When are organizational reforms perceived positively? An examination of the role of employees' hierarchical level

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Abstract:

The aim of this study is to theorize and test the implicit assumption in the literature that reform perceptions vary according to employees' position in the organizational hierarchy. Our theoretical argument centers on the expectation that employees appreciate reforms differently depending on their position in the organization. Our large-scale analyses confirm that employees from upper organizational levels are more appreciative of reforms in general, though follow-up analyses on distinct types of reforms demonstrate variations with theoretical and practical implications.

Key words: organizational reform; reform perception; organizational hierarchy; Australian Public Service

Introduction

For decades, the general conception of governmental organizations has been centered around their stability and bureaucratic nature. Over the last decades, however, practitioners and scholars from public administration and management acknowledge the introduction and quick succession of reforms in the public sector (Askim et al., 2010; Kuipers et al., 2014). Being confronted with varying sources of turbulence and demands in their environments, public organizations are evermore forced to change their structures and processes to adapt to changing circumstances, legal frameworks, and political preferences (Pollitt & Bouckaert, 2017). Consequentially, contemporary organizations seem to be under almost perpetual reform (Brunsson, 2009).

The fragmented literatures on organizational change and reform are ambivalent about the value of reforms. On the one hand, studies with a managerial perspective largely focus on the opportunities reforms hold for transforming organizations into more complete organizations (Brunsson & Sahlin-Andersson, 2000), thus improving organizational adaptability, performance, and legitimacy (Kanter et al., 1992). Reform is considered natural and an illustration of progress, while stability appears backward or unnatural (Brunsson, 2009). The focus is mainly on change management instruments and effective leadership practices to guide change leaders in their management of reform (Fernandez, 2015). On the other hand, a longstanding body of research has used psychological insights to shed light on the negative effects of reforms on individual employees (Oreg et al., 2011). Because reforms tend to disrupt the fabric of life in organizations (Jones et al., 2008), they tend to generate uncertainties and stress among change recipients, which may result in series of harmful organizational effects on employee well-being, job satisfaction and performance (Gagné et al., 2000; McMurray, 2007; Staw et al., 1981). Also in public administration and public management, the potentially dramatic psychosocial effects of reforms are increasingly recognized (e.g. Kleizen et al., 2018; McMurray, 2007; Wynen et al., 2019).

What these literatures share is the implicit notion that reform perceptions may differ strongly depending on employees' hierarchical level in the organization. Studies have often taken for granted that reforms are initiated and praised by upper management, and skeptically received by lower level staff (Piderit, 2000). In fact, the idea that for change to be successful, change strategists have to be able to convince change recipients of the value of said change in order to curb employee skepticism, is widely held in both managerial and psychologically oriented studies: "The thinkers, the reformers, are to affect the doers, the reformees" (Brunsson, 2009, p. 134). Piderit (2000) states that the language of resistance to reform by employees is so ingrained in our thinking that it leads us to perceive employees as obstacles to overcome.

Surprisingly, this strong assumption on which so much of our thinking on reform and change management has been built has received scant empirical attention. In the long history of psychology-informed studies on organizational change, the relative absence of hierarchical level as an antecedent of change attitudes is striking (Oreg et al., 2011). Most studies focus on employees from a specific group or hierarchical level (Dam, 2005; Giauque, 2015; Rafferty & Griffin, 2006). The very few studies that empirically considered differences in change perceptions across hierarchical levels have done so in qualitative research designs on private sector cases (Jones et al., 2008; Luthans & Sommer, 2016).

This study contributes to the literatures on organizational change and reform by taking a step back. First, by bringing together fragmented insights from the psychology-informed change literature and the sociological neo-institutional literature to theorize reform perceptions at different hierarchical levels. While the first has shown a range of potentially negative psychosocial effects of reforms at the individual level, the latter is well-suited to shed light on how employees' hierarchical position which constrains (or enables) their reform perceptions (Brunsson, 2009; Brunsson & Sahlin-Andersson, 2000; Røvik, 2011). Second, this study empirically tests such differences on a large public sector dataset. In contrast to private businesses, public organizations are part of a broader political-administrative system with political executives at the top of the organizations. Though public managers have received substantial autonomy from politicians over the last decades, studies indicate that political actors still have a strong urge to steer their implementing organizations (Wynen et al., 2020). The specific public sector context brings with it specific political-administrative dynamics which may well inform our understanding of the psycho-sociological mechanisms through which (certain types of) reforms are locally accepted and implemented. The following research question is addressed: "How are employee reform perceptions related to their position in the organizational hierarchy?"

There continues to be a lack of research on "the factors that influence the change process and determine its success or failure" (Kuipers et al., 2014, p. 15). An important contribution of this study to the literature on organizational change and reform, therefore, is to account for organizational heterogeneity in reform perceptions. This study analyzes differences in reform perception according to position in the organizational hierarchy. Shedding light on the intergroup nature of organizational change will have important scholarly and practical implications (Jones et al., 2008).

Little is known about what it is that leads reforms to be perceived differently across organizational levels. This study theorizes that the position in the organizational hierarchy comes with specific uncertainties and coping methods that are triggered during reforms, and that it is therefore an important antecedent for how employees experience reforms. Given the high failure rate of workplace changes, and given that many change efforts fail because the central role individuals play is often underestimated (Choi, 2011), the ongoing analyses of the factors that lead employees to accept such changes remain a critical endeavor.

The empirical material for this study if provided by the Australian Public Service's (APS) 2014 employee census that includes 99,392 observations (i.e. employees) from 89 public agencies. The APS comprises all departments and agencies where staff members are employed under the Public Service Act of 1999. As part of the Anglo-American tradition, the APS was modelled on the Westminster model of parliamentary democracy. Levels of agency autonomy have historically been relatively high, in particular when it comes to personnel functions were agencies and departments have the discretion to develop their own human resources structures, frameworks and policies. More recently, though, attempts have been made to reinforce central control and a greater sense of identity and public sector cohesion, which include the formulation of employment categories according to work level standards (Aulich & Wettenhall, 2012; Australian Public Service, 2012, 2014). The APS is of particular interest to study given their

track record as a frontrunner in many reform doctrines (Halligan, 2007). These data are unique in the sense that they offer extremely detailed information on the reforms civil servants experienced and the way they perceive these reforms, while also including information about the hierarchical level of each respondent, using a categorization that fits well with existing theory and conceptualization.

In the remainder of this article, the next section presents the theoretical framework leading to the hypothesis. Next the methods and data are introduced to empirically test the hypothesis. The results are then presented, after which we discuss our findings in light of existing theories, and summarize our core findings and limitations in the concluding section.

Theoretical framework

Two perspectives on organizational reforms

In Public Administration scholarship, a conceptual distinction is made between 'change' and 'reform' (Kuipers et al., 2014). As a concept, reform is a narrower than change as it refers to specific changes that are intentional and designed (Pollitt & Bouckaert, 2017). Reforms start with explicit descriptions of the aspired organizational state in terms of structure, procedures, and ideals. As such, reforms often include attempts to introduce clear goals or a more clear vision, better coordination or control, with the overall aim to increase rationality and efficiency (Brunsson, 2009). This study focuses on reforms as intentional and designed changes.

A rough overview of the reform literature shows two broad streams of scholarly literature. First, scholars taking a managerial perspective see reforms as important antecedents of organizational flexibility, innovation and performance (Burns & Stalker, 1961; Kanter et al., 1992). According to this perspective, reforms are necessary instruments to bring organizational structures, processes or cultures in line with organizational strategy. Second, scholars taking a psychological perspective point at the potentially dramatic effects of reforms on individual

employees on a series of outcomes (Oreg et al., 2011; Rafferty & Griffin, 2006). Employees are expected to suffer from reform (or at least to have the perception they will suffer), and therefore to resist said reforms. Such resistance to reform may even occur when reforms are implemented for positive reasons (e.g. to adapt to changing environmental conditions and remain competitive). Expected employee resistance might stimulate perceptions among managers to treat their subordinates as obstacles to overcome (Piderit, 2000). The change management literature has therefore produced a wide number of recipes to get employees to get on board of reform efforts, through adequate leadership and change governance (Ahmad et al., 2020; Kuipers et al., 2014).

The insights from managerial- and psychologically-oriented studies seem contradictory, yet they point at a common mechanism that applies when employees make sense of organizational events such as organizational reforms. A longstanding body of research has examined how change recipients cognitively[1] evaluate changes in their work environment as (more) negative or (more) positive (Oreg et al., 2011; Wanberg & Banas, 2000). This evaluation typically results from an appreciation by recipients of the perceived impact of the reform and the level of control they have during the reform process (Jackson & Dutton, 1988; Nutt, 1984). The abovementioned psychological perspective builds on the potential uncertainty and stress that accompanies reforms that are perceived as more negative (Bordia et al., 2004; Oreg et al., 2011). The managerial perspective is consistent with more positive accounts of the potential of reforms to legitimize the organization and improve its performance in the long term. The core argument in the current study is that organizational reforms are more likely to be positively perceived the higher one goes in the organizational hierarchy. In the next section we first give an account of

[1] Next to cognitive reactions to organizational changes, studies have also looked into affective and behavioral responses (Oreg et al., 2011).

the hierarchical perspective of organization, after which we relate different hierarchical levels to the likelihood of perceiving reforms more positive or negative.

Organizational hierarchy and reform perception

This study distinguishes different hierarchical levels in organizations, a notion that goes back to the classic writings on organizational structure and design (Mintzberg, 1979; Parsons, 1960; Thompson, 1967). Parsons (1960) argued that organizations exhibit three distinct levels of responsibility and control: institutional, technical, and managerial.

First, at the top of the organizational hierarchy, upper-level leadership and executive positions are concerned with the organization's position within a wider social system which is the source of an organization's legitimacy and higher level support (Thompson, 1967). Because of the emphasis on legitimization, this level is mostly concerned with what Brunsson (2002) refers to as "organizational talk"; that is: the overall articulation of the organization and its institutional structure in the function of external demands. Second, at the lower levels of the hierarchical ladder, the technical level – also referred to as the technical core (Thompson, 1967), operating core (Mintzberg, 1979), or action level (Brunsson, 2002) – is concerned with executing the technical task, in terms of processing materials or other inputs, handling clients, or cooperating to get the job done (Thompson, 1967). Third, the managerial (or: supervisor) level mediates between the technical core and those who use its services, procure the necessary resources for carrying out the technical functions, and control the technical suborganization (Parsons, 1960). In addition, the managerial level operate as mediators in between the levels of executive positions and the technical core, and the different emphases these levels exhibit (Giauque, 2015). In the words of Thompson (1967, p. 12):

> "If the organization must approach certainty at the technical level to satisfy its rationality criteria, but must remain flexible and adaptive to satisfy environmental requirements [at

> the strategic level], we might expect the managerial level to mediate between them, ironing out some irregularities stemming from external sources, but also pressing the technical core for modifications as conditions alter."

As a result, mid-level managers are often characterized by complex identities, as they have to look both upward and downward, being both the controllers and the controlled (Harding et al., 2014).

A relation can be expected between these hierarchical levels and their role during and perceptions of organizational reforms. Kanter et al. (1992) identify three key groups within organizations during change: change strategists at the top of the hierarchy, change managers in middle management (supervisors), and change recipients at lower levels (non-supervisors) (Jones et al., 2008). This study builds on this insight to theorize and empirically test the core argument that employees' perceptions of organizational reforms are related to their positions in the organizational hierarchy. More specifically, we expect that strategic level employees will see reforms as opportunities to legitimize the organization in response to environmental uncertainties over which they exert relatively much influence and control, whereas technical level employees will likely perceive reforms as threats to existing routines and certainties over which are largely outside their control. The managerial level, lastly, is situated in between; on the one hand, being exposed to the ambiguities and inconsistencies brought about by strategic vs. technical perceptions of reforms and, on the other hand, having some control over and involvement in reform implementation (Jackson & Dutton, 1988). In the next section, we will outline how employees experience different types of uncertainty depending on their position in the organizational hierarchy (Bordia et al., 2004). In doing so, we bring together insights from organizational psychology, sociological neo-institutional perspective and change management.

Reform perceptions at the strategic level

One of the key characteristics that sets the strategic level apart is their long-term focus and exposure to numerous and conflicting demands and expectations from external audiences. A classic idea among organization scholars is that organizations attempt to seal off the technical level from environmental influences: letting the strategic level serve as a buffer to worry about long-term uncertainties so as to allow line employees to focus on the short-term efficient execution of the organization's core task (Parsons, 1960; Thompson, 1967).

This basic distinction in focus brings about distinct role expectations and uncertainties, which can be more focused on politics/talk (strategic level) or action (technical level) (Brunsson, 2002). Members of the strategic level have a tendency to take a more long-term vision of organizational strategy and what is needed to achieve said strategy. Upper management operates under the well-known principal-agent problem (Van Thiel, 2016). On the one hand, they are ultimately responsible for the organization and its operations. On the other hand, they are as unable as anyone else to know everything that is happening in their organization (Brunsson, 2009). The result is significant uncertainty, which can be expected to affect the strategic level's orientation to reform.

Organizational reforms are most often initiated by members from upper organizational levels, whose roles are more akin to change strategists and change managers (Choi, 2011; Jones et al., 2008). One important reason why this is the case is the legitimizing role organizational reforms have towards external audiences. Contemporary organizations are conspicuously open, often publicly displaying (attempts at reforming) their formal structures, processes, and ideologies (Brunsson, 2009). Reforms then are means for top management to represent the organization as it ought to be to the outside world. Reforms offer one way to demonstrate that the organization reflects popular management ideas (Røvik, 2011). Organizational reforms are particularly useful instruments in a case of organizational wrongdoing to respond to outsider criticism. By describing how problems will be dealt with in the future, the initiation of reforms

demonstrates that the organization is dynamic and improving. Current organizational problems which might be hard to accurately comprehend, let alone deal with, are solved by providing a model of a future and improved organization. Reforms, therefore, "make it easier to fulfil one of the primary tasks of top management: representing the organization to others" (Brunsson, 2009, p. 135).

Reforms not only serve to legitimize the organization, but also to demonstrate the role and meaning of the strategic level itself to internal and external audiences. In a setting of high uncertainty due to the mismatch between high responsibility and low controllability, reforms offer one way for leaders to show their importance to the organization's development. Reforms nurture an illusion of hierarchy and rationality that generates meaning and an incentive to act (Brunsson, 2009).

Because the strategic level is more likely to initiate reforms, we also expect them to feel more responsible, be more involved, and therefore more supportive of reforms. The notion that participation in change processes is a crucial precursor of positive change perceptions is well-known in the change management literature (e.g. van der Voet, 2016), and psychology-informed change literature (e.g. Armenakis & Bedeian, 2016; Oreg et al., 2011). Different attitudes between upper and lower levels in the organization can be expected because the former are generally more involved in reform processes (Jones et al., 2008). In their qualitative study, Luthans and Sommer (2016) find that upper levels frequently met face-to-face to brief each other on the progress of reforms, whereas staff employees only received occasional updates. As the quality of received information about changes is an important antecedent of change attitudes (Oreg et al., 2011; Wanberg & Banas, 2000), employees that are more involved in and informed about reform processes are more likely to perceive reforms more positively.

In addition, upper levels tend to increase their control during intense reform episodes (Armstrong-Stassen, 1998). 'Internal locus of control' – which reflects individuals' beliefs that they are responsible for their own fate – has often been studied in the psychological change literature as a personality trait (Fried et al., 1996; Oreg et al., 2011), yet we argue the mechanism can also be linked to hierarchical level. Threat-rigidity theory posits that organizational climates become more top-down and rigid as stress and uncertainty caused by organizational reform rise (Staw et al., 1981). One prevalently mentioned prediction of threat-rigidity theory relates to the centralization of control by the organization's management (Staw et al., 1981). When the top management level is faced with environmental pressure to initiate reforms, often in relatively short timespans, uncertainty is reduced by centralizing control over required changes in small groups in order to be able to act quickly and decisively; a notion that is supported in studies observing an increase in control-oriented coping behaviors among managers during downsizing events (Armstrong-Stassen, 1998; Jones et al., 2008).

The assumption that upper levels will generally be more supportive of reforms does not negate the possibility of managerial dissatisfaction with reforms. However, studies show that managerial dissatisfaction with reforms often is directed towards reform recipients rather than the reform itself (Piderit, 2000).

An important side note is that strategic level staff in the public sector operate in a different setting than their private sector counterparts (on which most of the literature discussed so far is based). An important distinction with their private sector counterparts is the political-administrative setting in which public managers operate. One may well question the extent to which public managers are actually *driving* reforms, as opposed to *being driven* (or outright forced) to reform by their environment and political principals. Since this study is not comparing public with private managers' reform perceptions, but examining reform perceptions between hierarchical levels within a similar public sector setting, we still expect strategic level

staff to be *relatively* more likely to understand the long-term benefits of reforms and to be more in control (or at least informed) on the implementation of reforms.

Reform perceptions at the technical and managerial level

Organizational psychologists have associated perceived job insecurity with increases in greater job dissatisfaction, mental health complaints, job-induced tension, emotional exhaustion, but also with a greater affective resistance to change (see Oreg et al., 2011 for an overview). Recipients of reforms at lower organizational levels typically experience a greater sense of threat and uncertainty about the consequences of organizational reform than do strategists at higher organizational levels (Jones et al., 2008). Such uncertainty is warranted, given that the impact of reforms is often more dramatic as one goes down the organizational hierarchy (Jones et al., 2008). In the private sector, studies find that reductions more frequently target line positions (Luthans & Sommer, 2016). Not surprisingly, then, private sector oriented studies find that reform recipients at lower organizational levels report relatively high levels of role ambiguity and work overload, low levels of satisfaction with and support from their supervisory relationships, low job satisfaction and commitment, low perceptions of job security and low acceptance of organizational reforms (Armstrong-Stassen, 2005; Armstrong-Stassen, 1998; Jones et al., 2008).

Yet even in public sector contexts which typically bring more job security – though this strongly varies as well, see Bhatti and colleagues (2015) – reorganizations often involve some kind of job change that affects existing routines which brings certainty to a workplace environment (Van Dam, 2005). In addition, even when one's own workplace has not been affected by reforms, declines in other units, departments and agencies might cause feelings of empathy with the fate of colleagues or, reversely, concerns about having to work harder to compensate for problems elsewhere (Luthans & Sommer, 2016).

At the most extreme, discrepancies in employee perceptions between 'what the organization has been' and 'what it is now (or threatens to be)' might cause employees to perceive a breach in their psychological contract with the organization (Bellou, 2007; Yu, 2009). As an employee prefers the pre-reform situation to the post-reform situation, he/she may feel that the organizational led to a destruction of valuable resources that were available in the pre-reform situation (Bellou, 2007). This argumentation finds support in studies which find that high organizational commitment prior to reforms may negatively affect reform perceptions (Dam, 2005).

Dissatisfaction with reforms might be strengthened because, while the disadvantages and potential losses of reforms are often relatively clear for employees at the technical level, the potential gains to improve their work situation might not always be. Reforms often are not aimed at the products of the public sector (e.g. health care or education). Rather, they attempt to change modes of managing, controlling, and accounting (Brunsson, 2009); all instruments which have a more direct benefit to managerial and strategic level employees.

Uncertainties among lower organizational levels are amplified by their relative lack of involvement in reforms. Whereas top management's closer position to the decision making that influences the content of reforms may cause them to be more aware and accepting of reforms, line employees are often little more than recipients of upper management decisions with little impact on planning and implementation (Luthans & Sommer, 2016; Wanberg & Banas, 2000). The theoretical rationale for the potentially devastating effect of such lack of involvement on reform acceptance is provided by self-determination theory (Ryan & Deci, 1985), which – applied to a reform context – proposes that acceptance is facilitated by supporting employees' autonomy by giving a rationale for the reform, offering some choice about how to implement the reform, and acknowledging feelings about the reform (Gagné et al., 2000).

Not surprisingly, studies find that the uncertainty brought about by reforms amounts to substantial stress in the workplace (Bordia et al., 2004; Yu, 2009), which in turn has negative effects on the well-being and job satisfaction of individual employees (Staw et al., 1981), and ultimately: their attitudes towards organizational reform (Giauque, 2015). Disillusion among technical level employees might be further strengthened by the inherent contradiction between the legitimizing logic that dominates at the strategic level and the implementation problems that exist at operational levels. On the one hand, reforms tend to be systematically oversold by their proponents who tend to promise more than the reform can actually fulfil. On the other hand, implementation problems with reforms have been widely documented (Brunsson, 2009).

We have yet to factor the managerial level into this discussion. As mentioned, members of the managerial level operate as mediators in between the levels of strategic positions and the technical core (Giauque, 2015). They hold a complex and ambiguous position. On the one hand, the framework of Kanter et al. (1992) identifies the managerial level (typically mid-level supervisors) as change managers, with substantial involvement during reforms. Such involvement is likely to lead to more positive reform perceptions. On the other hand, studies point at the potentially negative impact of workplace reforms on the managerial level compared to the strategic level (Jones et al., 2008). In addition, the same ambiguities that characterize the general daily functioning of middle managers apply during reforms, as middle managers are exposed to both the strategic logic and the implementation logic, and the inconsistencies between both; at the same time having to promote change downward and communicate problems upward. Research on how these ambiguities affect middle managers' change perception is still in its infancy (Giauque, 2015; Harding et al., 2014). Given the strong expected negative effects of ambiguity and uncertainty on the managerial level that is generated by many reforms, we expect more negative attitudes within this group, on par with the negativity that exists at the technical level. We formulate the following hypothesis:

Hypothesis: Members at the strategic level of organizations will have more positive perceptions of organizational reforms compared to members at the managerial and technical level of organizations.

Methods and Data

To empirically test the above hypothesis, we rely on data from the Australian Public Service (APS). More specifically, we make use of the 2014 wave of the APS Employee Census.[2] The employee census is designed to measure key issues such as employee engagement, leadership, health and wellbeing, job satisfaction, and general impressions of the APS. The survey was sent out electronically to all 151,792 APS employees recorded in the employment database, of whom 99,392 responded (response rate of 68%). The methodology used removed sampling bias and minimized sample error by ensuring that all APS employees had been invited to participate. Some employees who had only recently entered the APS, however, were not recorded in APS employment database at the time the invitations were issued. Non-sampling bias was checked by comparing the survey sample against the overall APS population on gender, classification, location, and employment category. No significant difference could be detected.[3]

Organizational reforms

In a first question regarding organizational reforms, respondents were asked whether their immediate work group has been affected by a major workplace change in the last 12 months (e.g. functional, geographical, staffing changes). The APS uses the term 'change' to discuss events that scholar would label as 'reforms' (that is: specific types of intentional and designed changes). This question served as a selection mechanism. As we are solely interested in reform

[2] Recently the APS made more recent versions of the survey available. However due to privacy concerns these datasets are less detailed making them less suited to examine the link between classification level and change perceptions.

[3] Further information on the survey methodology is available at: http://www.apsc.gov.au/publications-and-media/current-publications/state-of-the-service/state-of-the-service-2013-14/appendices/survey-methodologies

perceptions, having experienced at least one reform is a requirement. This reduced our initial, representative sample of 99,392 employees to 61,274.

In a following up question, respondents were asked to indicate which of the following types of organizational reform they experienced in the last 12 months (multiple answers could be selected):

- Change in physical workplace (e.g. moved to a new building, existing workplace renovated)
- Machinery of government change[4]
- Relocated to a new city
- Structural change (change in division or branch structure)
- Functional change (e.g. change in responsibilities)
- Change in work priorities
- Decrease in staffing numbers
- Increase in staffing numbers
- Change in Senior Executive Service leadership (e.g. change of branch head)
- Change in supervisor
- Other

The perception of the respondent regarding reforms was captured using the following question: "In your opinion, to what extent do you think these changes are likely to improve your team's

[4] The APS considers that Machinery of Government (MoG) change occurs when the Government decides to change the way Commonwealth responsibilities are managed. It can involve the movement of functions, resources and people from one agency to another.A MoG change can lead to: the creation of a new government agency; the creation of a new portfolio; the movement of agencies between portfolios; the closure of an existing government agency; and/or the movement of functions and responsibilities from an APS agency to another APS agency, an APS agency to a non- APS agency, a non- APS agency to an APS agency. (https://www.apsc.gov.au/machinery-government-mog-changes-what-mog-change)

ability to do their work in the longer-term?". Respondents were given the following answer categories (5 point Likert scale; ranging from 5- to a vary extend to 1-Not at all). This final question offers an insight in a respondents perception of reforms experienced and is used as the dependent variable.

Classification levels

Another critical element for testing our hypotheses is the position of the respondent in the organizational hierarchy. This position is reflected in respondents' classification level. The classification level is based on the APS classification framework which groups together jobs with similar features of work value, based on the level of complexity and depth of responsibility expected. The APS classification structure is designed to provide a flexible framework for a wide variety of APS jobs across a diverse range of agencies. The structure is based on a single spine of classification levels, underpinned by a suite of training classifications. This approach facilitates mobility within the APS and supports the concept of a unified APS. It also provides a structure that enables the merit-based promotion of APS employees to a higher classification level. The classification framework exists of the following levels;

- APS levels (1-6);
- Executive levels (1-2);
- Senior Executive Service (SES) levels (1-3).

The APS classification framework distinguishes jobs according to several dimensions: 'leadership and accountability', 'job context and environment', 'independence and decision-making', 'stakeholder management', 'management diversity and span' (Australian Public Service, 2012, 2014). Generally speaking, with each increase in classification level jobs may involve more complexity, more independence and responsibility, more contact with external stakeholders, and more supervision or leadership activities. Importantly in light of this study,

while there existed 11 classifications in total, the three overarching groups (APS – E – SES) are separated by qualitative anchors that correspond well to our theoretical framework. While upper APS level employees may have some supervision or coaching responsibilities, it is only from the Executive level onwards that the classification framework explicitly mentions a leadership role which includes the task to 'Implement change and manage ambiguity in the workplace'. A next qualitative anchor exists between the Executive Level and the SES level. While upper Executive level have some role in developing strategy, policies, priorities, the distinguishing feature of SES level staff is their long-term focus and understanding of future implications, their cross-government, broader corporate leadership and cross-governmental strategy shaping and implementation and external representation. The census data includes 69,674 participants from the APS levels 1-6, 27,483 participants from the Executive employees and 1,898 responses from SES employees. When selecting only those having experienced a change we end up with 42,496 observations from the APS levels 1-6, 17,468 observations from the Executive level and 1,310 observations from the SES level.

Control variables

The employee census allows to control for both variables at the individual and organizational level that can affect the relationship between classification level and change perceptions. Note that it is not our intention to comprehensively explain the perception of reforms by respondents. Explaining this type of human behavior is utterly complex and will depend on a wide range of underlying individual, work- and family-related variables. Instead, we intend to theorize and test the specific relation between organizational reforms and respondents' position in the organizational hierarchy (or: classification level). To do so, we included control variables that are, on the one hand, theoretically relevant and, on the other hand, objectively measured as much as possible to mitigate risks of common method bias. The individual characteristics used are: age, gender, education, working fulltime or not, experience in the current classification

level, length of service in the APS, English speaking background or not, and having carer responsibilities or not. Apart from these individual-level controls we consider information on the size (small (less than 251 employees), medium (251 to 1000 employees) and large (1001 or more employees)) and the policy cluster (specialist, regulatory, policy, smaller operational and larger operational) of each organization. Table 1 shows descriptive statistics for the precise survey questions used as well as a (Pearson) correlation analysis.

Please include Table 1 here

When examining Table 1, which consists solely of employees who have experienced a reform (roughly 60% of the initial sample), we notice that most of them experienced a decrease in staffing numbers (67%). This figure is closely followed by a structural change (57%), change in supervisor (46%) and a change in work priorities (45%). Interestingly, we notice that employees are not overly optimistic regarding the reform experienced (average of 2,71).

Methods & Results

To examine how reform perceptions are affected by the hierarchical level of the respondent while controlling for the control variables discussed above, we use Ordinary Least Squares (OLS). Heteroskedasticity proves to be an issue (Breusch-Pagan/ Cook-Weisberg test for heteroskedasticity: $\chi^2(1)=7{,}36^{***}$). As heteroskedasticity can potentially bias results, we include robust standard errors. Moreover, the large sample size (61,274 obs.) of our dataset poses an additional challenge. With such large samples, estimations based on small-sample statistical interferences can be ineffective at best and misleading at worst. An extremely large sample will make the standard errors extremely small, so that even minuscule distances between the estimate and the null hypothesis become statistically significant (Lin, Lucas & Shmeli, 2011). To overcome this issue, we run our first model on a random sample existing of 5% or approximately 3063 observations of the initial dataset. We reiterate this process (drawing a

sample with replacement and running the OLS model) 200 times. The resulting tables include information on average values, standard deviation (SD), minimum and maximum values. The first part of the table focuses on the β's, the second part on t-values and the third and final part on the p-values. At the bottom of each table an R^2 is presented. A summary of the p-values (significance levels) across the models can be found in Table 6.

In a first step (Table 2) we test the effect of classification level on reform perception. Note that only two classification levels (managerial and strategic) are included in the table. Technical-level employees are used as a reference category. When we examine the β's (top part of the table), we notice that both are positive and that the average size of the β is much larger for strategic-level employees (0,600) compared to managerial-level employees (0,039). Before interpreting these β's we examine the p-values (bottom of the table). The p-values offer information on whether or not a β is actually statistically significant and hence not the result of random chance. Given our sample size, we accept β's with p-values below or equal to 0,05 as statistically significant and thus not the result of random chance. β's with p-values above 0,05 are consequently argued to be statistically not significant. For strategic-level employees, the average p-value equals 0,008 and for managerial-level employees 0,463. This shows that strategic level employees are more likely to have positive reform perceptions compared to employees at the technical level (the reference category). However, this cannot be said for managerial-level employees. Employees in a managerial position do not have more (or less) positive reform perceptions compared to technical-level employees (reference category). When switching the reference category whereby employees of the strategic level become the reference category, we get a β of -0,561 with a p-value of 0,013 for employees at the managerial level and a β of -0,599 with a p-value of 0,008 for employees at the technical level. To summarize and based on these results, strategic-level employees hold more positive reform perceptions compared to technical- and managerial-level employees. Between employees in managerial and

technical positions there appears to be no difference in their attitude towards organizational changes. Hence, we can claim that the employees at the strategic level are more positive compared to those at the technical level and the managerial level. This finding seems to support our hypothesis. When examining the control variables, we notice that gender and having an English speaking background also matters for one's attitude towards organizational change. Women (gender=1 if male and 2 if female) are more likely to be positive towards the results of organizational change. Secondly, we notice that people having an English speaking background are also more optimistic compared to employees who don't have such background (English speaking background; yes=0 and no=1).

We also included the question where respondents could indicate the specific types of reforms they had experienced, which allows us to explore whether certain reform types are more likely to be perceived more positively or negatively. When looking at the role of each specific type of reform, only significant effects of variations in staff levels on reform perceptions are observed. An increase in staff numbers has a strong positive effect (0,403) on reform perceptions, whereas a decrease leads to a strong negative effect (-0,344).

Please include Table 2 here

Although this finding intuitively makes sense, it is somewhat surprising that only two reforms have a significant effect on reform perceptions. Could it be that the effect of each type of reform on reform perception differs across hierarchical levels? Analyzing whether certain types of reforms only lead to certain perceptions among specific organizational groups would give an indication of the specific underlying uncertainties (or opportunities) that are connected by respondents to certain reform types. In order to further explore this, we re-ran our analyses for each classification level separately. Table 3 includes the effect of different types of reform experienced for APS 1-6 level employees (technical), Table 4 for Executive Level employees

(managerial) and Table 5 for SES level employees (strategic). Table 6, lastly, brings together the different results across organizational levels in a summary table.

Please include Table 3,4,5 & 6 here

Looking at the results for the perceptions on different types of reforms across organizational levels (Table 6), several patterns emerge (only significant effects are discussed). Some reforms types consistently lead to positive perceptions across the organization, namely: functional changes, changes in work priorities, increase in staffing numbers, change in supervisor. Two reform types consistently provoke negative perceptions: decrease in staffing numbers and the 'other' group. We observe one reform type with conflicting perceptions across organizational levels, being change in physical workplace which is considered negative by technical employees and positive by managerial employees. Some reforms only reach significant effects for members in certain levels: structural changes are perceived positively only among technical employees, and machinery-of-government changes and changes in SES leadership are only perceived negatively among managerial and strategic employees. Only one change is neutrally reacted to across organizational levels; that is relocation to a new city.

Discussion

The aim of this study was to theorize and test the implicit assumption in scholarship on reform and organizational change that change perceptions vary according to hierarchical level. Bringing together insights from management scholars and organizational psychologists, we built a theoretical argument that centered on the expectation that employees have different perceptions of reforms depending on whether they perceive the impact and controllability of said reforms as positive or negative (Jackson & Dutton, 1988; Nutt, 1984). We then argued that staff in organizations can be categorized into three distinct levels (strategic, technical,

managerial), which are characterized by distinct uncertainties in their environment, which affect their experiences with and orientation towards reforms.

This argument was empirically tested on employee census data from the APS. Providing support for our hypothesis, strategic level employees (SES classification) were significantly more positive regarding the reforms they experienced, compared to managerial level employees (Executive Level classification) and technical level employees (APS1-6). This effect is consistent with theoretical arguments that strategic level employees are more likely to see reforms as opportunities to legitimize their organization and themselves (Brunsson, 2009), and typically have more influence and control over the content and progress of reforms (Jones et al., 2008). Exercising such control is an important mechanisms for upper levels to cope with uncertainties during reforms (Armstrong-Stassen, 2005; Staw et al., 1981). Members of the technical level, in contrast, might observe the potentially dramatic negative impact of reforms on their work routines. In addition, line employees were reported to have relatively little control over reform processes which further feeds their uncertainty and negativity (Jones et al., 2008). Managerial level staff, lastly, are exposed to several ambiguities due to their in-between position, which are likely to generate their own uncertainties and, ultimately, negative reform perceptions (Giauque, 2015; Harding et al., 2014).

Our study further explored whether different reform types led to distinct effects across organizational levels. The nature of change that is encountered by employees is an important consideration (Kuipers et al., 2014). Yet only very few studies have yet been able to give insight into the role of change content (Oreg et al., 2011). The distinction between types of reforms matters because workplace changes vary in their potential impact on the (work)lives of recipients and the control recipients have over the process of these reforms. According to Van Dam (2005), workplace changes may hold both positive outcomes (e.g. job enrichment, development needs, labor market opportunities), and negative outcomes for employees (e.g.

unwanted career move, increased workload or travelling time). The nature of outcomes may well depend on employees' position in the organizational hierarchy.

We commence our discussion with the effects of reform types on reform perceptions by the technical level. Our findings demonstrate that strong expectations on reforms being perceived negatively per se by members of the technical level need to be relaxed. In fact, not taking into account the negative effect of the 'other' category, we find that only two types of reforms provoke negative effects among the technical level, whereas five types are generally perceived positively. An interpretation of the precise mechanisms that lead some reforms to have a certain effect is outside the scope and possibilities of this study. Yet a pattern seems to emerge that reform types (a) are perceived more neutrally when they occur further away in the APS (machinery of government changes, change in SES leadership); (b) generate positive perceptions when they concern more immediate changes (structural, functional or work priority changes and changes in supervisor); and (c) generate negative perceptions when they bring with them reductions in staff or changes in the physical workplace.

These findings may be explained by some of the theoretical arguments presented in this study. Previous studies have highlighted the strong uncertainty- and stress-generating effects of staff reductions, which typically target technical and managerial functions (Bordia et al., 2004; Jones et al., 2008; Luthans & Sommer, 2016). Changes in the psychical workplace can be theorized to reflect the negative impact of changing work routines (Lazarus & Folkman, 1984). It is worth noting though that managerial staff report positive perceptions concerning physical workplace changes, which may be explained by their positive impact on their career perspective. Our operationalization focuses on reforms that occurred in the last year. Possibly, the strong negative effects of psychical workplace changes for technical level staff wear off as time passes and new routines settle in.

The former finding on positive effects of a series of more immediate workplace changes offer some relief to change strategists and managers who might expect to face employee resistance. Perhaps these findings tentatively point at a need to reappreciate the role of change recipients during reform, which has long been seen as "resisters" (Piderit, 2000). Changes that offer the potential to lead to positive outcomes for employees - e.g. skill development – are likely to be positively perceived as opportunities (Gagné et al., 2000). Our findings indicate that reforms in the more immediate workplace environment are more likely to be seen as such. Compared to reforms of a broader scale – such as machinery of government changes – locally oriented reforms have a tendency to occur in small, orderly steps and with democratic leadership that includes employee consultation (Jones et al., 2008). It is in such local contexts that participation, information exchange and trust may have a particularly positive affect on change attitudes (Van Dam et al., 2008). In contrast, radical reforms typically involve top-down enforced sudden and substantial changes to organizational processes, routines and identities (Greenwood & Hinings, 1996)

Turning next to our discussion of the relations between reform types and strategic and managerial staff, our findings also demonstrate the need to nuance expectations of a universal positive relation between upper levels and positive reform perceptions. Some reforms that are perceived positively by the technical level are perceived more neutrally as one goes up the organizational hierarchy (structural changes), and others are even perceived negatively in contrast to lower levels (machine of government changes, change in SES leadership).

These findings are more difficult to interpret. They seem to contradict our theoretical expectations that higher organizational levels understand the legitimizing role of machinery of government reforms (Brunsson, 2009; Parsons, 1960; Thompson, 1967). They also seem to contradict our earlier cautious interpretation that changes are perceived more positive as they occur closer to the immediate workplace (at least among technical

employees). For instance, where line employees seem to have positive perceptions of a change of supervisor at their level, strategic and managerial staff perceive a change of supervisor at their level more negatively. Again, an interpretation of the different psychological mechanisms triggered by different reform types is outside the scope of this study. Based on the theories and other findings discussed in this paper, we might speculate that new supervisors might initiate other workplace changes that are well-appreciated by technical level staff (functional changes, new priorities), whereas new strategic leadership may set an organization on a new course entirely, which creates more fundamental uncertainties among employees.

Conclusion

The aim of this study was to theorize and test differences in reform perceptions across hierarchical levels in public organizations. The findings demonstrate the often assumed, yet scarcely tested, organizational heterogeneity when it comes to reform perceptions. Furthermore, our follow-up analyses on how reform perceptions of different groups of employees might vary across distinct reform types provide additional insights into the characteristics of reforms that may provoke skepticism.

Against the background of a continuing lack of studies on the factors that influence reform success (Kuipers et al., 2014), the main academic contribution consists in empirically confirming the intergroup nature of reform perceptions on a large sample of civil servants in the APS. While our approach is limited in terms of directly testing the presumed mechanisms, our findings provide a fruitful starting point for future qualitative-oriented research to unravel why certain types of reforms are received by certain groups in organization in specific ways. The observation that respondents may react very differently when asked whether they

appreciate reforms in general vs. specific reform types/experiences offers additional insight into the psychology of reform acceptance.

Like most studies, ours is not without its caveats. First, although our data are unique in offering an insight in reforms experienced and reform perceptions for an extremely large sample of civil servants, it still remains a cross-sectional analysis. Cross-sectional analyses are particularly sensitive to common method bias (CMB), using solely 'objective' data we have tried to minimize the likelihood of having such bias. Yet, subsequent studies should address this issue through panel-data structures, thereby ruling out CMB and validating the results presented here. Moreover, longitudinal data would allow analyzing how different organizational levels progress through different stages of organizational reform. Second, the strength of the study also proves to be its major limitation. Only entities from the APS have been examined, leading to a strong homogeneity across organizations but also resulting in the fact that generalizing findings across different contexts is not possible. Third, our study did not focus on potential interrelations between the different types of reforms. Individual reforms do often not happen in isolation, but are pursued in response to – or together with – other reforms. These repetitive reform experiences might bring about distinct psychological effects related to perceived intensity of reforms (cf. Kleizen et al., 2018; Moore et al., 2004) that merit further research.

Our findings have important practical implications in times when governments' urge to reform seems far from over. Given that employees' experience and support of reforms are critical antecedents of reform success, understanding the intergroup nature of reform perceptions is important. The results highlight the need for strategists and implementers of reforms to understand the needs and uncertainties of different organizational groups. Strategists may be more concerned with the legitimizing role of reforms, managers with intra-organization and departmental issues, and technical level staff may focus on their own job routines. Those active in shaping and implementing reforms may apply tailor-made strategies to meet the needs of

different groups of employees, thus considering the intergroup nature of change. In addition, our results provide tentative support for the requirement of open and honest communication, and involving employees in reform processes in order to mitigate existing uncertainties.

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Tables

Table 1 Descriptive statistics (N=61,274)

Variable	Mean	SD.		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Reform perception	2,71	1,18	(1)	1,000																								
Position- technical	0,69	0,46	(2)	0,001	1,000																							
Position- managerial	0,29	0,45	(3)	-0,021	-0,951	1,000																						
Position- strategic	0,02	0,14	(4)	0,063	-0,220	-0,093	1,000																					
Agency Cluster	4,14	1,25	(5)	-0,011	0,158	-0,140	-0,067	1,000																				
Agency Size	5,66	1,03	(6)	-0,006	0,049	-0,046	-0,014	0,525	1,000																			
Gender	1,59	0,49	(7)	0,084	0,133	-0,121	-0,047	-0,019	-0,015	1,000																		
Age	2,39	0,77	(8)	-0,047	-0,163	0,140	0,081	0,100	0,025	-0,073	1,000																	
Education	2,38	0,87	(9)	-0,017	-0,280	0,260	0,083	-0,172	-0,073	-0,115	-0,083	1,000																
Fulltime	0,87	0,34	(10)	-0,014	-0,062	0,050	0,042	0,006	-0,002	-0,233	0,023	0,051	1,000															
Experience in current classification level	2,83	1,09	(11)	-0,059	-0,035	0,036	0,000	0,169	0,103	-0,006	0,427	-0,134	-0,103	1,000														
Length of service APS	2,79	0,41	(12)	-0,036	-0,187	0,175	0,051	0,125	0,098	0,012	0,391	-0,099	-0,092	0,485	1,000													
English speaking background	1,86	0,35	(13)	-0,044	-0,046	0,036	0,032	-0,030	-0,018	0,012	-0,029	-0,127	-0,043	-0,007	0,029	1,000												
Carer responsibilities	1,71	0,45	(14)	0,006	0,061	-0,060	-0,009	-0,013	-0,011	-0,113	-0,065	-0,023	0,215	-0,104	-0,126	0,062	1,000											
Type of reform experienced																												
Change in physical workplace	0,32	0,47	(15)	0,004	-0,064	0,060	0,017	-0,051	0,052	-0,013	-0,020	0,036	0,022	-0,027	-0,003	0,004	-0,003	1,000										
Machinery of government change	0,29	0,46	(16)	-0,020	-0,070	0,058	0,042	-0,213	0,025	-0,013	0,004	0,069	0,024	-0,038	-0,013	0,021	-0,009	0,135	1,000									
Relocation	0,01	0,11	(17)	0,001	0,000	-0,002	0,008	0,009	0,014	-0,018	-0,005	0,005	0,022	-0,011	-0,006	-0,011	0,005	0,096	0,008	1,000								
Structural change	0,57	0,50	(18)	0,002	-0,156	0,142	0,053	-0,040	0,036	-0,037	-0,040	0,102	0,045	-0,044	0,018	0,028	-0,006	0,171	0,139	0,005	1,000							
Functional change	0,42	0,49	(19)	0,029	-0,072	0,059	0,046	0,013	0,029	-0,009	0,004	0,031	0,028	0,012	0,036	0,021	-0,011	0,116	0,081	0,016	0,230	1,000						
Change in work priorities	0,45	0,50	(20)	0,005	-0,045	0,037	0,030	0,041	0,054	-0,012	-0,008	0,035	0,016	0,038	0,056	0,016	-0,026	0,093	0,100	-0,001	0,158	0,348	1,000					
Decrease in staffing numbers	0,67	0,47	(21)	-0,161	-0,022	0,020	0,006	-0,019	-0,003	-0,020	0,020	0,031	0,021	0,020	0,021	0,017	-0,014	0,019	0,066	-0,009	0,067	0,081	0,122	1,000				
Increase in staffing numbers	0,10	0,30	(22)	0,147	0,033	-0,034	0,003	0,004	0,014	0,035	-0,089	-0,011	-0,007	-0,071	-0,064	0,010	0,019	0,018	-0,016	0,011	-0,025	0,023	0,019	-0,268	1,000			
Change in SES leadership	0,35	0,48	(23)	-0,020	-0,153	0,143	0,041	-0,012	0,044	-0,007	-0,009	0,089	0,032	-0,010	0,039	0,029	-0,028	0,125	0,122	0,016	0,281	0,139	0,161	0,098	-0,007	1,000		
Change in supervisor	0,46	0,50	(24)	0,020	0,035	-0,027	-0,029	0,034	0,051	0,042	-0,037	-0,011	-0,014	-0,003	0,002	0,014	-0,025	0,110	0,029	0,022	0,122	0,166	0,153	0,074	0,044	0,175	1,000	
Other type of change	0,09	0,29	(25)	-0,021	0,055	-0,051	-0,015	0,045	-0,003	0,003	0,029	-0,021	0,005	0,027	0,003	-0,011	-0,008	-0,037	-0,010	0,001	-0,093	-0,025	-0,002	-0,057	-0,007	-0,041	-0,038	1,000

Table 2 Effect on reform perception (200 replications on a 5% sample)

200 replications on 5% samples (OLS)

Variables	Mean β	SD.	Min.	Max.
Position- managerial	0,039	0,050	-0,078	0,172
Position- strategic	0,600	0,160	0,157	1,062
Agency cluster	-0,004	0,020	-0,057	0,063
Agency size	-0,004	0,024	-0,055	0,065
Gender	0,189	0,039	0,061	0,275
Age	-0,027	0,032	-0,123	0,070
Education	-0,035	0,025	-0,097	0,021
Fulltime	-0,014	0,062	-0,176	0,144
Experience in current classification level	-0,044	0,021	-0,101	0,013
Length of service APS	-0,024	0,057	-0,193	0,131
English speaking background	-0,177	0,059	-0,340	0,012
Carer responsibilities	0,028	0,046	-0,102	0,184
Change in physical workplace	-0,001	0,043	-0,120	0,124
Machinery of government change	-0,036	0,051	-0,193	0,132
Relocation	-0,016	0,203	-0,506	0,464
Structural change	0,009	0,043	-0,119	0,130
Functional change	0,084	0,044	-0,028	0,248
Change in work priorities	0,027	0,047	-0,064	0,211
Decrease in staffing numbers	-0,344	0,048	-0,453	-0,228
Increase in staffing numbers	0,403	0,068	0,200	0,566
Change in SES leadership	-0,045	0,044	-0,161	0,065
Change in supervisor	0,044	0,036	-0,048	0,153
Other type of change	-0,106	0,072	-0,313	0,054
Variables	Mean t-value	SD.	Min.	Max.
Position- managerial	0,733	0,949	-1,484	3,198
Position- strategic	4,045	1,218	1,103	7,606
Agency cluster	-0,195	0,937	-2,536	2,766
Agency size	-0,151	0,947	-2,132	2,435
Gender	4,178	0,874	1,351	6,037
Age	-0,829	0,992	-3,650	2,172
Education	-1,331	0,956	-3,515	0,792
Fulltime	-0,201	0,940	-2,707	2,214
Experience in current classification level	-1,847	0,882	-4,200	0,548
Length of service APS	-0,382	0,906	-3,170	2,181
English speaking background	-2,895	0,974	-5,755	0,188
Carer responsibilities	0,571	0,933	-2,014	3,785
Change in physical workplace	-0,014	0,918	-2,565	2,672
Machinery of government change	-0,730	1,031	-3,776	2,703
Relocation	-0,082	1,053	-2,540	2,789
Structural change	0,190	0,935	-2,536	2,862
Functional change	1,822	0,945	-0,600	5,231
Change in work priorities	0,582	1,014	-1,403	4,545
Decrease in staffing numbers	-7,337	1,023	-9,684	-4,816
Increase in staffing numbers	5,840	1,024	2,959	8,385
Change in SES leadership	-0,952	0,949	-3,370	1,400
Change in supervisor	0,991	0,829	-1,081	3,464
Other type of change	-1,356	0,919	-3,897	0,662
Variables	Mean p-value	SD.	Min.	Max.
Position- managerial	0,463	0,316	0,002	0,999
Position- strategic	0,008	0,030	0,000	0,271
Agency cluster	0,528	0,289	0,006	1,000
Agency size	0,480	0,269	0,016	1,000
Gender	0,003	0,015	0,000	0,178
Age	0,407	0,311	0,000	0,995
Education	0,286	0,288	0,001	0,996
Fulltime	0,498	0,283	0,007	0,998
Experience in current classification level	0,162	0,223	0,000	0,970
Length of service APS	0,493	0,269	0,002	0,988
English speaking background	0,035	0,088	0,000	0,851
Carer responsibilities	0,483	0,290	0,000	0,997
Change in physical workplace	0,546	0,288	0,008	0,998
Machinery of government change	0,422	0,298	0,000	0,997
Relocation	0,474	0,299	0,006	0,997
Structural change	0,522	0,278	0,005	0,999
Functional change	0,176	0,231	0,000	0,898
Change in work priorities	0,455	0,281	0,000	1,000
Decrease in staffing numbers	0,000	0,000	0,000	0,000
Increase in staffing numbers	0,000	0,000	0,000	0,003
Change in SES leadership	0,395	0,316	0,001	0,987
Change in supervisor	0,386	0,287	0,001	0,990
Other type of change	0,286	0,284	0,000	0,999
R-squared		0,056		

Table 3 Effect on reform perception (200 replications on a sample of 500 APS 1-6 level employees)

200 replications on samples of 500 APS1-6 observations (OLS)

Variables	Mean β	SD.	Min.	Max.
Agency cluster	0,010	0,001	0,006	0,015
Agency size	-0,020	0,001	-0,023	-0,015
Gender	0,146	0,003	0,136	0,153
Age	-0,014	0,003	-0,023	-0,005
Education	0,001	0,003	-0,010	0,010
Fulltime	0,027	0,006	0,010	0,041
Experience in current classification level	-0,069	0,002	-0,073	-0,063
Length of service APS	0,103	0,007	0,085	0,125
English speaking background	-0,069	0,005	-0,080	-0,055
Carer responsibilities	-0,004	0,003	-0,011	0,003
Change in physical workplace	-0,044	0,003	-0,052	-0,035
Machinery of government change	-0,028	0,003	-0,039	-0,021
Relocation	0,094	0,011	0,051	0,122
Structural change	0,063	0,004	0,053	0,075
Functional change	0,147	0,003	0,135	0,155
Change in work priorities	0,039	0,003	0,032	0,047
Decrease in staffing numbers	-0,374	0,003	-0,383	-0,365
Increase in staffing numbers	0,428	0,006	0,414	0,448
Change in SES leadership	-0,004	0,003	-0,012	0,003
Change in supervisor	0,040	0,003	0,032	0,051
Other type of change	-0,139	0,006	-0,153	-0,117
Variables	Mean t-value	SD.	Min.	Max.
Agency cluster	1,176	0,165	0,721	1,765
Agency size	-2,108	0,146	-2,499	-1,568
Gender	8,151	0,168	7,611	8,565
Age	-0,971	0,223	-1,575	-0,375
Education	0,053	0,258	-0,775	0,780
Fulltime	0,907	0,201	0,333	1,383
Experience in current classification level	-7,056	0,170	-7,455	-6,403
Length of service APS	3,301	0,223	2,738	4,009
English speaking background	-2,641	0,180	-3,083	-2,112
Carer responsibilities	-0,226	0,145	-0,591	0,160
Change in physical workplace	-2,450	0,158	-2,858	-1,947
Machinery of government change	-1,468	0,165	-2,014	-1,106
Relocation	1,209	0,146	0,661	1,560
Structural change	3,223	0,183	2,703	3,857
Functional change	7,964	0,165	7,335	8,401
Change in work priorities	2,140	0,173	1,746	2,555
Decrease in staffing numbers	-19,645	0,166	-20,115	-19,156
Increase in staffing numbers	14,418	0,213	13,863	14,972
Change in SES leadership	-0,238	0,143	-0,661	0,175
Change in supervisor	2,262	0,195	1,805	2,879
Other type of change	-3,920	0,184	-4,322	-3,320
Variables	Mean p-value	SD.	Min.	Max.
Agency cluster	0,247	0,066	0,079	0,472
Agency size	0,038	0,014	0,013	0,118
Gender	0,000	0,000	0,000	0,000
Age	0,344	0,109	0,117	0,708
Education	0,833	0,116	0,436	0,998
Fulltime	0,375	0,105	0,168	0,739
Experience in current classification level	0,000	0,000	0,000	0,000
Length of service APS	0,001	0,001	0,000	0,007
English speaking background	0,010	0,005	0,002	0,036
Carer responsibilities	0,817	0,101	0,555	1,000
Change in physical workplace	0,016	0,007	0,005	0,053
Machinery of government change	0,149	0,044	0,045	0,270
Relocation	0,233	0,058	0,120	0,509
Structural change	0,002	0,001	0,000	0,007
Functional change	0,000	0,000	0,000	0,000
Change in work priorities	0,036	0,015	0,011	0,082
Decrease in staffing numbers	0,000	0,000	0,000	0,000
Increase in staffing numbers	0,000	0,000	0,000	0,000
Change in SES leadership	0,809	0,101	0,509	0,995
Change in supervisor	0,027	0,013	0,004	0,073
Other type of change	0,000	0,000	0,000	0,001
R-squared		0,054		

Table 4 Effect on reform perception (200 replications on a sample of 500 EL level employees)

200 replications on samples of 500 EL observations

Variables	Mean β	SD.	Min.	Max.
Agency cluster	-0,023	0,001	-0,025	-0,022
Agency size	0,012	0,001	0,010	0,014
Gender	0,193	0,001	0,189	0,196
Age	-0,005	0,001	-0,007	-0,003
Education	-0,028	0,001	-0,029	-0,026
Fulltime	-0,007	0,002	-0,011	-0,002
Experience in current classification level	-0,043	0,001	-0,044	-0,041
Length of service APS	-0,033	0,002	-0,037	-0,029
English speaking background	-0,189	0,002	-0,194	-0,184
Carer responsibilities	0,036	0,002	0,032	0,040
Change in physical workplace	0,021	0,001	0,017	0,025
Machinery of government change	-0,037	0,001	-0,041	-0,033
Relocation	-0,058	0,005	-0,069	-0,039
Structural change	0,013	0,001	0,010	0,017
Functional change	0,062	0,001	0,059	0,066
Change in work priorities	0,029	0,001	0,026	0,033
Decrease in staffing numbers	-0,324	0,001	-0,327	-0,321
Increase in staffing numbers	0,394	0,002	0,390	0,399
Change in SES leadership	-0,045	0,001	-0,049	-0,042
Change in supervisor	0,025	0,001	0,022	0,028
Other type of change	-0,095	0,002	-0,099	-0,091
Variables	Mean t-value	SD.	Min.	Max.
Agency cluster	-4,078	0,119	-4,369	-3,786
Agency size	1,669	0,126	1,380	1,985
Gender	16,113	0,108	15,774	16,348
Age	-0,584	0,104	-0,829	-0,345
Education	-4,255	0,097	-4,504	-4,015
Fulltime	-0,401	0,095	-0,667	-0,141
Experience in current classification level	-6,776	0,112	-7,075	-6,477
Length of service APS	-2,103	0,098	-2,336	-1,843
English speaking background	-12,107	0,103	-12,428	-11,812
Carer responsibilities	2,705	0,116	2,450	3,014
Change in physical workplace	1,701	0,111	1,383	2,006
Machinery of government change	-2,844	0,114	-3,159	-2,547
Relocation	-1,110	0,100	-1,323	-0,758
Structural change	1,080	0,103	0,825	1,392
Functional change	5,097	0,112	4,836	5,428
Change in work priorities	2,429	0,112	2,155	2,771
Decrease in staffing numbers	-26,482	0,099	-26,748	-26,232
Increase in staffing numbers	22,313	0,104	22,076	22,664
Change in SES leadership	-3,602	0,100	-3,901	-3,324
Change in supervisor	2,151	0,099	1,897	2,425
Other type of change	-4,777	0,088	-5,005	-4,562
Variables	Mean p-value	SD.	Min.	Max.
Agency cluster	0,000	0,000	0,000	0,000
Agency size	0,099	0,025	0,048	0,169
Gender	0,000	0,000	0,000	0,000
Age	0,562	0,069	0,408	0,731
Education	0,000	0,000	0,000	0,000
Fulltime	0,690	0,070	0,505	0,888
Experience in current classification level	0,000	0,000	0,000	0,000
Length of service APS	0,038	0,009	0,020	0,067
English speaking background	0,000	0,000	0,000	0,000
Carer responsibilities	0,008	0,003	0,003	0,015
Change in physical workplace	0,092	0,021	0,046	0,168
Machinery of government change	0,005	0,002	0,002	0,012
Relocation	0,271	0,044	0,187	0,449
Structural change	0,284	0,046	0,165	0,410
Functional change	0,000	0,000	0,000	0,000
Change in work priorities	0,017	0,005	0,006	0,032
Decrease in staffing numbers	0,000	0,000	0,000	0,000
Increase in staffing numbers	0,000	0,000	0,000	0,000
Change in SES leadership	0,000	0,000	0,000	0,001
Change in supervisor	0,033	0,008	0,016	0,059
Other type of change	0,000	0,000	0,000	0,000
R-squared		0,056		

Table 5 Effect on reform perception (200 replications on a sample of 500 SES level employees)

200 replications on a sample of 500 SES observations

Variables	Mean β	SD.	Min.	Max.
Agency cluster	-0,010	0,000	-0,011	-0,009
Agency size	0,000	0,001	-0,001	0,001
Gender	0,186	0,001	0,184	0,188
Age	-0,021	0,001	-0,023	-0,020
Education	-0,029	0,000	-0,030	-0,028
Fulltime	-0,007	0,001	-0,009	-0,005
Experience in current classification	-0,045	0,000	-0,046	-0,044
Length of service APS	-0,013	0,001	-0,015	-0,010
English speaking background	-0,173	0,001	-0,175	-0,171
Carer responsibilities	0,021	0,001	0,018	0,023
Change in physical workplace	-0,003	0,001	-0,006	0,000
Machinery of government change	-0,035	0,001	-0,038	-0,033
Relocation	-0,024	0,004	-0,034	-0,015
Structural change	0,014	0,001	0,012	0,015
Functional change	0,080	0,001	0,078	0,081
Change in work priorities	0,026	0,001	0,024	0,029
Decrease in staffing numbers	-0,337	0,001	-0,339	-0,335
Increase in staffing numbers	0,402	0,001	0,399	0,405
Change in SES leadership	-0,038	0,001	-0,041	-0,036
Change in supervisor	0,043	0,001	0,041	0,045
Other type of change	-0,098	0,001	-0,101	-0,096
Variables	Mean t-value	SD.	Min.	Max.
Agency cluster	-2,092	0,082	-2,302	-1,873
Agency size	0,033	0,092	-0,196	0,249
Gender	18,324	0,077	18,130	18,528
Age	-2,993	0,071	-3,200	-2,775
Education	-5,079	0,057	-5,227	-4,937
Fulltime	-0,455	0,046	-0,603	-0,328
Experience in current classification	-8,313	0,071	-8,485	-8,164
Length of service APS	-0,916	0,060	-1,059	-0,735
English speaking background	-12,705	0,060	-12,890	-12,556
Carer responsibilities	1,856	0,088	1,622	2,079
Change in physical workplace	-0,286	0,086	-0,536	-0,025
Machinery of government change	-3,195	0,079	-3,379	-2,961
Relocation	-0,538	0,085	-0,756	-0,336
Structural change	1,322	0,062	1,141	1,467
Functional change	7,707	0,074	7,507	7,875
Change in work priorities	2,563	0,081	2,309	2,829
Decrease in staffing numbers	-32,106	0,076	-32,267	-31,890
Increase in staffing numbers	25,812	0,072	25,637	26,010
Change in SES leadership	-3,658	0,080	-3,868	-3,451
Change in supervisor	4,352	0,076	4,112	4,531
Other type of change	-5,572	0,056	-5,714	-5,432
Variables	Mean p-value	SD.	Min.	Max.
Agency cluster	0,038	0,008	0,022	0,062
Agency size	0,938	0,046	0,803	1,000
Gender	0,000	0,000	0,000	0,000
Age	0,003	0,001	0,002	0,006
Education	0,000	0,000	0,000	0,000
Fulltime	0,650	0,033	0,547	0,743
Experience in current classification	0,000	0,000	0,000	0,000
Length of service APS	0,362	0,031	0,291	0,463
English speaking background	0,000	0,000	0,000	0,000
Carer responsibilities	0,066	0,013	0,039	0,106
Change in physical workplace	0,776	0,065	0,592	0,980
Machinery of government change	0,002	0,000	0,001	0,003
Relocation	0,593	0,059	0,451	0,737
Structural change	0,188	0,021	0,144	0,255
Functional change	0,000	0,000	0,000	0,000
Change in work priorities	0,011	0,003	0,005	0,022
Decrease in staffing numbers	0,000	0,000	0,000	0,000
Increase in staffing numbers	0,000	0,000	0,000	0,000
Change in SES leadership	0,000	0,000	0,000	0,001
Change in supervisor	0,000	0,000	0,000	0,000
Other type of change	0,000	0,000	0,000	0,000
R-squared		0,099		

Table 6 Summarized results

Type of reform	Technical	Managerial	Strategic
Change in physical workplace	-0,044**	0,021*	-0,003
Machinery of government change	-0,028	-0,037***	-0,035***
Relocation	0,094	-0,058	-0,024
Structural change	0,063***	0,013	0,014
Functional change	0,147***	0,062***	0,08***
Change in work priorities	0,039**	0,029**	0,026**
Decrease in staffing numbers	-0,374***	-0,324***	-0,337***
Increase in staffing numbers	0,428***	0,394***	0,402***
Change in SES leadership	-0,004	-0,045***	-0,038***
Change in supervisor	0,04**	0,025**	0,043***
Other type of change	-0,139***	-0,095***	-0,098***

*p<0,1. **p<0,05. ***p<0,01. (based on averages)