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Bullying and harassment as a consequence of workplace change in the Australian civil service: investigating the mediating role of satisfaction with change management

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Abstract: Public sector organizations frequently restructure due to shifting management trends, crises, and political developments. Earlier research indicates that the sometimes-drastic reforms implemented in government strongly affect employees, causing psychosocial effects such as frustration, stress, and negative work environments. This may in turn increase the likelihood of severe phenomena such as workplace bullying and harassment. It remains unclear, however, how public organizations can introduce changes while preventing side-effects such as bullying and harassment. The goal of this article is twofold. First, we test whether evidence on the relationship between workplace change and bullying and harassment holds when using a large, public sector-wide sample. Second, we investigate whether satisfaction with change management plays a mediating role. Using cross-sectional and strata-based panel data analyses on Australian data, results indicate a positive relationship between workplace change and workplace bullying and harassment, but also suggest that satisfaction with change management mitigates this effect.

1. Introduction

Recent years have seen public organizations implementing workplace change at breakneck speeds, e.g. combining downsizing efforts following the financial crisis with pressures towards digitalization, defragmentation, and new forms of cooperation with other public or private organizations (Pollitt & Bouckaert, 2017). We know from earlier studies that intrusive workplace changes – in particular when these changes are not supported by employees – may foster various problematic psychosocial effects, ranging from uncertainty to frustration and cynicism (Oreg et al., 2011; Qian & Daniels, 2008). When such adverse psychosocial effects are generated, it is possible that the organization's work environment will increasingly facilitate negative interpersonal interactions.

There is a growing level of support that workplace change may even stimulate bullying and harassment, as frustrations mount and the uncertainty brought about by change provides opportunities for multiple forms of harassment (Hutchinson et al., 2005; Skogstad et al., 2007; Baillien et al., 2019). Opportunities for various forms of bullying and harassment increase during change transitions, with some individuals using otherwise legitimate restructuring processes as a means of harming their targets (Hutchinson et al., 2005; D'Cruz et al., 2014). Also, individuals may vent change-related frustrations and stress on colleagues, subordinates or superiors (Salin, 2003; Baillien & De Witte, 2009; Skogstad et al., 2007; Baillien et al., 2019). In some cases, these antagonistic behaviors may repeatedly be perpetrated against a target, causing the behavior to develop into long-term workplace bullying and harassment (e.g. Skogstad et al., 2007; D'Cruz, 2014; Baillien et al., 2019; Nielsen et al., 2020).

Despite the increasing evidence supporting the existence of a link between workplace change and workplace bullying and harassment (Hutchinson et al., 2005; Skogstad et al., 2007; D'Cruz et al., 2014; Baillien et al., 2019), hardly any research has been devoted to how transitioning organizations could influence the level of bullying and harassment behavior through (change) management. A notable exception is Holten et al. (2017), who investigate whether leadership quality could moderate the change-bullying relationship, although their findings do not provide support for such a moderating role (they instead find that leadership quality has a direct effect on bullying). Such a lack of research is surprising when considering that workplace bullying and harassment is both a widespread and a substantially harmful phenomenon in public sector workplaces (Hutchinson et al., 2005; D'Cruz et al., 2014; Venetoklis & Kettunen, 2016). For instance, in the Australian federal civil service, survey results consistently place the overall percentage of employees experiencing workplace bullying

and harassment behavior between 13 and 16 percent (Australian Public Service Commission (APSC), 2019), while some regional governments even observe rates exceeding 20 percent (Office of the Commissioner for Public Employment, 2017). Workplace bullying and harassment is also substantially damaging to both its victims and the organization, as bullying and harassment has *inter alia* been linked to heightened anxiety, depression, sick leave, turnover and even symptoms akin to posttraumatic stress syndrome (e.g. Einarsen & Nielsen, 2015; Nielsen et al., 2015; Venetoklis & Kettunen, 2016). Therefore, investigating the veracity of claims that workplace bullying and harassment is stimulated by organizational factors such as workplace change (Hutchinson et al., 2005; Hutchinson et al., 2010), as well as the potential role of change management in mitigating this relationship (D'Cruz et al., 2014), are important topics of inquiry.

The aim of this article is twofold. First, we contribute evidence of a positive relationship between workplace change and workplace bullying and harassment by using particularly attractive data sources for these purposes, namely two samples of over 75.000 federal civil servants from the 2013 and 2014 versions of the Australian public sector (APS) employee census. In doing so, we complement current change-related workplace bullying and harassment contributions, which have mostly focused on single organizations or smaller sized panels (Nielsen et al., 2020). Second, APS data is suitable to investigate the degree to which effects of workplace change on workplace bullying and harassment can be mitigated through employee satisfaction with change management. We examine whether an interaction effect exists between the occurrence of workplace change and satisfaction with the organization's change management. Change management has been found to mitigate the impact of change on other psychosocial variables, such as change-related anxiety and perceptions of injustice (Paterson & Cary, 2002; Oreg et al., 2017; Qian & Daniels. 2007; D'Cruz et al., 2014). Yet no studies have examined whether satisfaction with change management may mitigate the positive association between workplace change and workplace bullying and harassment.

Utilizing survey data from the 2013 and 2014 versions of the employee census, we first estimate several cross-sectional regression models. We then use a strata-based approach that allows us to estimate a first-difference model capable of providing greater certainty on the found relationships' causality. Results from all models provide support that workplace change increases levels of workplace bullying and harassment, but also suggest that positively perceived change management mediates this relationship.

2. Theoretical framework

2.1. Conceptualizing bullying and harassment in the workplace

Workplace bullying and harassment is multifaceted in nature, with different causes and effects on multiple levels (Hoel et al., 2003; Caillier, 2020). Fundamentally, workplace bullying and harassment concerns the “mistreatment of a subordinate, a colleague or even a superior, which, if occurring over the long-term, may cause severe social, psychological, and psychosomatic problems in the target” (Einarsen et al., 2011, p. 4). Bullying and harassment includes behaviors such as verbal abuse, the exclusion of a colleague from decisions, advancement opportunities, or prestigious tasks, repeated gossiping and defamation, undue threats or accusations, and various other negative behaviors (Hutchinson et al., 2005; Nielsen et al., 2020).

It is useful to outline the nuances that separate the term bullying from the term harassment, two substantially overlapping but distinct constructs (e.g. Branch, 2008). Bullying is distinguished from other negative workplace behaviors by several features designating severity (Nielsen et al., 2020). Behaviors falling under the heading of bullying are normally repeated and based on power imbalance, with negative behavior being directed towards another, socially less powerful employee for prolonged periods of time (Einarsen et al., 2011; Nielsen et al., 2020; Caillier, 2020; Hodgins, 2020). At the same time, this social power imbalance does not necessarily imply a hierarchical supervisor-subordinate relationship, with bullying & harassment acts also being perpetrated among direct colleagues or even by subordinates against supervisors (Caillier, 2020). Moreover, bullying is often conceived of as an escalating process through which individuals become increasingly stigmatized and isolated, increasing the social power imbalance between perpetrator(s) and victim(s) (Nielsen et al., 2020).

Harassment has both been used as synonymous to bullying (Branch, 2008) and as a term with a slightly different meaning, with latter approaches sometimes including isolated albeit severe incidents under their scope (Einarsen et al., 2020). We follow the broader approach and argue that although harassment will frequently be repeated in nature (creating substantial conceptual overlap with bullying), cases of severe single occurrences will likely also constitute harassment in the eyes of victims. We argue that such an approach is likely closer to what employees themselves would consider to constitute harassment, especially in cases when the behavior confronting the employee is experienced as extremely negative – as would be the case for examples such as overt threats or severe verbal abuse. By incorporating both bullying and

harassment we measure two sides of the same coin, integrating both prolonged negative behavior and single occurrences of strongly negative behavior (Einarsen et al., 2020).

2.2. The costs of workplace bullying and harassment

Before considering the relationships between workplace change, satisfaction with change management, and bullying and harassment, it is useful to briefly elaborate on the effects that bullying may have on victims and their environment. Workplace bullying and harassment are impactful social stressors, resulting in decreased mental and physical health, productivity, heightened turnover, and increased sick leave and absenteeism (Tracy et al., 2006). On the individual level, bullying and harassment may produce a variety of physical, psychological, and social costs for affected employees (Tracy et al., 2006). Victims of bullying and harassment generally report lowered well-being and lowered job satisfaction, as well as various stress symptoms, including lowered self-esteem, sleep problems, anxiety, concentration difficulties, chronic fatigue, anger, depression, and various somatic problems (Nguyen et al., 2017; Nguyen et al., 2019; Hoel et al., 2003). Some bullying and harassment victims even portray symptoms indicating post-traumatic stress disorder (Mikkelsen & Einarsen, 2002). Finally, in addition to the negative effects bullying and harassment can have for victims, bullying and harassment can also negatively affect colleagues and their work environment (Hoel et al., 2003). Both victims and observers report a more negative workplace environment than individuals who were neither bullied nor a witness of bullying behavior (Einarsen et al., 2011:227).

2.3. Linking workplace change with bullying and harassment

Previous research has suggested three theoretical routes through which workplace change may generate workplace bullying and harassment. Although it must be emphasized that these three perspectives remain theoretical in this article (as our empirical focus lies on the interplay between change and satisfaction with change management on the one hand and workplace bullying and harassment on the other), it is useful to briefly discuss these perspectives to elucidate why workplace change may generate bullying and harassment behavior.

The first theoretical mechanism linking organizational change with bullying and harassment focuses primarily on deliberate behavior in the supervisor-subordinate relationship

(Hutchinson et al., 2005). This mechanism suggests that organizational change can act as a smokescreen for deliberate abuses of power within the organization (Hutchinson et al., 2010) as supervisors co-opt otherwise legitimate organizational processes to engage in negative behaviors (Hutchinson et al., 2005; D'Cruz et al., 2014). For instance, when job roles become obsolete and employees are reshuffled, opportunities arise for supervisors to threaten subordinates with transfers or redundancy (Hutchinson et al., 2005). Moreover, where public organizations are required to reduce personnel count while being barred from directly laying off employees, this may provide incentive to pressure certain employees through bullying or harassment (Venetoklis & Kettunen, 2016). Change-related decision-making also provides an opportunity to intentionally exclude targeted individuals. Meetings on the change process may be held behind targeted individuals' backs or meetings may be set up so as to outnumber an opponent (Hutchinson et al., 2005). Such abuses of power during times of transition gradually result in victims becoming increasingly isolated, leaving them more vulnerable to future abuses. Thus, it seems that change-related processes can become a vessel for bullying and harassment (Hutchinson et al., 2005; Venetoklis & Kettunen, 2016), although it must be mentioned that empirical support in the literature largely remains limited to Hutchinson et al. (2005)'s work. At the same time, it must be mentioned that D'Cruz et al., 2014 do identify misuse of formal power during change as a form of workplace bullying.

The second perspective argues that stress and anxiety generated through workplace change may result in heightened levels of frustration (Salin, 2003; Skogstad et al., 2007). When frustrated and stressed, some individuals may 'lash out' against others, exhibiting increased levels of aggression that may in turn generate bullying and harassment behavior (Skogstad et al., 2007). Workplace change is a well-known source of uncertainty due to its association with heightened perceptions of job insecurity. Even in cases where no jobs are lost, employees may *worry* certain functions will eventually become obsolete. A sense of loss might emerge related to valued old tasks or traditions being deemed redundant (Bordia et al., 2004). The resultant uncertainty and anxiety are combined with stress stemming from heightened levels of workload and job demands during the transition period, as employees are asked to learn new skills, adapt to new work circumstances, and roll out new procedures, while still maintaining the continuity of the organization's services. This route has received greater attention in literature than the first mechanism. Baillien and De Witte (2009) and Salin (2003) find a significant relationship between organizational change and bullying, facilitated by role conflict and job insecurity that trigger anxiety, uncertainty, and stress among employees. Ultimately, these mechanisms

lowered the thresholds for aggression and hostility and increasing the potential benefits of eliminating possible threats and burdens. De Vries and Balazs (1997) similarly find that layoffs can trigger aggression among employees, for whom violence becomes the outlet of their aggression, which may eventually result in harassment, sabotage, or – if prolonged – bullying (De Vries & Balazs, 1997; Salin, 2003; Skogstad, et al., 2007).

A third and final mechanism linking workplace change with bullying and harassment operates through perceptions of injustice and psychological contract violation (Morrison & Robinson, 1997; Baillien et al., 2019). The psychological contract denotes an employee's set of beliefs regarding the implicit reciprocal obligations between the employee and his/her employer (Robinson & Morrison, 2000; see also Nguyen et al., 2019). These may include obligations regarding instrumental factors such as remuneration, workload, or career advancement, but may also include softer aspects such as the way in which an organization should position itself, or the way in which tasks should be executed (Kickul et al., 2002). When an employee believes that the organization severely failed in fulfilling one or more of the obligations of the psychological contract, feelings of injustice, anger, cynicism, regret and betrayal are generated (Morrison & Robinson, 1997; Robinson & Morrison, 2000; Kickul et al., 2002; Mussagulova et al., 2021). Violation of the psychological contract is likely to occur when workplace change is implemented, as various allocation decisions, procedural choices and interactions may be perceived as unfair (D'Cruz, et al., 2014). This impacts morale, self-esteem, organizational commitment, trust, job security, and productivity and leads to increased psychological disturbances (Baillien et al., 2019). Major psychological contract violation is likely to result in substantial perceived injustice and results in a variety of negative emotions such as anger, resentment, and frustration (Baillien et al., 2019). As with the second mechanism, which operated through stress- and anxiety, this third injustice-based mechanism may result in an increased probability of individuals lashing out against colleagues as a way to vent these negative emotions. Eventually, this causes structural behavior that falls under the scope of bullying and harassment (Baillien et al., 2019).

In sum, when change-related opportunities for bullying and harassment (as described by the first mechanism) and/or change-related stressors (as described by the second and third mechanisms) remain present in long transitional periods, change may generate negative work environments. Such increasingly negative work environments in turn cause negative behavior to increase in frequency and/or become more severe. Furthermore, the process is likely directed at targets with relatively low social status, over which the perpetrator has some perceived level

of control (D'Cruz et al., 2014; Hutchinson et al., 2005). These factors are then likely to combine in a process where the perpetrator continues to exploit opportunities and/or increasingly relieves negative emotions on the scapegoat (Baillien et al., 2019), while the scapegoat loses status within the organization and becomes more vulnerable to the behavior (Skogstad et al., 2007). This may result in behavior becoming so pronounced that it culminates into negative occurrences severe enough to be considered harassment. Simultaneously, negative behaviors may be exhibited over prolonged periods of time, with the behaviors ultimately falling within the scope of workplace bullying. Thus, although the intermediate mechanisms will remain theoretical in this study, we do measure the overarching change-bullying and harassment relationship by testing the following hypothesis:

Hypothesis 1: Workplace change is positively associated with the occurrence of workplace bullying and harassment behavior.

2.4. Satisfaction with change management as a mediator

In addition to whether changes occur, it is also important to focus on *how* such change is managed within the organization, with the latter comprising what is frequently dubbed change management (Van der Voet & Vermeeren, 2016). The occurrence of workplace change may by itself cause psychosocial effects (e.g. through pressures produced by events such as downsizings), but whether employees are subsequently satisfied with the way such change is managed by the organization could mitigate or reinforce these effects. To our knowledge, no studies have considered whether high levels of satisfaction with change management may be able to mediate the impact of workplace change on bullying and harassment behavior. Nevertheless, there are indirect indications that change management could have a mediating effect. Change management scholars observe that change causes detrimental effects through stress, anxiety, and perceptions of injustice (Paterson & Cary, 2002; D'Cruz et al., 2014). Common change management programs therefore intend to take away such stress and anxiety by adequately informing change recipients about the consequences of a change effort (Qian & Daniels, 2007; De Vries & Balasz, 1997), while promoting perceptions of justice by increasing participation and ensuring fair outcomes of allocation decision made during the changes (Korsgaard et al., 1995; Paterson & Cary, 2002; Brotherington, 2003).

Empirical investigations have tended to confirm these notions. Findings show that well-developed change management programs – aimed at providing high quality communication,

increasing participation, maintaining well-being, and ensuring procedural and distributive justice – have the potential to reduce anxiety and stress, increase change acceptance, and reduce levels of turnover and change cynicism (Paterson & Cary, 2002; Brotherington, 2003; Qian & Daniels, 2007; Michel et al., 2010). Bullying and harassment in the workplace is generated through many of the same mechanisms, including post-change increases in anxiety, stress, and frustration borne from perceptions of injustice (Salin, 2003; Baillien et al., 2009; Baillien et al., 2019). Accordingly, change management programs may have similar beneficial effects on bullying and harassment behavior. Thus, change management could prevent increases in bullying and harassment by reducing the effects of the various psychosocial and contextual mechanisms that enable or foster bullying and harassment.

Simultaneously, it must be noted that the success of change management programs is dependent on the ability of the organization to implement them, as well as employees' perceptions of such programs (e.g. Bordia et al., 2011). It has been observed that change management programs may reduce support and even fuel frustration with change if employees perceive them to be disingenuous (Korsgaard et al., 1995; Brotherington, 2003; Bordia et al., 2011). Moreover, a lack of commitment of management towards a change management program may reduce its efficacy, with Graetz (2000) finding that lacking senior management commitment to a communication strategy reduced middle management change acceptance. These contributions suggest that, in order for change management programs to have their intended effect, more is needed than a program's formal design; the change management program also has to be perceived positively by the organization's employees (Korsgaard et al., 1995; Walston & Chadwick, 2003).

In this study, we therefore incorporate employee satisfaction with the organization's change management as a predictor of bullying and harassment. Such a variable provides a general perception of the outcomes of an organization's past change management efforts (Bordia et al., 2011), whether or not the respondent has experienced a change in the last year. Moreover, it provides a proxy not only of the organization's usage of change management initiatives, but also the degree to which it has been successful in doing so according to a respondent (e.g. Korsgaard et al., 1995). We expect that satisfaction with change management is capable of mediating the otherwise positive effect of workplace change on bullying and harassment.

Hypothesis 2: Satisfaction with change management mediates the relationship between workplace change and workplace bullying and harassment, mitigating the

effect of workplace change on workplace bullying and harassment if satisfaction with change management is high.

3. Data and methodology

Our analyses are based on the Australian Public Service (APS) employee census, in particular the 2013 and 2014 versions. While more recent versions of the APS survey are available, these do not include various demographic variables, making the 2013 and 2014 versions particularly useful for our purposes. The census measures employees' perceptions of issues such as employee engagement, leadership, health and wellbeing, and job satisfaction, as well as general impressions of the APS. The census was administered to all available APS employees (recorded in the APS Employment Database (APSED)). The 2013 version targeted a population of 158,358 civil servants of which 102,219 responded (66% response rate). These data, offered by the APSC, have been found to be representative for the overall population of APS employees (APSC, 2013). However, item non-response decreased our sample from 102,219 to 87,126 employees. In order to make sure this did not introduce a bias, we compared this reduced sample to the initial, representative one, with no significant differences being observed. The response rate of the 2014 version was slightly higher than the 2013 version (68%-99,392 out of 151,792 APS employees). Again, item-non response decreased the sample to 77,983 observations. As with the previous version of the survey, the sample remained representative.

These large sample sizes are a particularly attractive feature of the APS employee census. Small sample sizes regularly pose a problem for bullying and harassment research, as such negative behaviors – while occurring in many workplaces – are still behaviors typically affecting a relatively small minority of respondents, limiting the amount of bullied individuals in most samples and thus hindering reliable estimation (Nielsen et al., 2020). It is also noteworthy that the APS provides a particularly compelling setting to investigate due to its combination of high rates of workplace change (e.g. 74 percent of respondents indicates that they have experienced major workplace change in the 2014 employee census) and the APS's consistent interest in measuring the safety of workplaces (APSC, 2014 p.89 and p.238). This, combined with the large sample sizes of APS employee census data, has resulted in rich data on workplace change, satisfaction with change management, and bullying and harassment

across several survey waves, improving our ability to investigate the relationship between workplace change and bullying and harassment.

3.1 Measuring Bullying and harassment

The perceived occurrence of bullying and harassment is measured using the following question: “During the last 12 months, have you been subjected to harassment or bullying in your workplace?” The respondent could answer, yes, not sure, or no. We recoded this variable to a dummy (yes=1 and not sure/no=0), with both the ‘not sure’ and the ‘no’ response category being set to zero to ensure that only serious behaviors falling under the scope of bullying and/or harassment were coded as 1. Before answering this question, respondents were offered the following definitions:

“Harassment: For the purpose of this survey, workplace harassment entails offensive, belittling or threatening behaviour directed at an individual or group of APS employees. The behaviour is unwelcome, unsolicited, usually unreciprocated and usually (but not always) repeated.”

Bullying: While there is no standard definition of workplace bullying, it is generally used to describe repeated workplace behaviour that could reasonably be considered to be humiliating, intimidating, threatening or demeaning to an individual or group of individuals. It can be overt or covert.”

Such a self-labelling method is one of the most frequently used ways to measure workplace bullying and harassment, although directly tapping perceptions of being bullied and/or harassed may admittedly be influenced by the subjective interpretations of respondents of what constitutes bullying and harassment (Nielsen et al., 2020; Galanaki & Papalexandris, 2013). The inclusion of conceptual definitions (as was done here) is therefore considered essential when using the self-labelling approach to measure bullying and harassment instead of a more behavior-oriented variant. Definitions increase a self-labelling item’s construct validity by reducing the potential influence of subjective interpretations of the measured concepts (Nielsen et al., 2020). It is notable that self-labelling approaches with added definitions have been found to have good consistency with behavior-oriented measurements, supporting their construct validity (Nielsen et al., 2009).

3.2 Measuring change and satisfaction with change management

To measure if the respondent experienced a change event in the previous year, they were asked the following question: “In the last 12 months, has your immediate work group been directly affected by any major workplace change (e.g. functional, geographical, staffing changes)?” Civil servants could answer with yes or no. Regarding the variable satisfaction with change management, the respondent could rate his/her level of agreement with the following statement “Change is managed well in my agency” (5 point Likert scale ranging from strongly agree to strongly disagree). This item conforms well to other perceptual measurements evaluating how well change was managed in the organization, suggesting the item’s construct validity is adequate (e.g. Bordia et al., 2011; Rafferty & Restubog, 2017).

Satisfaction with change management is the only Likert scale item in the study. With workplace change being measured as objectively as possible through a yes/no item, bullying and harassment being measured through a yes/no/maybe self-labelling item and control variables being measured as objective characteristics and demographics (see next subsection), the risk of common source bias affecting our results is already partially mitigated in the variable selection stage (Podsakoff et al. 2003).

3.3 Control Variables and Descriptive Statistics

The employee census allows us to control for individual and organizational-level variables that can affect the relationship between bullying and harassment, change, and satisfaction with change management. Individual characteristics include: age, gender, task, degree, classification level, working part-time, having carer responsibilities or not. Apart from these individual level characteristics, we also add information regarding the size and the policy cluster of each organization.

Descriptive statistics are presented in Table 1, together with a correlation matrix for the pooled dataset. Multicollinearity does not seem to be a problem, as confirmed by Variance Inflation Factor (VIF) values, which have a mean of 1.14.

Please include Table 1 here

4. Results

Please include Table 2 here

We start our analyses by testing the link between workplace change, satisfaction with change management, and bullying and harassment on both survey waves separately. We estimate logit models and calculate odds ratios. For a unit increase in x_k , the odds of a lower outcome compared with a higher outcome are changed by the factor $\exp(-\beta_k)$, holding all other variables constant. For instance, an odds ratio of 2 for variable gender (female) means that the odds of being bullied are 2 times higher for women compared to men (see Long & Freese (2006)). Our models explain roughly 10% of the variance while correctly classifying 83% of outcomes.

The results in Table 2 show that experiencing a change significantly increases the likelihood of being subject to bullying or harassment (odds ratios of 1.423 and 1.373). When a respondent is satisfied by the way how change is managed within the agency, however, the likelihood significantly drops (odds ratios of 0.614 and 0.604). These findings are in line with our expectations.

Before discussing the interpretation of these results, there are several important methodological issues to take into account. First, the analysis is based on extremely large samples. Although such large sample sizes have advantages, they can also lead to erroneous results. A large sample size can make the standard errors extremely small, in turn making even the smallest distances between the estimate and the null hypothesis statistically significant, potentially resulting in Type 1 errors (Lin et al., 2011). This issue increases the likelihood of mislabeling results as statistically significant. A second issue concerns endogeneity, which can render estimates uninterpretable. It is possible that some organizational or individual-level variables not included in our dataset affect both our explanatory variables and bullying and harassment. For instance, maladaptive organization cultures or organizational task-related factors may cause both workplace change and bullying and harassment. Moreover, although we partially address common source bias through item selection, any common source bias remaining despite these efforts may still produce endogeneity (Podsakoff et al., 2003). When not accounting for all such relevant endogeneity through model specification, classic cross-sectional analyses run the risk of wrongly estimating parameters, hindering our ability to make statements on the causal relationship between workplace change, satisfaction with change management, and bullying and harassment.

One possible way to deal with endogeneity is the use of a first difference (FD) estimator. This, however, requires panel data. The data used here include two different survey waves with identical questions, yet they are no panel data since respondents have not been followed over time. Nevertheless, we can create a panel structure by computing ‘social strata’ based on respondents’ gender, task, his/her agency cluster and his/her classification level. This resulted in 299 strata for both the 2013 and 2014 versions (a total of 598 strata over both years). For each of these strata we calculated means while we linked the data for each strata over both years. This approach allows us to create panel data, be it with some loss of detail, improving our ability to discern the causal relationship between our variables of interest. It should be noted that this panel data is created on the social strata level, not on the individual level. Furthermore, since means are calculated per stratum, the number of observations drops, leading to a lower likelihood of obtaining extremely small standard errors (and thus a lower likelihood of obtaining Type 1 errors). The descriptive statistics as well as a new correlation matrix can be found in Table 3.

Please include Table 3 here

Before analyzing this strata-based panel, we first conduct a visual inspection of the data and plot the variation in change (and satisfaction with change management) and bullying and harassment.

Please include Figure 1 and Figure 2 here

Both figures support our earlier findings regarding the effect of change and satisfaction with change management on bullying and harassment: the more people within a stratum experienced a change, the more likely that the observations within the stratum report an increase in mean levels of bullying and harassment. The opposite holds for the role of respondents’ satisfaction with change management. Using these data, we calculate the first difference estimator. For each stratum we take the first difference, that is:

$$\Delta y_{it} = y_{it} - y_{it-1}$$

Whereby -1 refers to the previous period. We also do this for the explanatory variables:

$$\Delta y_{it} = \beta_0 + \beta_1(x)_{it} + (a_i + u_{it}) - [\beta_0 + \beta_1(x)_{it-1} + (a_i + u_{it-1})]$$

α_i is called the fixed effect, or the unobserved effect while u_{it} is the idiosyncratic error or time-varying error and represents unobserved factors that change over time and effect y_{it} . The above formula shows that the fixed effect α_i is eliminated. Accordingly, factors that are not in the model and do not vary over time but affect both explanatory variables and bullying and harassment are removed, thus reducing endogeneity issues and leading to more reliable results. However, since we do not have panel data on the level of the individual but on the level of the strata (averages are calculated per strata), it is still possible that the model suffers from some degree of endogeneity based on organizational or individual characteristics. Thus, some caution is still warranted when interpreting results. We estimate this model using OLS (as the transformation of bullying and harassment scores into means per stratum implies that the dependent variable is now continuous). The results are presented in Table 4.

Please include Table 4 here

Looking at column 1 in Table 4, we see that experiencing a change significantly increases the likelihood of being bullied and/or harassed (beta coefficient of 0.148). However, when employees are satisfied with change management within the organization, the likelihood of bullying and harassment significantly decreases (beta coefficient of -0.355). These regression coefficients are plotted in Figure 3, illustrating the positive effects of workplace change on bullying and harassment (left-hand plot) and the negative effects of the satisfaction with change management variable (right-hand plot).

Please include Figure 3 here

Next, we also include an interaction term between change and satisfaction with change management. This allows us to test hypothesis 2 (satisfaction with change management mediates the relationship between workplace change and bullying and harassment). Additionally, including this interaction term mitigates potential differences in answers on satisfaction with change management between individuals who have experienced change (change=1) and individuals who have not experienced change (change=0). The results are presented in column 2 of Table 4. The predictive margins of the interaction are plotted in Figure 4, which illustrates that bullying rates are higher for strata that report a combination of low satisfaction with change management (CM=0) and high mean change experienced than for strata which report high levels of satisfaction with change management (CM=1).

Please include Figure 4 here

Together, these results indicate that a higher satisfaction with change management strongly and significantly reduces the effects of change on bullying and harassment (see the negative interaction effect coefficient of -0.661). These results imply that even though organizational change is a significant predictor of bullying and harassment, these effects can potentially be mitigated and even eliminated by change management that is perceived as satisfactory by employees.

5. Discussion

This article sought to provide innovative insights on the interplay between change, satisfaction with change management, and experienced levels of bullying and harassment in public sector workplaces. Our study used data from two samples of 80,000 federal civil servants in the Australian Public Service, and relied not only on cross-sectional analyses, but also on a strata-based analysis that reduces endogeneity issues. Our findings robustly demonstrate that workplace change increases levels of workplace bullying and harassment, while positively perceived change management mitigates the effect of change on bullying and harassment.

These results are suggestive of three important conclusions. First, previous studies have already demonstrated that workplace change may be an important individual-level stressor, which in turn produces organizational outcomes (Oreg et al., 2011). Workplace changes are typically initiated to achieve positive outcomes and are widely considered as necessary instruments to adapt organizations to environmental demands (e.g. Brunsson & Sahlin-Andersson, 2000). Yet change may also bring about substantial turbulence and uncertainty, inducing stress, anxiety, frustration, and uncertainty in individuals, which ultimately combine in tense, rigid, and negative work climates (Oreg et al., 2011; Bordia et al., 2004). The resultant negative work climates have been argued to provide fertile ground for bullying and harassment, both increasing opportunities for negative behaviors and increasing the chance that frustrated employees will lash out against others (Salin, 2003; Einarsen et al., 2011; Baillien et al., 2019; Hutchinson et al., 2005; D'Cruz et al., 2014). Although these intermediate mechanisms remained theoretical in our contribution, our findings do support earlier results by testing the overarching workplace change-bullying and harassment relationship, suggesting a positive effect in two large datasets.

The increasing support for a link between organizational change and bullying and harassment has important implications. At the individual-level, being a victim of bullying and harassment has the potential to generate various other negative psychosocial effects, ranging from increased anxiety and reduced job satisfaction to symptoms of depression and burnout (Nielsen & Einarsen, 2008). With public sector organizations increasingly attempting to foster employee well-being, it is important to realize that changing work environments could potentially be contextual factors producing the exact opposite. Moreover, while the most important effects of bullying and harassment are arguable found at the individual-level, it has also been noted that bullying and harassment may be expected to hamper various variables at the work unit and organizational levels (Hoel et al., 2020). Where bullying and harassment impedes job satisfaction or internal cooperation, it is likely that factors such as turnover and absenteeism will be heightened (Hoel et al., 2020), in turn impeding the functioning of the organization.

Second, change management scholars have long highlighted the role of adequately informing and involving change recipients through change management (Qian & Daniels, 2007; De Vries & Balasz, 1997; Korsgaard et al., 1995; Paterson & Cary, 2002; Brotherington, 2003). Our result demonstrating that change management mediates the relationship between workplace change and bullying and harassment tentatively suggests that positively perceived change management alleviates the aforementioned negative emotions – stress, frustration, and anxiety – that often accompany workplace change. This finding has important scholarly and practical implications. While the positive relation between experienced changes and workplace bullying and harassment will not come as a surprise to organizational psychologists (Hutchinson et al., 2005; Skogstad et al., 2007; D’Cruz et al., 2014; Baillien et al., 2019), hardly any research has been performed to examine how organizations could exacerbate or mitigate the level of bullying and harassment behavior through change management initiatives. For the many organizations experiencing periods of transformation, this finding urges them to get their change management efforts right.

Third, the study offers some methodological food for thought. A first contribution is that we test our expectations on a dataset with a large sample size. Such samples are particularly attractive here, as bullying and harassment studies are complicated by the issue that even high rates of bullying and harassment only affect a small minority of respondents, making accurate estimation of bullying and harassment’s correlates difficult without sufficiently large samples (Nielsen et al., 2020; Nielsen et al., 2009). Second, we complement our cross-sectional analyses

with a strata-based approach that allows to estimate a first-difference model, thereby improving our ability to make causal statements regarding the relationship between workplace change, satisfaction with change management and bullying and harassment. Third, although large sample sizes are a benefit for bullying research, such samples are simultaneously confronted with inferential issues related to extremely small standard errors. By validating our cross-sectional analyses with a panel based on strata, we were capable of ruling out that our significant findings were based purely on large sample sizes.

6. Conclusion

Public organizations implement (sometimes dramatic amounts of) change to adapt to external demands and challenges. The ability to effectively manage change has thus become critical for contemporary organizations. This statement holds even more as evidence is building up on the potentially negative psychosocial effects of unmanaged or poorly managed change. This study contributes to larger debates on the effects of organizational changes by examining one of the most far-reaching expressions of the negative work climate brought about by intense change episodes: increased bullying and harassment behavior. The first theoretical contribution of this study lies in its support for the relation between change and bullying/harassment on two large-scale datasets, using strata-based panel methods. Second, the role of satisfaction with change management in mitigating the negative psychosocial effects of changes was theorized and empirically supported. High satisfaction with change management seems to provide a way out of the catch-22 for organizations wanting/needing to transform and implement change, while reducing negative consequences of said change.

The study also comes with limitations and opportunities for future studies. First, while our strata-based panel analysis allows us to provide additional evidence regarding the causal direction of relations and addressed some sources of endogeneity, it does not preclude all forms of endogeneity. For example, our measurement on satisfaction with change management may partly capture satisfaction with supervisors which, in turn, may correlate with the likelihood of reported bullying behavior when said bullying was performed by the supervisor. These are very specific circumstances – both change management and bullying are concepts that transcend the role of supervisors – yet the example does shed light on how endogeneity risks may be at play. As our panel is based on aggregated strata and fixed effects, we cannot entirely guarantee that individual-level and time-variant variables did not play a role. Our strata-based model is an

improvement over traditional cross-sectional analyses but not as powerful as an individual-level panel. Nevertheless, given that we do mitigate endogeneity concerns, the rarity of individual-level panel data on our variables of interest and the other benefits of our data (in particular the confirmation of our findings in two large, APS-wide samples), we believe our results provide a valuable contribution. Second, while our analyses confirm the expected relations between change, satisfaction with change management and bullying and harassment, our approach did not allow to directly measure the theoretical mechanisms through which these effects take place. Several perspectives were introduced based on previous studies (opportunities for bullying and harassment, stress, uncertainty and frustration, perceptions of injustice and psychological contract violation) (Skogstad et al., 2007; Baillien & De Witte, 2009; Baillien et al., 2019; Hutchinson et al., 2005). The same holds for the measurement of satisfaction with change management, which did not allow a fine-grained insight into concrete components (e.g. informing change recipients, increasing participation, ensuring fair outcomes of allocation). Future studies can examine how different mechanisms play out in different types of change episodes, and how these are best mitigated by change management approaches.

Third, our measurement of bullying and harassment combined both behaviors. While bullying and harassment are strongly overlapping phenomena, and even considered synonymous by some authors (see e.g. discussions of differences and similarities such as Branch, 2008; Einarsen et al., 2020), it may be useful for future research to examine whether differences in nuances may cause both constructs to have somewhat differing change-related antecedents. In a similar vein, future research could attempt to bring further nuance into the equation, for instance by studying whether changes may have accumulating effects or whether different types of changes affect bullying and/or harassment differently. Similarly, using items on various forms of change management may offer more nuanced results on how management can mitigate change-related effects on negative workplace behaviors. Finally, our theoretical line of argumentation opens the door to further theory on potential self-reinforcing cycles, in which negative work climates (induced by change) provoke bullying and harassment, which in turn worsen work climates and performance, which may eventually lead to calls for further changes and so forth. We would welcome longitudinal designs suited to shedding light on these long-term dynamics between our core variables of interest.

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Tables & Figures

Table 1 Descriptive statistics cross-sectional data (2013 and 2014), showing means, standard deviations and bivariate correlations

Variable	2013 (N=87126)		2014 (N=77983)			Pooled data											
	Mean	SD.	Mean	SD.		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Bullying & harassment	0.162	0.368	0.164	0.370	(1)	1.000											
Age	2.358	0.794	2.374	0.783	(2)	0.004	1.000										
Gender	1.573	0.495	1.573	0.495	(3)	0.062	-0.082	1.000									
Task	8.520	5.187	8.719	5.149	(4)	-0.004	-0.054	0.066	1.000								
Degree	2.240	0.852	2.369	0.877	(5)	-0.023	-0.111	-0.111	0.077	1.000							
Classification level	0.292	0.455	0.289	0.453	(6)	-0.025	0.149	-0.129	0.071	0.284	1.000						
Fulltime	0.132	0.339	0.136	0.343	(7)	-0.022	-0.014	0.230	0.072	-0.046	-0.059	1.000					
Carer responsibilities	0.320	0.466	0.278	0.448	(8)	0.047	0.070	0.106	0.025	0.016	0.067	0.217	1.000				
Satisfaction with change	2.867	1.045	2.961	1.059	(9)	-0.187	-0.018	0.065	0.005	-0.051	-0.069	0.021	-0.023	1.000			
Agency size	0.863	0.344	0.878	0.328	(10)	0.012	0.042	-0.023	0.051	-0.084	-0.060	-0.001	0.014	-0.036	1.000		
Change experience	0.716	0.451	0.740	0.439	(11)	0.081	0.009	0.059	0.033	-0.016	0.000	0.003	0.042	-0.140	0.033	1.000	
Agency task	4.185	1.258	4.157	1.272	(12)	0.030	0.105	-0.018	-0.040	-0.182	-0.145	-0.014	0.017	-0.060	0.527	0.012	1.000

Table 2 Logit results (odds ratios) for cross-sectional analysis on the 2013 and 2014 datasets
(reporting odds ratios)

Variables	Bullying & Harassment	
	2013	2014
	odds ratio	odds ratio
Age	1.008 (0.0128)	0.991 (0.0133)
Gender	1.437*** (0.0305)	1.533*** (0.0346)
Task	$\chi^2(14)=128,09^{***}$ $\chi^2(14)=111,36^{***}$	
Degree	$\chi^2(2)=60,78^{***}$ $\chi^2(2)=60,09^{***}$	
Classification level	0.897*** (0.0216)	0.861*** (0.0220)
Fulltime	0.677*** (0.0208)	0.652*** (0.0210)
Carer responsibilities	1.300*** (0.0265)	1.306*** (0.0292)
Satisfaction CM	0.614*** (0.00597)	0.604*** (0.00606)
Agency size	0.882* (0.0453)	0.838** (0.0502)
Change	1.423*** (0.0337)	1.373*** (0.0343)
Agency task	$\chi^2(4)=42,78^{***}$ $\chi^2(4)=16,79^{***}$	

Constant	0.224***	0.323***
	(0.0193)	(0.0291)
Observations	87.126	77.983
McKelvey & Zavoina	0.107	0.113
Cragg- Uhler/Nagelkerke	0.082	0.088
Correctly classified	83.85%	83.64%
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05		

Table 3 Descriptive statistics for panel data showing means, standard deviations and bivariate correlations

Variable	Mean	SD.		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mean_bullying & harassment	0.154	0.076	(1)	1							
Mean_age	2.364	0.325	(2)	0.0036	1						
Mean_degree	2.552	0.311	(3)	-0.1174	0.0703	1					
Mean_fulltime	0.112	0.097	(4)	0.1362	-0.1732	0.0214	1				
Mean_carer responsibilities	0.297	0.119	(5)	0.214	0.2609	0.1694	0.4555	1			
Mean_change	0.707	0.127	(6)	0.2217	0.0005	-0.1174	0.0858	0.0568	1		
Mean_change management	0.734	0.064	(7)	-0.349	-0.2317	-0.0376	0.0777	-0.1664	-0.1612	1	
Mean_agency size	0.486	0.425	(8)	0.075	0.0147	-0.1685	-0.0471	0.0165	0.2133	-0.1104	1

Table 4 Results first difference estimator panel data, variables constructed using means per stratum

Variables	(1) mean Bullying & Harassment 2013- 2014	(2) mean Bullying & Harassment 2013- 2014 with interaction
Mean_age	-0.0340* (0.0202)	-0.0368* (0.0202)
Mean_degree	-0.0337 (0.0213)	-0.0320 (0.0212)
Mean_fulltime	-0.237*** (0.0844)	-0.243*** (0.0840)
Mean_carer responsibilities	0.0473 (0.0454)	0.0620 (0.0458)
Mean_change	0.148*** (0.0359)	0.158*** (0.0361)
Mean_change management	-0.355*** (0.0716)	-0.350*** (0.0713)
Interaction change_ change management		-0.661** (0.326)
Mean_agency size	-0.00427 (0.0201)	7.20e-06 (0.0201)
Constant	0.491*** (0.0858)	0.331*** (0.0639)
Observations	598	598
R-squared	0.187	0.198
Number of strata	299	299

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

Figure 1 Overall variation change & bullying & harassment (mean rate of bullying and harassment per stratum on y-axis)

Figure 2 Overall variation change management & bullying & harassment (mean rate of bullying and harassment per stratum on y-axis)

Figure 3 Visualization of results of the direct effect of change and change management on bullying and harassment

Figure 4 Predictive margins illustrating the interaction effect between change and change management on bullying and harassment (mean rate of bullying and harassment per stratum on y-axis)