



“Red Tape and Employee Outcomes: Boredom at Work as a Mediator”

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Abstract

Red tape in the workplace is generally accepted to be harmful to both employees and organizations, but the underlying mechanism is still understudied. This study proposed work-related boredom as a potential mediator of the relationships between red tape and its outcomes, i.e., turnover intention, burnout, and in-role and extra-role work performance. To better understand the operations of the relationships, we divided red tape into two dimensions, functionality and burden. As predicted, the results showed that both dimensions of red tape and boredom were closely related and had detrimental effects on employee outcomes. Work-related boredom acted as a partial mediator within these relationships, except when the in-role performance was the outcome, boredom fully mediated the effect of red tape – functionality on in-role work performance, whereas there is no mediation of boredom existing within the relationships between red tape – burden and in-role performance. Our study suggested that all types of red tape can negatively impact employees. Furthermore, future research could focus on boredom as a general mediator of red tape and its effects.

Red tape and employee outcomes: boredom at work as a mediator

Boredom is a universal human experience and may be experienced at any moment in one's daily life. However, people do not seem to like it, as the French novelist Émile Zola (1883) said "I would rather die of passion than of boredom". People are therefore often looking for ways to escape boredom, especially in today's era when there are countless forms of entertainment and consumer goods. Various games and short videos are competing for people's limited attention on the internet. People also seem to desire to fill their leisure time with "interesting" things as a way to counteract boredom.

Boredom can be caused by a variety of factors (Fahlman, Mercer-Lynn, Flora, & Eastwood, 2013), such as repetitive tasks, lack of stimulation, low work control, and strict organizational rules, also known as "red tape". Like the author Robert D. Kaplan (2018) once said: "Boredom is... a vital problem for the moralist, since at least half the sins of mankind are caused by the fear of it". In the workplace, boredom, and the fear that it generates can have serious consequences for both the individual and the organization (Simonton, 1992). When employees are forced to conform to rigid rules and procedures, they will feel constrained and disengaged.

Overall, the experience of boredom at work is a complex and multifaceted issue that has implications for individuals, organizations, and society in general. In this thesis we will focus on the relationship among red tape, work boredom, and employee outcomes. Below, we first discuss the background information of red tape and link it with its negative impacts (burnout, turnover, performance) through reviewing the existing literature; then, introduce boredom at work as the mediator of this relationship; finally, summarize the main findings and limitations of the current research and further propose the purpose of our study.

Red tape and boredom

Red tape, which originated in the UK, became associated with bureaucracy in the 19th century due to the customary use of red cloth tape to bind official documents (Bozeman, Reed, & Scott, 1992). Today, it is a common term used as a synonym to describe organizational bureaucracy and formalities. In recent decades, red tape has gained a considerable amount of attention from scholars, particularly in the field of public administration (Bozeman & Feeney 2011). As organizational rules are regarded as the backdrop to the lives of public employees (Berman et al., 2012), unnecessarily burdensome rules systems are bound to have an impact on their daily work and performance. Given that red tape was first introduced in relation to government work, the focus of research in this area has naturally been on public administration and frontline work in fields such as hospitals

(e.g., Brodtkin, 2012), government departments (DeHart-Davis, Davis, & Mohr, 2015), and schools (Lipsky, 1980; Wu et al., 2020). Nowadays, most researchers agree and follow Bozeman (1993), who defines 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’ (p. 283)” (e.g., Kaufmann, Borry, & DeHart-Davis, 2019; Pandey & Scott, 2002; Van Loon, 2017). This definition highlights two main characteristics of red tape: (i) the compliance burden, expressed as the time and effort required to comply with the rules, and (ii) the lack of functionality, i.e., the extent to which the rule achieves the purpose it is supposed to regulate. This means that the greater the compliance burden of the rule and the greater the lack of functionality, the greater the degree of red tape (Van Loon et al., 2016).

To date, the impact of red tape has been investigated in terms of job satisfaction (DeHart-Davis, Davis, & Mohr, 2015), organizational commitment (Stazyk et al., 2011), employee motivation (Jacobsen & Jakobsen, 2016), and performance (Brewer & Walker, 2010). It is generally accepted that red tape in organizations can have a negative impact on both employees and the organization. At the individual level, red tape reduces employees’ organizational commitment, job engagement and job satisfaction, in addition to causing employees to show a tendency of burnout on their jobs (Fuenzalida, 2022) and increasing employees’ intention to leave (Jung & Kim, 2014). Furthermore, research has shown that red tape also demotivates employees by taking up resources, such as time (Jacobsen & Jakobsen, 2016), and ultimately reduces employee performance (Van Loon, 2017). At the organizational level, red tape has been proven to reduce organizational effectiveness (Gore, 1993) as well as public satisfaction with organizational procedures (Kaufmann & Tummers, 2017).

While the evidence in the literature is consistent in indicating that red tape has detrimental effects on individuals and organizations (cf. Fuenzalida, 2022), opinions also exist suggesting that it may have some positive outcomes. For example, the formalization processes behind it may attract the right employees to join and protect them from unsafe practices and harassment, which could also facilitate increased teamwork, dispute resolution, and encourage employee advancement (Chen & Rainey, 2014). However, it has also been argued that if organizational rules lead to a favorable impact (or have some functionality), then they cannot be claimed to be red tape (Van Loon, 2017).

Red tape, outcomes and boredom as a mediator

In contrast to the vast literature on the adverse effects of red tape on individuals and organizations, research on the associations among red tape, outcomes and boredom remains

scarce. Some researchers have explored the process factors between red tape and its impact on outcomes through theory, but these studies are rather fragmented, and no one factor seems to be proposed as a mediating variable in multiple relationships at present. Nevertheless, we have found that boredom at work appears to act as this potential mediating variable.

Boredom. As a common phenomenon experienced by most employees (Fisher, 1993; Appelbaum & Kareev, 2015), work boredom has received widespread attention since the last century. Boredom itself is a subjective experience, an unpleasant state of passivity (Daniels, 2000), related to negative affective experiences like restlessness, disinterest, and apathy (Murphy, 2023), arising from the lack of stimulation or challenge in one's environment (Kanevsky & Keighley, 2003). It has been suggested that boredom may be an adaptive response to an unsatisfying environment, signaling people's need for change or new goals (Bench & Lench, 2013). In the workplace, boredom is often thought to be induced by repetitive and simple tasks (Branton, 1970).

Red tape and boredom. In her review, Fisher (2018) grouped the causes of boredom into three main categories: (1) lack of autonomy, too little or too much challenge, and lack of meaning. More specifically, when the work environment lacks autonomy, such as detailed and strict work rules, it is more difficult for employees to experience the activity as interesting (Fisher, 1993) because they tend to attribute all motivation for the task to external control, thus reducing intrinsic motivation, as stated in cognitive evaluation theory (Deci & Ryan, 2013); (2) when tasks are too easy or too demanding for the employee, they can lead to boredom. Moreover, prolonged and repetitive work, or work with low levels of skill diversity and task feedback (lack of stimulation in return) over time can contribute to employees' boredom; (3) when people perceive that what they are doing is not meaningful (Van Tilburg & Igou, 2012) or that it is not relevant to their current focus and goals (Critcher & Gilovich, 2010), they have difficulty concentrating on it and become bored.

At this point, we can notice that organizational regulations that have strict compliance requirements, are often repetitive, simple, lack feedback upon completion and do not contribute to the employee's job content and goals, i.e., they correspond with the definition of red tape and coincide with the three antecedent descriptions of job boredom mentioned above. This idea is also confirmed by the experiments of Harju et al. (2022), who found that red tape had a positive predictive effect on employees' boredom during the period that they investigated.

Boredom and outcomes. Furthermore, similar to red tape, job boredom is almost universally known to be harmful to individuals and organizations (Toscanelli, Udayar,

Urbanaviciute, & Massoudi, 2022). Its effects are not limited to a single type of work, such as a typical production line job. Back in 1975, Caplan and his colleagues had pointed out through a large-scale survey that boredom at work affected all 23 different occupational groups they focused on. Moreover, this trend is being further exacerbated by contemporary automation, advances in technology (Cummings et al., 2016), and the spread of hybrid working (Kaltaiainen & Hakanen, 2022). Moreover, this trend is being further exacerbated by contemporary automation, advances in technology (Cummings et al., 2016), and the spread of hybrid working (Kaltaiainen & Hakanen, 2022). At the level of personal physical and mental health, boredom at work has not only been shown to increase employees' risk of developing diseases such as cardiovascular disease (Fisher, 1993) and produce disruptions in the peripheral nervous system (Sommers & Vodanovich, 2000), but has been positively associated with employees' self-reported anxiety, depression, and neuroticism (Caplan et al., 1975). In addition, empirical studies have demonstrated that boredom at work is also negatively associated with job satisfaction, job engagement, and job performance (Abdolahi, Damirchi, & Ganjeh, 2011; Kass, Vodanovich, & Callender, 2001), and positively associated with absenteeism and turnover intentions (Bruursema, Kessler, & Spector, 2011; Wan, Downey, & Stough, 2014). On the other hand, job boredom can also have an important impact on organizational development. An example could be the increased employee mobility and talent loss caused by increased turnover intentions due to high levels of job boredom can directly lead to a decline in organizational performance (Kass, Vodanovich, & Callender, 2001).

Boredom as a mediator. Building on the above discussion, we have established that red tape involves many of the risk factors for boredom, in terms of both compliance burden and lack of functionality aspects. Moreover, the impact of boredom in the workplace extends beyond its own manifestation, affecting employee outcomes in multifaceted ways, such as personal health and performance during work. It is evident that boredom at work is not only influenced by the intricacies of red tape within organizations but is also linked to the various other effects that red tape has on employees. In other words, we found that job boredom is not only predicted by the level of red tape but is also related to other consequences of red tape.

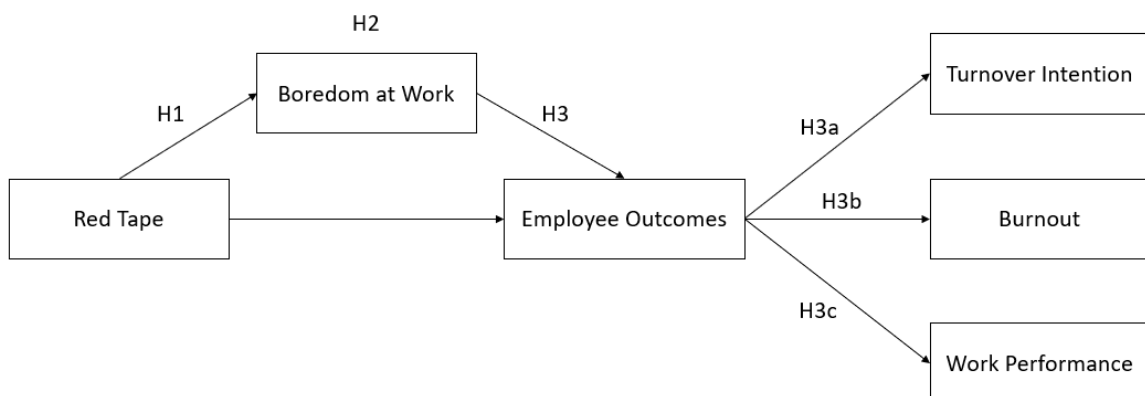
The present study. Recognizing these interconnected relationships, we therefore hypothesize that job boredom can act as a mediating variable between red tape and its effects. After selecting three (significant/relevant) employee outcomes as dependent variables for this study, the following hypotheses were formulated: Red tape will lead to employees' boredom

at work (hypothesis 1), which may (as a mediator. Hypothesis 2) cause their higher turnover intention (Hypothesis 3a), burnout (Hypothesis 3b), and poorer work performance (Hypothesis 3c). The process model that illustrates these hypotheses is shown in Figure 1.

By delving into this hypothesis, we aim to gain a more comprehensive understanding of the complex dynamics among red tape, employee outcomes, and boredom at work. This research holds important implications not only for the academic study of psychology but also for providing valuable practical guidance to organizational managers. Exploring the role of boredom at work as a mediating variable will enable us to develop effective intervention strategies to mitigate the negative effects of red tape on employees, thereby improving their job satisfaction and performance, which also benefits the organization.

Figure 1

Process model: hypothesized relationship among red tape, boredom at work, and employee outcomes



Method

Participant, design and procedure

Before collecting the data, ethical approval was obtained from the Faculty Ethics Review Board (FERB) at Utrecht University. Participants were recruited via Chinese social media (e.g., WeChat), on which they received a link to the questionnaire in Qualtrics. The questionnaire began with a participant information sheet (see Appendix A), including the purpose of this study, requirement for participation, brief description of the questionnaire, potential risks, contact information, etc. This is aiming to ensure participants have some basic knowledge of our study and know the rights they have while participating it (e.g., voluntary

participation, freedom to withdraw). After reading this information and being willing to participate, an informed consent was provided prior to anonymous data collection. The research continued only if participants are over 18 years old and are currently formally employed with certain companies excluding internships and part-time jobs. The questions in the questionnaire were presented to all participants in the same order: basic information including gender, age, years of formal education, and years employed by the current company, red tape, boredom at work, turnover intention, burnout, and work performance. The entire questionnaire consists of 58 questions and takes no more than 10 minutes to complete. No harmful procedures were used, and participants were debriefed after participation.

176 participants who are currently graduated and employed were recruited. Among the 168 participants that agreed with our informed consent, 18 problematic participants were excluded because of incomplete answers. Thus, in total, 150 employees (69 females, 77 males, 2 non-binary, 4 prefer not to say) were included in the study for further analysis. The mean age of the participants was 25.85 years ($SD = 5.07$, range = 21 – 56). All participants hold a bachelor's degree or higher, have an average of 16.88 years ($SD = 1.46$, range = 16 – 23) of formal education and have been employed at their current company for an average of 1.67 years ($SD = 3.18$, range = 0 – 30).

Measures

Because the participants recruited were all working in China, the following scales were translated into Chinese to ensure better comprehension. After the translation was completed, the overall questionnaire was sent to five Chinese people to review and advise on the content in order to make sure the accuracy and understandability of the translation. The total scores of all scales were calculated based on analysis guides. Descriptive statistics were performed for all variables. Factor analyses with principal component analysis and varimax rotation were conducted to explore the underlying factor structure within each variable. Finally, the internal reliability of the scales was assessed.

Red tape

Red tape was measured by the Job-Centered Red Tape Measurement Scale (Van Loon et al., 2016). Conceptually, the scale consists of 9 items to assess two characteristics of red tape, lack of functionality (4 items) and compliance burden (5 items). Factor analysis confirmed that this concept measured two dimensions, functionality (e.g., “The rules with which I have to comply in my core activities/personnel activities/ procurement, finance and control activities have a clear function for my job activities”) and burden (e.g., “The

rules...cause much pressure at work”). The reliability of the functionality-dimension was .821; the reliability of the burden-dimension was .839. Participants rate their responses on a 5-point Likert scale from 1 (totally disagree) to 5 (totally agree). Five of the questions were reverse scored. After adding up the scores for all items in each dimension, high scores indicate that the rules in the organization have a high compliance burden and/or a lack of functionality, i.e. significant red tape.

Boredom at work

The Dutch Utrecht Boredom Scale (DUBS; Reijseger et al., 2013) was used to estimate the level of boredom employees experience at work. The DUBS comprises 8 items, each scored from 0 (never) to 6 (always). Sample items include: “At work, time goes by very slowly” and “At work, I spend my time aimlessly”. The scores for these items were summed to an overall score, with higher scores reflecting higher levels of boredom at work ($\alpha = .847$).

Turnover intention

Turnover intention was assessed with the Roodt’s Turnover Intention Scale (TIS-6; Roodt, 2004). The TIS-6 is a 6-item self-report questionnaire to determine the extent to which employees intend to remain with the organization over the past 9 months (e.g., “How often have you considered leaving your job?” and “To what extent is your current job satisfying your personal needs?”). Participants answered each item on a 5-point Likert-type scale ranging from 1 (never/to no extent/highly unlikely) to 5 (always/to a very large extent/highly likely). The reliability of this scale was .793. During the calculation of the total score, the second item needs to be scored in reverse. A higher score indicates a higher intention to leave the job.

Burnout

Burnout was measured by the work-related version of the BAT which is developed by Schaufeli and colleagues (2020). The BAT is a self-report inventory consisting of 33 items with 6 different components. However, to shorten the length of the questionnaire to avoid overloading of the respondents. We used a short version of this questionnaire which contains only the first three components: exhaustion, mental distance, and cognitive impairment, each scored from 1 (never) to 5 (always). Example items include: “Everything I do at work requires a great deal of effort” and “I struggle to find any enthusiasm for my work”. The reliability of this scale was .941. Higher scores indicate higher levels of burnout experienced by employees in the workplace.

Work performance

The Individual Work Performance Questionnaire (IWPQ; Koopmans, 2015) was used to assess three main dimensions of employees' job performance based on a three-months recall period: in-role performance, extra-role performance and counterproductive work performance. Again, in order to reduce participants' boredom and fatigue caused by overwhelming number of questions, we only used the first two facets, in-role (5 items) and extra-role performance (8 items) in this study, which was also confirmed by the factor analysis. The reliability of in-role and extra-role performance was .889 and .896, respectively. These 13 remaining items have a 5-point scale from 0 (seldom) to 4 (always), with higher scores representing better work performance. Example items include: "I managed to plan my work so that I finished it on time (in-role)" and "On my own initiative, I started new task when my old tasks were completed (extra-role)".

Statistical analyses

The data analysis was performed using SPSS 28.0. Pearson's correlation analysis was performed to examine the associations among all variables. Then, multiple regression analyses were used to investigate the predictive relationships between independent and dependent variables. Lastly, to explore the potential mediating effects, mediation analysis was conducted using macro-program PROCESS 3.5 developed by Hayes (Hayes, 2022). Bootstrapping with 5,000 bootstrap resamples estimated indirect effects and provided a 95% bias-corrected confidence interval. A significant effect was determined when the 95% bootstrap confidence interval did not include zero.

Results

Descriptive analysis

Table 1 shows the descriptive statistics of the study variables. The mean level of job performance ($M = 26.5$) was slightly above the mid-point of the scale (26), while the counterparts of the other four variables were more or less lower than the mid-point of the scale: red tape ($M = 23.92$; 27), boredom at work ($M = 18.21$; 24), turnover intention ($M = 17.58$; 18), burnout ($M = 28.97$; 54).

Table 1*Descriptive statistics of the variables under study*

Variable	<i>M</i>	<i>SD</i>
1. Age	25.85	5.07
2. Formal education (in years)	16.88	1.46
3. Length of work in current company (in years)	1.67	3.18
4.1. Red tape – functionality (4-20)	9.60	2.71
4.2. Red tape – burden (5-25)	14.32	4.06
5. Boredom at work (0-48)	18.21	8.30
6. Turnover intention (6-30)	17.58	4.36
7. Burnout (18-90)	28.97	13.25
8.1. Work performance – in-role (0-20)	11.35	4.30
8.2 Work performance – extra-role (0-32)	15.15	6.92

Correlation analysis

Then, a correlation analysis was conducted to examine the relationships between each variable of interest. The correlation matrix (Table 2) presents the correlation coefficients between the variables.

Table 2*Correlations among the Variables Under Study*

Variable	1	2	3	4	5.1	5.2	6	7	8	9.1	9.2
1. Gender ^a	1										
2. Age	-.05	1									
3. Edu_L	-.00	.36**	1								
4. Work_L	-.04	.83**	.26**	1							
5.1 Red tape – functionality	.00	-.02	-.08	-.07	1						
5.2 Red tape – burden	-.02	-.07	-.17*	-.10	.44**	1					
6. Boredom at work	.09	-.18*	-.18*	-.23**	.36**	.43**	1				
7. Turnover intention	.10	-.13	-.17*	-.14	.41**	.55**	.59**	1			
8. Burnout	.13	-.13	-.14	-.13	.38**	.58**	.70**	.70**	1		
9.1 WP – in-role	.04	.23**	.07	.17*	-.19*	-.27**	-.27**	-.22**	-.34**	1	
9.2 WP – extra-role	-.08	.32**	.14	.30**	-.29**	-.32**	-.41**	-.33**	-.38**	.58**	1

Note. *N* = 151.

p* < .05. *p* < .01.

As shown in Table 2, the correlation analysis did not reveal any statistically significant relationships between gender and the other variables. Therefore, gender was not included in further analyses. As expected, both factors of red tape were positively associated with boredom at work ($r = .36, p < .001$; $r = .43, p < .001$), turnover intention ($r = .41, p < .001$; $r = .55, p < .001$), and burnout ($r = .38, p < .001$; $r = .58, p < .001$). Meanwhile, they were also negatively related to in-role ($r = -.19, p < .05$; $r = -.27, p < .01$) and extra-role work performance ($r = -.29, p < .001$; $r = -.32, p < .001$). Similarly, boredom at work was positively related to turnover intention ($r = .59, p < .001$) and burnout ($r = .70, p < .001$), and negatively related to in-role ($r = -.27, p < .01$) and extra-role work performance ($r = -.41, p < .001$). Turnover intention and burnout were highly correlated ($r = .70, p < .001$). Also, they were both significantly and negatively associated with in-role (turnover: $r = -.22, p < .01$; burnout: $r = -.34, p < .001$) and extra-role work performance (turnover: $r = -.33, p < .001$; burnout: $r = -.38, p < .001$).

Regression analysis

The hypotheses were examined individually for analyzing the model. First, a linear regression was conducted to test the effect of red tape on boredom at work. As hypothesized, both forms of red tape significantly predicted boredom at work (red tape – functionality: $\beta = .209; p < .05$; red tape – burden: $\beta = .341; p < .001$). While background variables such as gender and ages had no effect on it. This is also the case in the following analysis, so we excluded them from the results table presented later. Then, 4 linear regressions were conducted to test the relationships among red tape, boredom at work and 4 employee outcomes. Results were shown in the Table 3.2 – 3.5. In all models, the relationship between boredom and the outcome variable was significant (turnover: $\beta = .406; p < .001$; burnout: $\beta = .541; p < .001$; in-role: $\beta = -.178; p = .047$; extra-role: $\beta = -.310; p < .001$). However, when the outcome variables were turnover intention and burnout, the effect of red tape – functionality became not significant after boredom was added to the model. Moreover, when the outcome variables were in-role and extra-role performance, only the burden of red tape was significant and only before boredom was added to the model (in-role: $\beta = -.227; p = .011$; extra-role: $\beta = -.235; p = .007$).

Table 3.1*Results of a hierarchical regression analysis with boredom as the outcome variable*

	Model 1	Model 2
Gender	.081	.086
Ages	.076	.012
Edu_L	-.139	-.068
Work_L	-.249	-.168
Red tape 1		.202**
Red tape 2		.319**
R square	.073	.266
R square change		.193

* effect significant at $p < .05$ (two-tailed)** effect significant at $p < .01$ (two-tailed)**Table 3.2***Results of a hierarchical regression analysis with turnover intention as the outcome variable*

	Model 1	Model 2
Red tape 1	.215 **	.130
Red tape 2	.455 **	.316 **
Boredom		.406 **
R square	.339	.467
R square change		.128

* effect significant at $p < .05$ (two-tailed)** effect significant at $p < .01$ (two-tailed)

Table 3.3*Results of a hierarchical regression analysis with burnout as the outcome variable*

	Model 1	Model 2
Red tape 1	.160 *	.047
Red tape 2	.514 **	.330 **
Boredom		.541 **
R square	.362	.581
R square change		.227

* effect significant at $p < .05$ (two-tailed)** effect significant at $p < .01$ (two-tailed)**Table 3.4***Results of a hierarchical regression analysis with in-role work performance as the outcome variable*

	Model 1	Model 2
Red tape 1	-.089	-.052
Red tape 2	-.227*	-.166
Boredom		-.178*
R square	.077	.102
R square change		.025

* effect significant at $p < .05$ (two-tailed)** effect significant at $p < .01$ (two-tailed)

Table 3.5

Results of a hierarchical regression analysis with extra-role work performance as the outcome variable

	Model 1	Model 2
Red tape 1	-.184 *	-.120
Red tape 2	-.235 **	-.129
Boredom		-.310**
R square	.115	.185
R square change		.075

* effect significant at $p < .05$ (two-tailed)

** effect significant at $p < .01$ (two-tailed)

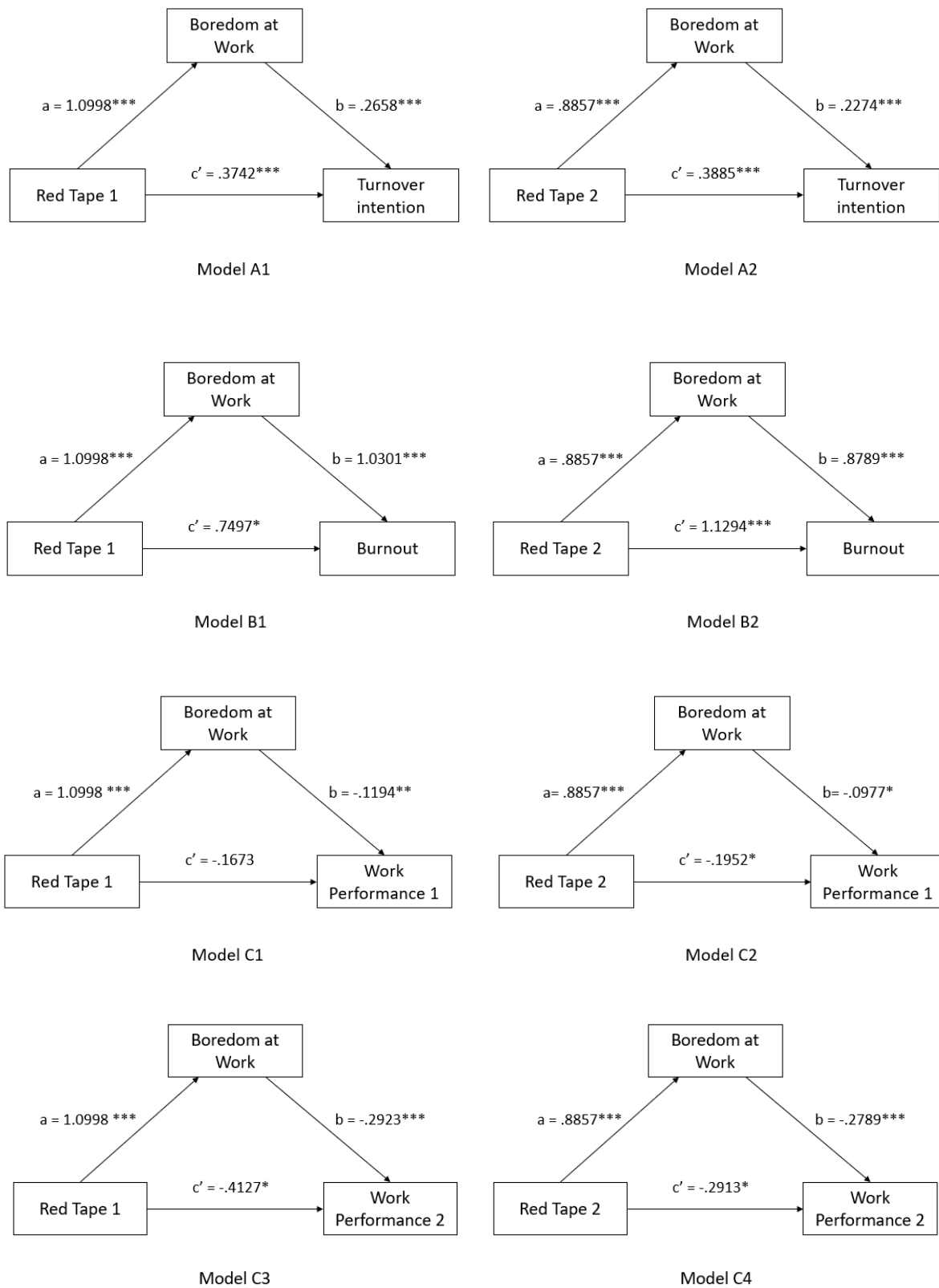
Mediation analysis

To test our model, regression analysis was conducted with Preacher and Hayes' (2008) bootstrap script, which specified a 95% confidence interval and 5000 bootstrap resamples. Participants' background variables had not significant effects in the model, so we leave them out of this analysis. Table 4 displays the bootstrap results of the mediation effect of boredom at work on the red tape and 4 outcome variables' relationships. As there are 2 dimensions involved in red tape and 2 dimensions in job performance, 8 models were built for separate analysis.

Even though it was not necessary to have a significant direct effect between the independent and dependent variable as a prerequisite for investigating the indirect effect (Zhao et al., 2010), the direct model (see Table 4) demonstrated that the relationships between the red tape and turnover intention, burnout, and in-role and extra-role work performance were all statistically significant, providing support for our hypotheses. For the mediation model (see Figure 2), out of the eight cases, one was a full mediation; one had no mediation; and the other cases were all partial mediation. The main effect of red tape is usually positive, as is the indirect effect, except when the outcome variables was in-role and extra-role performance, where both the main and indirect effects were negative. Table 4 presents a summary of the mediation analysis for the eight models.

Figure 2.

The indirect effect (with boredom at work as mediator).



Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4

Test of Mediation Effects of boredom at work on the relationships of 2 dimensions of red tape and 4 outcome variables: Bootstrap Results

Model/Relationship	Total	Direct	Indirect	Confidence Interval		Conclusion
	Effect	Effect	Effect	Lower Bound	Upper Bound	
RT1 → Boredom	.6665	.3742	.2923	.1697	.4226	Partial
→ Turnover	(< .001)	(< .001)				Mediation
RT2 → Boredom	.5899	.3885	.2014	.1166	.3015	Partial
→ Turnover	(< .001)	(< .001)				Mediation
RT1 → Boredom	1.8826	.7497	1.1329	.6443	1.6822	Partial
→ Burnout	(< .001)	(.0140)				Mediation
RT2 → Boredom	1.9079	1.1294	.7784	.4992	1.0823	Partial
→ Burnout	(< .001)	(< .001)				Mediation
RT1 → Boredom	-.2986	-.1673	-.1313	-.2570	-.0246	Full
→ WP – in-role	(.0207)	(.2136)				Mediation
RT2 → Boredom	-.2817	-.1952	-.0865	-.1935	.0038	No
→ WP – in-role	(.001)	(.0349)				Mediation
RT1 → Boredom	-.7342	-.4127	-.3215	-.5398	-.1391	Partial
→ WP – extra-role	(< .001)	(.0435)				Mediation
RT2 → Boredom	-.5384	-.2913	-.2471	-.4298	-.0904	Partial
→ WP – extra-role	(< .001)	(.0391)				Mediation

Discussion

While researchers have examined the relationships between red tape and employee outcomes such as turnover intention, burnout, and work performance (e.g., Kaufmann & Tummers, 2017; Quratulain & Khan, 2015; George et al., 2021), little attention has been paid to the underlying mechanisms of this association. Therefore, in the present study, we aimed to address this gap in the literature by demonstrating that boredom at work can act as a mediator of these relationships. Specifically, we hypothesized that (1) the prevalence of bureaucratic red tape within an organization has a positive correlation with, and even contributes to employees' boredom at work, which may (2) act as a mediator, (3) subsequently fostering higher turnover intentions, burnout, and diminished work performance. Our findings largely support these hypotheses.

First, we found that perceived red tape and work-related boredom were strongly correlated to each other. Employees who experienced greater red tape in the organization were more likely to show higher boredom at work. This result is in line with previous studies. For example, Harju and colleagues (2022) found a positive relationship between red tape and job boredom. In the school and higher education sectors, the impact of red tape has also been found to have a negative impact on boredom among education professionals (Churcher & Talbot, 2020).

Second, we distinguished between two forms of red tape, functionality and burden. Both factors were positively associated with turnover intention, burnout and negatively related to in-role and extra-role work performance. Moreover, higher levels of perceived red tape and work-related boredom predicted employees' increased levels of turnover intention, burnout and decreased levels of in-role and extra-role work performance. These findings replicated previous work showing that perceived red tape in the organization increases employees' turnover intentions (e.g., Giauque et al., 2019; Brunetto et al., 2017), positively predicts burnout (e.g., Harju, Van Hootehem, & De Witte, 2022), and has a negative impact on workers' performance (e.g., George et al., 2021). Similarly, boredom in the workplace has also been shown to drive employees to behave in a negative way, such as high turnover intention (e.g., Teng et al., 2020), burnout (e.g., Sousa & Neves, 2021), and poor work performance (e.g., Watt & Hargis, 2010).

Lastly, work-related boredom was found to partially mediate the effects of both forms of red tape on employee outcomes, with the exception of in-role performance. Our results demonstrated that work-related boredom fully mediated the effect of red tape – functionality on in-role work performance, whereas there is no mediation of boredom existing within the relationship between red tape – burden and in-role work performance. In other words, these findings indicate that the detrimental effects of red tape can to a substantial degree be attributed to the resulting work-induced boredom, highlighting work-related boredom as an important potential mechanism in explaining why employees experiencing red tape are more prone to reporting high levels of turnover intention, burnout, and poor work performance. This result significantly contributes to the existing literature on red tape because the mechanisms underlying its negative consequences have been insufficiently explored and limited in previous studies: except for Quratulain and Khan (2015) who found job dissatisfaction with as a mediating factor through a single survey study and Jiang et al. (2023) who proposed work engagement as a mediator based on three-wave data, no other researchers

have found (Giauque et al., 2019) or explicitly investigated (Brunetto et al., 2017; Shim et al., 2017) a mediating mechanism.

Limitations and future research

Despite these contributions, it is also important to acknowledge the limitations of the present study. First, all the study variables were assessed through self-reported measures. Although we have taken precautions by ensuring the confidentiality and anonymity of participants' responses and by using previously validated scales, common method variance and social desirability may still affect the accuracy of our results. In particular, for job performance where the results of data analysis were not as significant, we found that participants generally rated higher than the median score of the scale. Follow-up studies could add third-party ratings such as leader evaluations or colleague evaluations, as a more objective source of data to measure participants' job performance for addressing the issue of homologous deviation.

Second, as the participants were all Chinese, we translated the questionnaire into Mandarin. After the translation was completed, we asked five Chinese people living in the Netherlands to check and review the questionnaire to ensure the accuracy and the readability of the translated text. However, we still could not guarantee that the translated scales had the same reliability and validity as the original ones. Due to subtle differences in written expressions and potential variations in usage across different regions and cultures, readers' comprehension and interpretation may be influenced. Therefore, future experiments are suggested to use either the native scales or the translated scales that have been experimentally validated.

Third, the current experiment used a single respondent to measure red tape, work boredom, and employee outcomes. This may lead to a common source bias. In addition, because common source bias typically produces upward bias in the correlations, the effects of red tape and work boredom may not in fact be as strong as commonly claimed. This problem exists not just for this study, but for most current studies of red tape (cf. Blom et al., 2021). Therefore, future research needs to utilize a multi-source design in order to accurately assess their actual impact on the results.

Forth, the scope of data for the study was limited by the fact that participants were recruited mainly through the publicity of acquaintances and friends. For example, all subjects had more than 16 years of formal education (which in China is equivalent to all having a bachelor's degree or higher). This suggests that our findings may not be broadly generalized to the entire Chinese population. This issue is also prevalent in other studies, where most

participants appear to be from western, educated, industrialized, rich, and democratic backgrounds (Henrich et al., 2010). Therefore, more research on developing countries and other demographic groups should be encouraged.

Lastly, as a cross-sectional design was employed in this study, it is important to note that causal inferences cannot be drawn, and therefore, further longitudinal research is warranted to validate and establish the causality of these findings.

Implications

Our study offers the following noteworthy contributions. First, we investigated the relationship between red tape and multiple employee work outcomes by identifying work-related boredom as a general mediating mechanism, differing from previous studies that only focused on the effect of a simple factor on one type of relationship (e.g., Quratulain & Khan, 2015; Jiang et al., 2023). In the present study, we found a mediating effect of boredom at work on three different employee outcomes, suggesting that it could act as a general mediator of the broader relationship between red tape and its effects. Therefore, we encourage scholars to pay more attention in their research to the effect of this variable on other employee outcomes or to consider more the effect on multiple relationships when investigating other mediating variables.

Second, in verifying the impact of red tape on employee outcomes, we divided red tape into two dimensions through its concepts and the results of factor analysis. This enriches previous studies by providing a more comprehensive understanding of the operations in the relationship. For example, the consensus among people and scholars is that red tape has negative consequences (George et al., 2021), but which specific dimension plays a greater role in these relationships is understudied. Now, precisely because of this subdivision, we are able to infer from the results that the impact of bureaucratic functionality seems to be relatively minor. In other words, regardless of whether red tape is considered effective or useful (i.e., whether they serve a functional purpose), as long as they impose a burden on employees, they will have a negative impact on them. However, this conclusion appears to contradict previous viewpoints. Some scholars have considered effective organizational rules beneficial to employees when discussing the role of bureaucratic formalities (e.g., Bell & Khoury, 2011, 2016). They have even coined a term, "green tape" (DeHart-Davis, 2015), to contrast and compare with "red tape" as a way to denote effective bureaucratic rules. It may be true that effective red tape indeed has a positive impact on both employees and the organization, such as providing procedural justice (DeHart-Davis, 2017). But this only exists if the rules do not burden employees. Our results therefore provide an alternative perspective

to this idea, suggesting that the positive effects of “green tape” on employees may be influenced by another dimension of red tape, namely the burden it imposes. Furthermore, we divided job performance into in-role and extra-role performance to obtain more detailed and accurate conclusions.

Third, our research enriches the literature on red tape by providing the data and results from Asian countries. In a broader context where most research participants are concentrated in Western countries, our research not only bridges the gap in the current literature but also lays a solid foundation for future endeavors in cross-cultural or cross-regional investigations within the field of organizational studies by providing data and theoretical support.

In summary, the present study shows that red tape has adverse effects on a range of outcomes such as turnover intention, burnout, and in-role and extra-role work performance, which are mediated by boredom at work. These effects hold up for burden-related red tape, regardless of whether it is functional or not. Therefore, organizations are well advised to reduce red tape as much as possible. By doing so, they can mitigate the negative impact of red tape induced boredom, creating a more positive and productive work environment that benefits both employees and the overall organizational performance.

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Appendix A: Participant information sheet

You are being invited to take part in a master's research project at Utrecht University. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

1. WHAT IS THE PURPOSE OF THE STUDY?

It is to investigate the relationship between red tape and employee outcomes.

2. AM I ELIGIBLE TO TAKE PART?

To take part you should be 18 to 60 years of age and already working.

3. DO I HAVE TO TAKE PART?

It is up to you to decide whether or not to take part. If you do decide to take part you will be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time during the experiment (by closing the web browser), or up to two weeks later, without giving a reason. Choosing to either take part or not take part in the study is entirely voluntary.

4. WHAT WILL HAPPEN TO ME IF I TAKE PART?

If you choose to take part, you will be asked to complete six online questionnaires concerning demographic information (e.g., age and gender), red tape, boredom at work, turnover intention, burnout, and work performance. The whole research study can be conducted online and will take approximately 10 minutes. At the end of the study, you will be debriefed.

5. WHAT ARE THE POSSIBLE DISADVANTAGES AND RISKS OF TAKING PART?

We do not expect you to experience any discomfort or risk. We will not ask you to do anything you are not comfortable with or that you feel may be risky. However, if you feel distressed or not comfortable at any time during the study, you should immediately bring this to the attention of the researcher and ask to interrupt the study at once. Please let the researcher know if you want a family member or a friend to be called before you leave the study.

6. WILL MY INFORMATION IN THIS STUDY BE KEPT CONFIDENTIAL?

All information collected will be kept strictly confidential. Confidentiality, privacy and anonymity will be ensured in the collection, storage and publication of research material through coding the data anonymously.

7. WHAT WILL HAPPEN TO THE RESULTS OF THE RESEARCH PROJECT?

We plan to use the data to complete our thesis program. The data collected may also be used for presentation and academic publications. The data will be deleted at the end of our project (unless they have been published). We expect the project will end within 4 months from the data collection.

8. WHO HAS APPROVED THIS STUDY?

The study has been approved by the Faculty Ethics Review Board (FERB) at Utrecht University.

9. CONTACT FOR FURTHER INFORMATION

If you would like to find out more about this study, please contact Maliya Luo (Email: m.luo@students.uu.nl).

Thank you for reading this information sheet and for considering taking part in this research study.

Yes, I would like to take part in this study and am ready to sign the participant consent form.

No, I DO NOT want to take part in this experiment.

Appendix B: informed consent form

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

I confirm that I understand that by ticking/initialling each box below I am consenting to this element of the study. I understand that by not giving consent for any one element that I may be deemed ineligible for the study.

1. I confirm that I have read and understood the Information Sheet for the above study. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction and would like to take part in this survey.

2. I understand that I will be able to withdraw my data up to 4 weeks after having participated in this survey.

3. I consent to participate in the study. I understand that my personal information will be used for the purposes explained to me. I understand that according to data protection legislation, 'public task' will be the lawful basis for processing.

4. I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified unless you state otherwise, because of the research design or except as required by law.

5. I understand that my data gathered in this study will be stored anonymously and securely. It will not be possible to identify me in any publications.

6. I understand that my information may be subject to review by responsible individuals from the University for monitoring and audit purposes.

7. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason and ask that my data will be deleted.

8. I am aware of who I should contact if I wish to lodge a complaint.

9. I voluntarily agree to take part in this study.

10. I understand the use of information for this project and beyond I would be happy for the data I provide to be archived in the password protected laptop of the researcher until the project is finished. I understand that other authenticated researchers will have access to my anonymised and pseudonymised data for the purpose of this project or audit.

I confirm that I have read the above statements and consent to this study.

Appendix C: questionnaire

Background variables

What is your gender?	Male Female Non-binary Other/do not want to say
What is your age (in years)?	... years
How many years of formal education have you attended?	... years
How many years have you been employed by your current employer?	... years

1. Red tape

Job-Centred Red Tape Measurement Scale

The rules with which I have to comply in my core activities/personnel activities/procurement, finance and control activities:
Lack of functionality
0 have a clear function for my job activities (reversed)
2 contribute to the goal of my job activities (reversed)
4 help me do my job well (reversed)
7 serve a useful goal (reversed)
Compliance burden
1 cause much pressure at work
3 are easy to comply with (reversed)
5 take a lot of time to comply with
6 cause much delay
8 cause a lot of frustration

Likert-type scale ranging from 1 = “totally disagree” to 5 = “totally agree.”

2. Boredom at work

Dutch Utrecht Boredom Scale (DUBS)

The following 8 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the "0" (zero) in the space before the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 0 to 6) that best describes how frequently you feel that way.

0 – Never, 1 – Almost never, 2 – Rarely, 3 – Sometimes, 4 – Often, 5 – Very often, 6 – Always

1. _____ At work, time goes by very slowly.
2. _____ I feel bored at my job.
3. _____ At work, I spend my time aimlessly.
4. _____ At my job, I feel restless.
5. _____ During work time I daydream.
6. _____ It seems as if my working day never ends.
7. _____ I tend to do other things during my work.
8. _____ At my work, there is not so much to do.

3. Turnover intention

Roodt's Turnover Intention Scale (TIS-6)

TURNOVER INTENTION SCALE (TIS)

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The following section aims to ascertain the extent to which you intend to stay at the organisation.

Please read each question and indicate your response using the scale provided for each question:

DURING THE PAST 9 MONTHS.....

1	How often have you considered leaving your job?	Never	1-2-3-4-5	Always
2R	To what extent is your current job satisfying your personal needs?	To no extent	1-2-3-4-5	To a very large extent

3	How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals?	Never	1-2-3-4-5	Always
4	How often do you dream about getting another job that will better suit your personal needs?	Never	1-2-3-4-5	Always
5	How likely are you to accept another job at the same compensation level should it be offered to you?	Highly unlikely	1-2-3-4-5	Highly likely
6	How often do you look forward to another day at work?	Never	1-2-3-4-5	Always

4. Burnout

Work-related version of the BAT

Instruction

The following statements are related to your work situation and how you experience this situation. Please state how often each statement applies to you.

Scoring

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

Exhaustion

1. At work, I feel mentally exhausted*
2. Everything I do at work requires a great deal of effort
3. After a day at work, I find it hard to recover my energy*
4. At work, I feel physically exhausted*

5. When I get up in the morning, I lack the energy to start a new day at work
6. I want to be active at work, but somehow I am unable to manage
7. When I exert myself at work, I quickly get tired
8. At the end of my working day, I feel mentally exhausted and drained

Mental distance

9. I struggle to find any enthusiasm for my work*
10. At work, I do not think much about what I am doing and I function on autopilot*
11. I feel a strong aversion towards my job
12. I feel indifferent about my job
13. I'm cynical about what my work means to others*

Cognitive impairment

14. At work, I have trouble staying focused*
15. At work I struggle to think clearly
16. I'm forgetful and distracted at work
17. When I'm working, I have trouble concentrating*
18. I make mistakes in my work because I have my mind on other things*

5. Work performance

Individual Work Performance Questionnaire (IWPQ)

The Individual Work Performance Questionnaire ([Koopmans, 2015](#)) is an 18-item scale developed in The Netherlands to measure the three main dimensions of job performance: task performance, contextual performance, and counterproductive work behaviour. All items have a recall period of three months and a 5-point rating scale (0 = seldom to 4 = always for task and contextual performance; and 0 = never to 4 = often for counterproductive work behaviour).

In-role performance

1. I managed to plan my work so that I finished it on time
2. I kept in mind the work result I needed to achieve
3. I was able to set priorities
4. I was able to carry out my work efficiently
5. I managed my time well

Extra-role performance

6. On my own initiative, I started new task when my old tasks were completed
7. I took on challenging tasks when they were available
8. I worked on keeping my job-related knowledge up-to-date
9. I worked on keeping my work skills up-to-date
10. I came up with creative solutions for new problems
11. I took on extra responsibilities
12. I continually sought new challenges in my work
13. I actively participated in meetings and/or consultations