous variable on burnout measures

| | Emotional exhaustion | | Depersonalisation | | Personal accomplishment | |
|---|---|---|---|---|---|---|
| Red tape | 0.013*** | 0.012*** | 0.009*** | 0.009*** | 0.004 | 0.004 |
| | (0.175) | (0.189) | (0.138) | (0.159) | (0.193) | (0.219) |
| Controls | No | Yes | No | Yes | No | Yes |
| N | 346 | 283 | 336 | 275 | 343 | 282 |
| R-squared | 0.051 | 0.60 | 0.040 | 0.057 | 0.008 | 0.043 |

Standard errors in parentheses *** p<0.01, ** p<0.05, *p<0.1