

HIGH INVOLVEMENT WORK IN THE NEW ZEALAND PUBLIC SERVICE

BY

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ABSTRACT

The aim of this research is to investigate the relationship between high involvement work practices (HIWP) and employee outcomes, such as job satisfaction and organisational commitment, in the core New Zealand public service. It also investigates whether certain demographic factors may influence this relationship and proposes a structural model to test this.

Information about HIWP and employee outcomes was originally gathered as part of the 2013 Workplace Dynamics Survey conducted by the New Zealand Public Service Association (PSA) and Victoria University of Wellington (Plimmer et al., 2013). Participants, all of whom were PSA members, were asked a variety of questions about their work, workplace and themselves. For the purposes of this current study, the sample was then limited to only those members of the core public sector who reported that they had no managerial responsibilities, which comprised 1,665 unique responses. The data were then analysed in order to generate descriptive statistics and trends regarding opinions, and to conduct inferential analysis. This included exploratory factor analysis to confirm the principal factors, confirmatory factor analysis to test the measurement of the constructs, and structural equation modelling to explicate the relationship between HIWP and employee outcomes. Moderating factors such as age, gender, and level of educational attainment were then introduced to the proposed structural model.

The model suggests that HIWP, as measured by items associated with power, information, rewards, and knowledge (*PIRK*), have a positive effect on employees' reported job satisfaction and organisational commitment. The model tests the influence of a second-order latent variable that describes the *PIRK* attributes working collectively, as well as a second-order latent variable, labelled *Passion*, for employee outcomes, based on the work of Vandenberg, Richardson and Eastman (1999), and Langford (2009), respectively.

The findings of this study largely support the relationships proposed in the literature on HIWP, which was used to develop the theoretical model. It finds that employees reporting higher *PIRK* also experience higher job satisfaction and organisational commitment. It also suggests that age and level of educational attainment individually have some effect on the *PIRK-Passion* relationship. While gender did not affect this particular causal relationship, the model was different in some respects for men and women, particularly with respect to the effect of length of time spent working for a particular employer.

This study contributes to theoretical and practical knowledge by providing evidence of the influence of high involvement practices for people management in the New Zealand public service on employee

outcomes, an under-researched area. It also highlights the need for public sector managers and HR professionals to be aware of the different experiences of different demographic groups. This research makes recommendations for further research, including in the data-gathering stage, as well as suggestions for practitioners.

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CHAPTER 1 INTRODUCTION

Research questions

1. What is the impact of human resource practices associated with power, information, rewards and knowledge on the employee outcomes of organisational commitment and job satisfaction in the New Zealand public service?
2. Is this impact moderated by gender, age, or level of education?

Rationale for this study

High involvement, or high performance, work systems and practices are not new. Since at least the 1930s, human resources and management professionals have recognised that involving workers in the direction of their organisation can have a positive influence on morale and ultimately on organisational performance. Understanding this relationship has been of high interest to research. However, the majority of high involvement research resides with the private sector.

There is a need for further study of the effects of such processes on employee outcomes in the public service given how enthusiastically New Zealand adopted private sector processes in the public sector. Through political and economic reforms in the late twentieth and early twenty-first centuries, the provision of public services has become increasingly subject to ways of doing business that originated and continue to be practiced in private industry. This includes both expectations around performance and ways of managing people. As the State Services Commission (SSC) notes, “the State Services’ most valuable asset is the people” (SSC, 2013).

This study draws upon data from a large-scale survey of members of the New Zealand Public Service Association (PSA) conducted in April 2013 (Plimmer et al., 2013). The original survey found that public sector workers in New Zealand are generally both hardworking, motivated and committed to making a difference, notwithstanding that they often work under considerable pressure and are faced with weak systems and processes. Although they generally feel they have adequate levels of decision-making power as well as moderate information and knowledge to make decisions, they perceive a lack of connection between performance and rewards or acknowledgement.

This study furthers that research, although differs in several significant ways. It examines in more detail the experiences of *power, information, rewards* and *knowledge* (known collectively as *PIRK*) and their links to employee outcomes, specifically *job satisfaction* and *organisational commitment*. This study tests the strength of these links, as well as possible effects of certain demographic variables. It focuses specifically on those who work in the core public sector (the public service) and who do not have people management responsibilities.

Objectives

The focus of this study is to:

1. Test the effect of high involvement work practices (HIWP) on employee outcomes in the specific context of the New Zealand public service;
2. Test whether age, gender, or education level have an effect on this relationship for this group;
3. Add to the body of knowledge about human resource management in the New Zealand public service; and
4. Apply structural equation modelling to the development of a model that describes HIWP, employee outcomes and moderating factors and that may be generalisable to other contexts.

Overview of this study

Chapter 1 provides an introduction to this study. The chapter reviews the background of the issue and focuses on high involvement work practices and their applicability to the New Zealand public service. The chapter also presents the research questions and objectives, and introduces the original survey from which the data for this study are derived.

Chapter 2 examines the relevant literature that provided the foundation for this study. This begins with some of the history of high involvement, issues around definition and measurement of the key concepts, its application in different sectors, and introduces the context in which this particular study is placed.

Chapter 3 describes the research design used in this study. The rationale for the design is outlined first, followed by data collection, measures, and the participants. This chapter includes discussion on decisions taken to limit the scope of the sample.

Chapter 4 details the hypotheses tested and methods undertaken, specifically factor analyses and structural equation modelling.

Chapter 5 describes the results of tests conducted on relationships between the dependent and independent variables, and the inclusion of higher-order latent variables, as well as the effects of introducing certain demographic factors as moderating variables.

Chapter 6 examines the findings, assesses them against research described in the literature, and re-visits the research questions. It also discusses the generalisability of the findings and limitations of the study, including some problems regarding measuring job satisfaction.

Chapter 7 discusses this study's contributions, and closes with some recommendations for future research.

CHAPTER 2 HIGH INVOLVEMENT WORK: A LITERATURE REVIEW

Introduction

The aims of most organisations may be described as getting more out of resources in order to increase financial performance (Ichniowski, 1990), gain competitive advantage (Barney, 1991), and enhance productivity growth (Wood, de Menezes & Lasaosa, 2001). By taking the resource-based view that the greatest resource any organisation has at its disposal is its personnel (Barney, 1991), much literature has been dedicated to examining practices that can harness the potential of an organisation's workforce. For example, Huselid (1995) found that, by investing in particular human resource management (HRM) practices, businesses could increase productivity.

Where some of the complexity lies, however, is understanding how business practices actually produce changes in employee behaviour, how this behaviour then impacts on organisational effectiveness and productivity, and the possible outcomes for employees. While the link between practices and outcomes is not well understood, “unlocking” this “black box” (Wadhwa, 2012) appears to be highly desirable. While some researchers have focused on the inputs (e.g. New Zealand Productivity Commission, 2015), others have explored the outputs and outcomes (e.g. Appelbaum et al., 2001). Some have considered both, and still others (e.g. Boxall & Macky, 2010) have concentrated on worker responses and outcomes as important mediating factors in this causal chain.

In the face of the pursuit of greater productivity, how can public service workplaces work towards the PSA strategic goal of providing “good jobs and improved services in a high trust, high performance workplace culture” (PSA, 2012)? This study delves down into the elements of this question that explore the links between high involvement practices and employee outcomes for this large group of workers, particularly feelings of organisational commitment and job satisfaction, and investigates possible moderating variables.

This chapter addresses some of the key debates surrounding HRM practices and employee outcomes by looking at the development of thinking around the links between HRM, workers and organisational outcomes, practices across different industries, and national, social and cultural influences.

History of high involvement

This desire to increase performance and productivity through the improved use of human resources is not new. The scientific management theories developed by Frederick Taylor in the early twentieth century, and subsequently implemented particularly vigorously in the manufacturing sector, centralised decision-making and problem-solving with managers. It revolutionised production work (Boxall & Macky, 2009), as workers' energies could then be more efficiently focused on tasks

appropriate to their personal capabilities and strengths. Around the time that Taylor was developing his theory, Henry Ford was coming to similar conclusions, noting that the time required to produce a car was inhibiting Ford's abilities to stimulate and satisfy a growing market. These processes later spread much wider than the automotive industry, with many companies subsequently applying such systems, with precisely defined jobs and work processes (Hounshell, 1988).

Lepak and Snell (2007) observe, however, that such systems discourage employee discretion and have at their heart the pursuit of labour productivity at the lowest possible cost, reducing workers' value to primarily the economic. The Human Relations School, conceived of in the 1930s out of the well-known Hawthorne experiments conducted by Elton Mayo and Fritz Roethlisberger, provided an alternative. By supporting the psychological and social needs of workers, particularly in group and organisational structures, organisations could improve productivity by motivating workers to expend discretionary effort in the interests of the company (Kaufman, 2007). Furthermore, organisations that recognise that employees may in fact be the most knowledgeable about how to perform their jobs could utilise the skills and abilities employees already had (Boxall & Macky, 2009). This should theoretically satisfy workers' higher level needs, such as that for esteem through recognition.

Cappelli and Neumark (2001) argue, however, that changes following Roethlisberger's subsequent work never actually resulted in high employee involvement, nor did it reform the Taylorist scientific management principles. Instead, cynical employers create a façade of interest in employee wellbeing, while playing on individual and private human needs in order to generate corporate gains. Furthermore, it has been suggested that the use of management practices inviting workers to expend discretionary effort to improve organisational performance may in fact lead to negative outcomes for workers, particularly work intensification (e.g. Macky & Boxall, 2008; Ramsay, Scholarios & Harley, 2000). Some of the new work practices may have also tread a fine line with essentially a modern take on Fordism or "neo-Fordism" (Sparham & Sung, 2007). Yet, others argue that improving workers' autonomy over their work can benefit both organisations and workers, such as through reduced stress in white collar jobs (Karasek, 1990), while jobs that rate low in challenge and autonomy tend to increase frustration and reduce motivation (Desmond & Plimmer, 2014).

Despite misgivings from some quarters, the move towards new work systems continued through the twentieth century, supported by technological and industrial changes that were altering how and where humans were required in work processes. Technology was becoming more capable of taking over rote tasks particularly in manufacturing roles, and more countries were becoming capable of developing mass production industries. Piore and Sabel observed in 1984 a significant movement away from mass production and towards an emphasis on flexible production and niche markets. This

“second industrial divide” in the Western world would necessitate a parallel shift in the nature of work and employment relations (Kochan, Katz, & McKersie, 1984). The 1990 report *“America’s Choice: high skills or low wages!”* produced by the US National Commission on the Skills of The American Work Force highlighted the concerns of traditional manufacturing superpowers, particularly the US, that they were losing their competitive edge after enjoying significant economic expansion after the Second World War. Noting that the world now wanted “quality, variety and responsiveness” (p. 2), the report emphasised the importance of work systems that would give workers more responsibility and authority to make decisions on how work should be organised. The report was not, however, universally praised, subsequently attracting criticism (e.g. Cappelli & Neumark, 2001) that it had popularised the use, and potentially the over-use, of the term “high-performance work practices”, which could imply the existence of an empirically-proven set of practices that would somehow guarantee superior performance.

A few years before *America’s Choice*, US academic Edward Lawler had also acknowledged the major economic moves towards services and jobs that focused on “words, symbols and numbers” (Lawler, 1986, p. 15) in his now classic work on high involvement work practices (HIWP). Successful “participative programs” in his study were providing more authority to employees to participate in important work decisions and activities, thus potentially finding better ways of overcoming problems in production and consequently achieving organisational goals that might not otherwise be achieved. It should be noted, though, that Lawler’s work provided little detail on how HIWP could exert these influences (Vandenberg, Richardson & Eastman, 1999).

Lawler also emphasised the need for management approaches to take into account the social, economic and market segment in which the organisation was operating, as well as for willingness to modify approaches over time (p. 12). A nuanced understanding of the complex relationship between participation and motivation was also important. This level of insight has not always been borne out in other works. Macky and Boxall (2008) argue that some lists of “best practices” lack an internal coherency, and MacDuffie (1995) observes that HR practices are often studied in isolation, without reference to their interdependencies with other practices or to the wider organisational context.

Although not the first to link these concepts, Lawler set the stage for more recent explorations of HIWP. Those studies emphasise the importance of four key attributes of HIWP (based on Vandenberg et al., 1999), whereby employees obtain:

- The *power* to act and make decisions about work in all its aspects;
- *information* about processes, quality, customer feedback, event and business results;
- *rewards* tied to business results and growth in capability and contribution; and

- *knowledge* of the work, the business, and the total work system, often increased through skills growth.

At its heart, Lawler's high involvement management theory states that the extent to which workers gain these attributes (known collectively as *PIRK*) will influence their level of participation and involvement, and in turn, support organisational effectiveness. These factors must exist in concert with each other for HIWP to have an overall positive effect (Lawler, 1986).

Many studies have subsequently supported and built on these ideas. MacDuffie (1995), for example, conducted a large-scale study of the international automotive industry, concluding that innovative human resource practices such as "high-commitment management" have a positive effect on economic performance, particularly when such practices are bundled together and integrated with flexible production structures. Similarly, Huselid (1995) suggests that synergies between practices can have a negative effect on turnover and positive effects on financial performance and productivity.

Constructs and model

Building on Lawler's work, Vandenberg et al. (1999) developed a model that sought to explore causal relations between HIWP and organisational performance, both directly and indirectly through the moderating influence of employee outcomes.

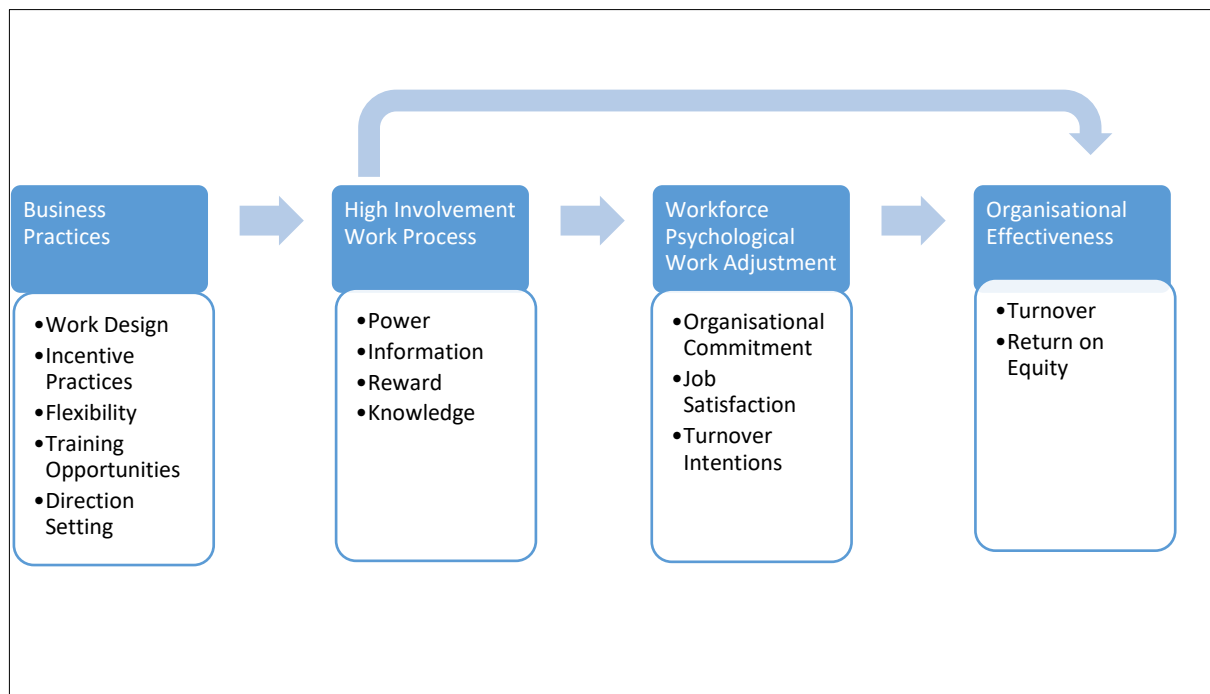


Figure 1: Conceptual model of the impact of high involvement work processes on organizational effectiveness (based on Vandenberg et al., 1999)

Vandenberg et al.'s work provided some of the clearest descriptions of the variables and relationships within the field at that time. They saw the application of the four *PIRK* attributes of HIWP collectively

exerting an influence on organisational effectiveness through two paths. Firstly, through a “cognitive” pathway, skills important for achieving organisational goals can be developed and effectively utilised by the organisation. Secondly, by way of a “motivational” pathway¹, which influences workers’ affective reactions by satisfying higher-order needs, which in turn encourages the expenditure of discretionary effort towards the attainment of organisational goals and reduces turnover (Hom & Griffeth, 1995). That is, given opportunities to provide input into the way their work is done, to experience greater autonomy, and to enhance their work-related knowledge and skills, workers are more inclined to pursue organisational goals.

Like Lawler (1986) and others (e.g. MacDuffie, 1995; Tamkin, 2004), Vandenberg et al. emphasised the need to consider practices that mutually reinforce each other, which can have a positive impact on organisation-level outcomes. On the other hand, per Lawler (1986, p. 42), “power without knowledge, information and rewards is likely to lead to poor decisions”. Similarly, Mostafa, Gould-Williams and Bottomley (2015) argue for a holistic and nuanced view of the *PIRK* attributes, noting that focusing on one particular HR practice, rather than a collective system, may weaken the desired outcomes.

Job satisfaction is often framed in terms of affective reactions associated with the employee’s relationship with the employer organisation, although it can also be related to an employee’s feelings about their particular job (e.g. Plimmer, Cantal & Qumseya, 2017). It may manifest as happiness, contentment and pleasure (Bakker, 2015). Applying social exchange theory, Organ (1977) sees the employee providing performance as an appropriate exchange commodity for job satisfaction, akin to ideas around the psychological contract between employer and employee regarding the reciprocal promises and obligations implicit in the employment relationship (Guest, 2007).

This exchange is not always perfect, however, nor does it necessarily guarantee organisational success. Lawler (1986) observes that job satisfaction is largely based on an individual’s prior positive experiences in the workplace, and not necessarily linked to a promise of future performance. Those who remain with their organisation may do so because it is expedient to maintain the relationship, rather than because they are good performers. Bryson et al. (2014) suggest that those with low expectations of their job may experience higher job satisfaction, because it is simply easier to meet their expectations. Further complicating matters, job satisfaction has been known to correlate with life satisfaction (Warr, Cook & Wall, 1979), which suggests that some people may be more inclined to job satisfaction than others due to influences other than the characteristics of their job or organisation.

¹ The terms cognitive and motivational in this context are derived from Riordan and Vandenberg (in press).

Organisational commitment is also subject to differing views and measures (Allen & Meyer, 1990). A number of studies focus on employee perceptions of their efforts to contribute to organisational goals. Phipps, Prieto and Ndinguri (2013), for example, note the important characteristic of an employee's belief and acceptance of organisational goals, as well as her willingness to exert effort to support them. Others contemplate the reciprocal commitment involved in the psychological contract between employee and organisation (e.g. MacDuffie, 1995; Mostafa et al., 2015). Much of what is considered to be organisational commitment describes affective commitment – that is, an emotional attachment an individual has for an organisation, connected to a sense of identity and membership (Allen & Meyer, 1990)

An employee's demonstration of organisational commitment, including deciding to stay with their organisation, may be for reasons other than affective reactions. Instead, Teh and Sun (2012) propose that organisational commitment is an individual's decision to remain with an organisation after assessing the costs of leaving, that is, continuance commitment. Furthermore, using turnover to measure organisational commitment can be problematic, as turnover may have a variety of antecedents separate from a lack of psychological work adjustment, such as the presence of a union or compensation level (Huselid, 1995). Normative commitment, that is, a sense of obligation to remain (Allen & Meyer, 1990), also reveals the pitfalls of using turnover as a measure of commitment: low turnover may simply indicate that employees are afraid to leave rather than are actively wanting to stay.

Job satisfaction and commitment are sometimes viewed as concomitant outcomes. For example, Langford (2009) proposes a higher-order factor he labels 'passion', which includes both of these employee outcomes. It should be noted that passion as conceived by Langford (and applied in this thesis) differs from passion described in the psychological literature, which constructs it as an inclination towards activities, people or objects to which one commits energy and time, and from which a sense of identity may be derived (e.g. Jowett, Lafrenière & Vallerand, 2013). Alternatively, Locke and Latham's (1990) model of the "high-performance cycle" positioned job satisfaction as an antecedent to organisational commitment and then performance, if actors are provided with the right incentives (i.e. motivation) to achieve performance goals.

The concept of employee motivation is often an important element in discussions about the influence of high involvement on organisational performance through employee reactions. Wright (2004) defines motivation at work as "direction, intensity, and persistence of work-related behaviors desired by the organisation or its representatives" (p. 64). Organisations that can positively influence it should experience greater competitive advantage (Guthrie, 2001), high productivity (MacLeod & Clarke,

2009), and improved customer service (Lyons, Duxbury & Higgins, 2006). An absence of employee motivation, on the other hand, can lead to organisational outcomes such as poorer quality work and reduced application of effort (Plimmer et al., 2013).

However, researchers recognise difficulties in defining and studying the concept of work motivation (e.g. Wright, 2004; Rainey, 1993), even while it is a frequent topic of discussion within the field of psychology (Rousseau, 1997). Touré-Tillery and Fishbach (2014) point out that as a psychological construct, motivation cannot be observed or recorded directly, and this presents measurement challenges². Researchers must also decide the type of motivation they are studying (Touré-Tillery & Fishbach, 2014), and definitions may also differ (e.g. intrinsic versus extrinsic, 'job' versus 'work' motivation), making comparisons between studies difficult. Others raise the issue of motivation but are light on details or analysis. Vandenberg et al. (1999) treat motivation in a somewhat abstract sense, describing the motivational pathway between HIWP and outcomes, as well as noting that "HIWP are expected to lead to...stronger employee motivation..." (p. 301), but not actually measuring a distinct concept of motivation.

One other weakness in Vandenberg et al.'s (1999) model is its rather sparse description of organisational effectiveness, settling only on two measures by way of turnover and return on equity (ROE). ROE, for instance, can be a problematic measure of organisational success, particularly for public services (Holt & Manning, 2014). As discussed earlier, influences outside of employee outcomes may affect turnover, and concentrating on organisational outcomes as an assessment of the value of high-involvement or high-performance work practices can also be problematic (Cappelli & Neumark, 2001).

Problems with terminology

A problem common – and only sometimes acknowledged – in the literature is the variety of terms used to describe human resource management practices aimed at affecting organisational performance via their effects on workers. Indeed, many researchers and authors raise this issue (e.g. Butler et al. 2004; Cappelli & Neumark, 2001; Tamkin, 2004). The distinction between employment and work practices is also important, which MacDuffie (1995) observes are different but mutually reinforcing. Others take a broader view on moves to new forms of work. Bélanger, Giles & Murray (2002), for example, describe the changes as occurring across production management, work

² It was found during analysis for this study that no reliable measure or scale related to motivation could be derived from the original PSA survey, which had included several questions regarding work motivation. This may, in fact, be a consequence of the known association between satisfaction and commitment, on the one hand, and motivation, on the other.

organisation and employment relations. This variety of perspectives adds to the argument that the concept of high performance work systems (HPWS) often lacks a common usage framework.

While some appear to employ these concepts interchangeably (e.g. Ryan, 2008; Cappelli & Neumark, 2001), New Zealand academics Boxall and Macky (2009) explore the nuanced differences in meaning and usage between the terms HPWS, HIWP, and high commitment management (HCM). Their primary criticism is that the terminology does not suggest *how* the bundle of practices associated with HPWS, for instance, can result in desired performance outcomes. Like Tamkin (2004) and Cappelli and Neumark (2001), Boxall and Macky argue that the use of the term “high performance” without further elaboration assumes a positive relationship between an unspecified set of practices and performance. A lack of regard for specific context may also render discussion about HPWS unsound.

In addition, while not disregarding the usefulness of the concept of HCM, Boxall and Macky (2009) note that it is not necessarily synonymous with HIWP. HCM may exist concurrently with HIWP, but it may also encourage employee commitment through the use of initiatives that are largely employment-related, such as performance pay or job security, rather than by changing the fundamental structure and scope of how a job is practiced. Boxall and Macky also contend that studies of HIWP should examine *how* certain practices can affect outcomes, as well as remaining cognisant of the context, such as the specific industry. This is a particularly important distinction for firms in traditionally high-wage, industrialised countries, which, in the face of competition from emerging economies, must now seek more sophisticated and bespoke means of enhancing their competitive advantage.

Descriptions of what practices could comprise HIWP and their possible outcomes are many and varied, and there is unlikely to be a single definitive list (Boxall & Macky, 2010; Ryan, 2008). Practices may include changes to production management, work organisation, and employment relations (Bélanger, et al., 2002). More specifically, this could encompass better intra-organisational communication, especially that which supports employee voice (Ryan, 2008), decentralised devolved decision-making to those in frontline positions (Tamkin, 2004), training programs focusing on the latest processes in a relevant field (Phipps et al., 2013), or monetary rewards or recognition programmes (Grawitch, Gottschalk, Munz & Dietrich, 2006).

Many authors, though, warn of the pitfalls of looking at either isolated or too many practices. These include a lack of regard for context (Boxall & Macky, 2010), the fact that no single practice is likely to have a significant impact on organisation-wide outcomes (Ledford & Lawler, 1994), and excessive prescriptiveness and loss of precision of conceptual models (Vandenberg et al, 1999). What ties such practices together, nevertheless, is that, when considered in conjunction with one another, they are

generally found to have a positive influence on employee outcomes and organisational performance (e.g. Boxall & Macky, 2009).

Adoption of HIWP

Despite the purported benefits, the majority of workplaces do not adopt HIWP to a significant extent (Tamkin, 2004; Gahan, Robin, Butar, Evans, & Harley, 2015). Employers might choose not to implement them because developing and implementing large-scale organisational changes can incur significant costs (Boxall & Macky, 2009; Cappelli & Neumark, 2001), as well as consume a good deal of time (Arrowsmith, 2010). Furthermore, sustained support from across the whole organisation is often lacking (Kim & Kang, 2013). Nevertheless, employee turnover brings costs (Hom & Griffeth, 1995) such as those associated with recruitment to replace staff, downtime while without a replacement, training, detrimental effects on morale (Vandenberg et al., 1999), and loss of institutional knowledge (SSC, 2013).

Some organisations may not factor in the potential cost of turnover at all, some may consider that the cost of implementing HIWP will outweigh the benefits, and some may find there is already a high investment in the status quo (Coats, 2016). Mayhew and Neely (2006) note that HIWP have a weaker chance of successful implementation in workplaces where competition is still largely influenced by cost reduction. Instead, many may choose to implement a selection of practices, as Boxall and Macky (2010) found in their study of New Zealand worker experiences. While this approach may reduce some costs, Gill and Meyer (2013) question why organisations would insist on taking this approach in the face of evidence of the increased effectiveness of the implementation of practices as a system.

Resistance for reasons other than cost may also hinder or prevent adoption. In his study of high performance work practices at New Zealand Post, Arrowsmith (2010) observed resistance in the face of new and increased expectations. Employers may also find that if workers perceive a violation of trust in the HIWP relationship, this trust will quickly be replaced with employee apathy, if not resistance, which will likely lead to disillusionment and limitations on the durability of HIWP programmes (Godard, 2004). Reasons for resistance by managers to the implementation of HIWP may include perceived threats to their hierarchical position and decision-making powers through the devolution of power (Gill & Meyer, 2013).

Productivity & people

Many authors have chosen to focus on the performance or productivity outcomes of HIWP, particularly economic (Godard, 2004). This is not wholly unreasonable: as discussed earlier, developing and implementing large-scale organisational changes such as these can be accompanied

by significant costs and the requirement of increased commitment. Organisations therefore need to be confident that the investment will be worthwhile.

However, too much emphasis on organisational outcomes, particularly productivity, may ignore or downplay the role of, and effects on, workers. An excessively instrumental view of performance portrays the organisation's employees primarily as a means to an end (e.g., Butler et al.'s *Exploitation Model of High Performance Management*, 2004), and does not appreciate the dynamic and often idiosyncratic nature of social exchange relations in the workplace (Mostafa et al., 2015). Furthermore, as Butler et al. (2004) point out, employees' capacity and willingness to act may moderate the relationship between practices and organisational outcomes, a role that Boxall and Macky (2007) observe as being under-researched. It should thus be acknowledged that, without workers' inclination and ability to expend discretionary effort, an organisation is unlikely to see improved performance.

Even if workers do expend this effort, however, there is argument about whether there is a net positive gain for them. Butler et al. (2004) highlight the conflicting arguments: On the one hand, proponents of certain HRM practices speak of them in terms of employee benefits, such as empowerment. On the other, increased autonomy (for example) may in fact lead to work intensification. With regard to the latter, Godard (2004) notes that a number of studies have shown high performance practices to be associated with work intensity and stress, particularly Barker's (1993) research that showed the implementation of autonomous teams in a US manufacturing plant generated a sense of pressure from the effects of normative controls.

Some also argue that poorly-executed attempts to introduce high involvement to a workplace may be masking with rhetoric what are in fact simply Taylorist work practices (Delbridge, 2007), which may result in work intensification without the commensurate *PIRK* gains. To this end, Boxall and Macky (2010, 2014) contend that strategies designed to encourage employee involvement may produce an imbalance between high levels of job demands and low levels of worker control, leading to fatigue and stress, as well as negatively affecting job satisfaction. Boxall (2014) argues that workers benefit from such strategies only when they result in genuine improvements in autonomy *and* when work pressures are not excessive. Moreover, Boxall and Macky (2014) found that greater autonomy, merit-based rewards, and good communication with management may moderate the negative effects of work intensity.

Measuring productivity

Although Vandenberg et al.'s (1999) model places productivity as its target, measuring and assessing the effectiveness of organisational performance or productivity raises several challenges. Cappelli and Neumark (2001) note that studies of HIWP use different measures of productivity to test this

relationship, rendering their results difficult to compare or generalise. In addition, many studies have attempted to assess the impact of current HR practices on historical business performance, suggesting a temporal mismatch between the independent and dependent variables (Boxall & Macky, 2010). Thus, as cause and effect are unlikely to be captured, the importance of longitudinal data to this area of research should not be understated. That is, if the effects of workplace practices take time to emerge, it is important that researchers ensure enough time has passed to reveal those effects, notwithstanding that this may exclude from the research organisations that no longer exist (Cappelli & Neumark, 2001).

Determining how to measure the antecedents to productivity is also problematic. Some argue that measurement of HIWP should be based on actual experience rather than just advertised policy. Macky and Boxall (2008) point out that the existence of policies relating to high involvement and HIWP is insufficient, and policy must be backed up with sustained implementation, as well as effective communication (Kim & Kang, 2013), if it is to have a positive effect. This also raises questions of who should be asked about HIWP and possible biases inherent in subjective assessments of the implementation of those practices. In this regard, Vandenberg et al. (1999) and Boxall and Macky (2007) emphasise the importance of workers' individual perceptions in operationalising and measuring involvement, including both the perception that the opportunity for involvement exists and that it can be and is routinely put into practice. Similarly, Cappelli and Neumark (2001), noting their desire to measure actual practices rather than policies, deliberately targeted responses from operations staff, rather than from human resources departments, to gauge the extent to which HIWP were utilised in the firms in their sample.

Others see the use of individual reports of experiences as overly subjective, preferring instead to focus on the coverage of specific practices to measure the influence of HIWP. Butler et al. (2004, p. 19) contend that the use of employee perceptions to measure HR practices is "overly abstract". Studies may also encounter potential problems with common method bias, which originates from using the same population to provide information to measure both the independent and dependent variables of an analysis. Jakobsen and Jensen (2015, p. 4) observe that "the estimated effect may be biased if some respondents systematically overstate both [independent variable] and [dependent variable] due to social desirability or a tendency to evaluate oneself in too positive a manner". Way (2002) also recommends caution when assessing the results of studies that use a single source for both. In light of these concerns, some studies attempt to mitigate the risk of biases by collecting both employee views *and* information from other groups on other variables of interest, such as external perceptions of organisational performance (e.g., Plimmer, Bryson, & Teo, 2017; Vandenberg et al., 1999), or factual statements about the organisation and industry (e.g. Langford, 2009).

Yet, there are also those who argue against assuming with full confidence that there are causal links between the dependent and independent variables (Macky & Boxall, 2007; Wall & Wood, 2005; Cappelli & Neumark, 2001). Fleetwood and Hesketh (2006), for example, challenge traditionally scientific (and possibly overly simplistic) views on a simple cause and effect relationship, pointing out that this kind of view ignores some of the critical realities associated with the complex relationship between HRM and outcomes, thus leaving the field under-theorised.

Sectoral differences

Empirical studies of high involvement have tended to focus on manufacturing and production-related industries (Arrowsmith, 2010), even though decades ago researchers witnessed the rise of HIWP in the knowledge and services sector (e.g. National Center on Skills of the Work Force, 1990; Lawler, 1986). Although many new workplace practices originally developed to enhance the efficiency, effectiveness and quality in the private sector have been adopted by government services (Lonti & Verma, 2003), the bulk of the research in this area has focused on the private sector, particularly manufacturing (Arrowsmith, 2010). Some have questioned the generalisability of findings from studies that are focused on narrowly defined fields and highly specific contexts. Cappelli and Neumark (2001), for instance, acknowledge the limited applicability of their own study of organisations in the US manufacturing sector to other parts of the economy, although suggest using intra-industry studies because these are less likely to be contaminated by “extraneous factors” (p. 743).

Size and economies of scale have been cited as possible influences on whether and how workplaces implement HIWP. Much of the extant literature, particularly from the US, is based on surveys of relatively large organisations, which calls into question their generalisability. In particular, as they may be competing on the basis of a cost minimisation model (Ryan, 2008), smaller organisations may consider that the benefits of investing in such practices would not outweigh the costs (Way, 2002; Guthrie, 2001). Others argue, though, such as Lawler (1986) that any organisation can put in place effective practices, regardless of size.

Beyond this, there are fundamental differences between manufacturing and other sectors that may affect the inputs, implementation and outcomes associated with HIWP. For instance, Macky and Boxall (2008) posit that high involvement is necessary for managing people involved in the provision of professional services, who must exercise a higher degree of autonomy and authority to conduct their work than those in manufacturing. These authors reinforce Lawler’s (1986) contingency approach to ensure HR practices are appropriate to the industry in question. Swart’s (2007) examination of the management of knowledge workers also supports this idea, particularly in light of the movement from

the management of tangible to that of intangible assets (i.e. knowledge, and those who possess it) in the contemporary business model.

With specific regard to the public sector, there may be unique institutional forces at work which would suggest the experience of high involvement may be somewhat different than that in the private sector (Butler et al, 2004). Firstly, many public sector organisations are engaged in knowledge-intensive work (Alvesson, 2004), and, as highlighted earlier, workers in those fields may experience HIWP differently than do the traditional study subjects in manufacturing. In addition, in most countries, government employees typically comprise a significant proportion of the workforce, and neglecting to study a population of this size leaves a gap in our understanding of both the workers and societal outcomes (Bach & Kessler, 2007). Boxall and Macky (2010) argue that researchers have not typically focused on professional and technical occupations, since workers in those fields have traditionally enjoyed a high level of autonomy and, hence, are less likely to be subjected to Taylorist processes of centralised decision-making. Nevertheless, new work practices like HIWP *are* being applied to these roles, and even if these roles are not the original target, they are still worth studying.

Secondly, the political influence on public sector work is likely far greater than that on private industry. As Bach and Kessler (2007) observe, the role of the state as an employer is complex: while there is an expectation it will treat its employees no less fairly than any other, there is also significant pressure on employers to manage public funds in a manner that is careful, transparent and accountable. Expenditure on nuanced HR practices within the public sector is not exempt from this scrutiny³. This may be a stumbling block to the implementation of HIWP, which can be expensive and may not demonstrate clear and direct outcomes, at least not in the short-term. Procedural constraints and ‘red tape’ inherent in public sector work are known to negatively influence the commitment and job satisfaction of employees (Chen, Bozeman & Berman, 2018; Wright, 2004).

Thirdly, measuring productivity is full of challenges. Holt and Manning (2014) observe that the difficulties in determining causal relationships in the achievement of public policy outcomes mean that assessing the quality of outputs is also problematic. Smith and Street (2005) also caution that while public sector productivity models may offer valuable insights, drawing definitive conclusions is not straightforward. Cappelli and Neumark’s (2001) approach to measuring the effectiveness of HIWP illustrates some of the problems with applying a private industry approach and metrics to public sector work. For example, consider their use of the outcome of sales per worker, as well as that of the ratio between sales and labour costs – how do we measure the sale of public services? Yet pressures levied

³ For example, the publicly-available “New Zealand Government Expectations for Pay and Employment Conditions in the State Sector”, developed in an environment of “tight financial constraints” (SSC, 2012).

upon public sector chief executives to achieve performance targets do impose a requirement to measure organisational outcomes and correctly attribute them to particular inputs.

Finally, the public sector worker herself may 'look different' to counterparts in the private sector. Public sector workers in New Zealand, for example, generally tend to be older and better educated, and are more likely to be female (Plimmer et al., 2013) than their counterparts elsewhere in the overall workforce. Older employees are less likely to leave the organisation, as well as being less motivated by salary (Buelens & Van den Broeck, 2007), and they often feel more empowered and better informed (Boxall & Macky, 2010). Ryan (2008) highlights that a more educated labour force seeks a high level of job satisfaction, suggesting a greater attraction to work and workplace practices that provide incentives for the expenditure of discretionary effort, as well as a return on workers' investment in their own education. A study of nurses with different levels of qualification indicated that those with a lower qualification tended to experience lower affective organisational commitment than their more highly-qualified counterparts (Jones, 2015).

Around the world, public sectors are known for their high levels of female employment (Conley, Kerfoot & Thornley, 2011), and women's membership in unions is increasing; Kirton (2017) notes that women in unions in industrialised nations now frequently comprise around half of a union's members. Canadian economist and writer Armine Yalnizyan (PSA, 2017) observes that women provide and consume more public services than men do. New Zealand research indicates that women place a greater emphasis on the role of government than men do, on matters such as the provision of free health care for all (Coffé, 2011), and hold a greater belief in the collective good (Desmond & Plimmer, 2014). Women still manage the bulk of caring responsibilities, especially but not limited to childcare (Statistics New Zealand, 2013), and are much more likely to interrupt their employment to do so (Ministry for Women, 2018). Furthermore, women in the New Zealand public sector, for example, report having less autonomy and flexibility over their working hours (Proctor-Thomson, Donnelly, & Plimmer, 2011; Plimmer et al., 2013). They are also paid less; in 2013, the SSC reported the gender pay gap in the public service to be 14.2 per cent. Nevertheless, the New Zealand General Social Survey found that female workers were usually slightly more likely to report being satisfied or very satisfied with their job than their male counterparts were (Ministry of Social Development, MSD, 2016).

Public service drivers

Notwithstanding the growing body of research into the links between HIWP and organisational performance, there is still a considerable lack of understanding of the factors that influence those links in public sector work, especially given the volume of high involvement literature that examines private sector contexts. Yet, there is increasing interest in what drives public sector workers to provide

services and whether and how this might influence the implementation and outcomes of HIWP in the sector. Are these workers, like their private sector counterparts (Houston, 2000), compelled largely by a desire to satisfy their own economic needs (Jakobsen & Jensen, 2015), or are there other, special motivating factors at play in the public sector?

Bakker (2015, p. 723) describes the phenomenon of public service motivation (PSM) as “the motive to use all the available energy and dedication for the public good on a daily basis” and this may have a unique influence on the work and reactions of public sector workers. Plimmer, Bryson and Teo (2017) see PSM as a key driver of behaviour, especially in light of the financial constraints under which the New Zealand public sector currently operates. Beyond these behavioural effects, Wright and Pandey (2008) found PSM relates to higher performance, and Mostafa et al. (2015) observe that PSM partially mediates the relationship between high performance HR practices and employee outcomes, such as affective commitment and the demonstration of organisational citizenship behaviours.

Others have found that, in addition to PSM, intrinsic factors such as job security (Buelens & Van den Broeck, 2007) and a feeling of accomplishment (Crewson, 1997) motivate public sector workers in particular. However, job security may be a less relevant motivator than previously, given that it is less certain in the public sector than it was historically (Chen et al., 2018; Lyons et al., 2006). In general, studies have consistently observed that money is less of a motivation in the public sector than in the private sector (Buelens & Van den Broeck, 2007).

Some researchers, though, note that there are limitations to differentiating between factors that drive public versus private sector workers. Lyons et al. (2006), for example, found no significant differences in ‘general values’ - defined as determining the desirability of certain actions or motives, regardless of context - between private, public and para-public workers, indicating that public servants are neither more altruistic nor less self-interested than private sector workers. In addition, Jakobsen and Jensen (2015), echoing Perry (1996) and Rainey (1993), sound a note of caution around measuring concepts such as motivation through self-ratings, highlighting the risks of abstractness and the social desirability of reporting that one is motivated by the public good.

Experiences may differ between parts of the public sector. Holt and Manning (2014) observe some differences in the ways that agencies at the centre of government operate to those that are more directly focused on service delivery, for example, the expected organisational outcomes and proximity to political priorities. Plimmer, Cantal and Qumseya (2017) found significantly higher levels of PSM in their 2016 study for respondents from core public service agencies than from other public sector groups.

New Public Management

There have been significant international shifts since the 1980s in the political and social expectations of the role of public sector agencies. The reforms of New Public Management (NPM) have had a profound effect on the work and workers of the public sector and particularly on human resource management practices (Haworth & Pilott, 2014). NPM was introduced in many countries in the 1980s, including in New Zealand. The extent of its application has varied between jurisdictions (Bach & Kessler, 2007), but the general theory promoted precise performance and results measurement, decentralised administration, greater competition and a market-driven approach to working, disciplined resource use, and, significantly, professional private sector management tools, such as individual performance management. NPM's introduction of private-sector HRM practices into the public sector would reportedly provide an "all-purpose key to better provision of public services" (Hood, 1991, p. 3).

Private sector models rarely map neatly to public sector contexts, although Bach and Kessler (2007) observe that one outcome of NPM has been greater efficiency. This, nevertheless, has often come at a cost to the workforces through tighter controls and more intensive, less secure working practices. Critics saw NPM as bringing some of the elements of Taylorism to public sector work, such as the prioritisation of efficiency over worker wellbeing (Crowley, Tope, Chamberlain, & Hodson, 2010), reduced worker discretion (Macky & Boxall, 2008), and a task-focused model concentrated on performance (Colley, McCourt & Waterhouse, 2012). Unions also lost voice through the reforms (Plimmer, Bryson, Donnelly, Wilson, Ryan, & Blumenfeld, 2017; Bach & Kessler, 2007) and have unsurprisingly been particularly critical of the negative effects of these changes on public service workforces. To this end, a former PSA secretary described NPM as a "sustained assault" on the public service (Haworth & Pilott, 2014).

NPM demanded greater transparency and accountability of the public sector (Hood, 1991), whose work is now highly visible (Kalleberg, Marsden, Reynolds & Knoke, 2006), with both politicians and citizens demanding greater transparency of government processes and reporting of performance (Bach & Kessler, 2007). While transparency of government activities is considered a core value of democracy (Zifcak, 2001) and outputs and outcomes are seen to represent societal values (Holt & Manning, 2014), excessive oversight can place significant pressure on those who must provide and account for services. Under these conditions, the effectiveness of this increased scrutiny may be disputed, with negative effects on public sector workers' job quality, such as restrictions on remuneration and financial support for training programmes, and a negligible positive effect on service delivery (Holt and Manning, 2014; Plimmer, Bryson, Donnelly, Wilson, Ryan, & Blumenfeld, 2017). Increasing risk aversion by public service leaders in the face of potential public shaming should

something go wrong (Tizard, 2012) contrasts with the environment for “performance and innovative capacity” (Kalleberg et al., 2006) that NPM was intended to deliver. Furthermore, short electoral cycles may see politicians encouraging public sector managers to strive for short-term goals that fit well with political aims, rather than long-term capability and capacity building (Bach & Kessler, 2007).

However, some suggest the face of NPM is changing, especially in light of the Global Financial Crisis (GFC) of the last decade. Bach and Kessler asked in 2007 whether a post-NPM era was emerging, highlighting recent shifts in language in the OECD’s public sector policy briefs as indicating a more critical stance on the fundamentals of NPM. Furthermore, the increasing complexity and diversity of stakeholder relationships would necessitate a change in focus from that of the market to one of partnerships and more nuanced, user-centred services.

More recently, Coats (2016) observes that, although it may be too soon to tell whether a new model of capitalism has emerged, the GFC has opened up discussion about weaknesses in the old model, such as questions of distributional fairness and (in)equality. He suggests this may refresh the role of unions in ensuring citizens (both public sector workers and consumers of services) benefit from national prosperity, in contrast to NPM’s market-driven approach and policies favouring individual responsibility for success.

On the other hand, Haworth and Pilott (2014) argue that, towards the end of the GFC, the election in November 2008 of a centre-right government meant that, if there was indeed a shift towards a “post-NPM” environment, New Zealand was unlikely to be experiencing it. Given this environment, including the demand for accountability of the expenditure of public funds, the question remains as to whether large-scale changes in HR practices like implementation of HIWP programmes would stand up to public and political scrutiny, especially given the associated costs.

Employment relationships

Not only has the work of the public sector changed over recent decades, but so has the nature of the industrial relations environment for public service workers, who negotiate their wages, hours and working conditions with the State, which in turn must balance its good employer requirements with its responsibilities towards the taxpayer (Bach & Kessler, 2007). Kalleberg et al. (2006, p. 274) argue that the high visibility of the public sector means greater pressure on the State and its agencies to institute employment practices that treat workers “holistically and equitably”. Others contend, however, that this visibility may mean that satisfying extra-organisational demands from politicians and civil society is prioritised over people management (Bach & Kessler, 2007).

This can have an impact on traditional HR ‘levers’, particularly financial, that tend to be more available in private sector enterprises (Kalleberg et al., 2006) and that can be applied to generate goodwill and motivate employees, and potentially support increased productivity. While it is widely accepted that the wage bill comprises a significant proportion of many organisations’ budgets⁴, remuneration in the public sector is often closely scrutinised (Bach & Kessler, 2007). The influence of remuneration (including performance pay) on the effectiveness and motivation of public sector workers is complex and typically lower than might be found in other parts of the economy (Buelens & Van den Broeck, 2007). However, New Zealand’s public sector wages have risen in recent times at a slower rate than those in the private sector (SSC, 2016), and bearing this in mind, there is probably a limit to Kalleberg et al.’s (2006) image of public servants prioritising “moral involvement” over remuneration.

The opening up of public sector job opportunities to the market and the contracting out of services – a feature of NPM - also has an effect on what it means to have a career in the public sector (Plimmer, Bryson, Donnelly, Wilson, Ryan, & Blumenfeld, 2017). Traditional ideas around having a job for life, along with expectations of steady career progression, are being dissolved (Colley et al., 2012). Macky and Boxall (2008), for example, found that New Zealand public sector workers felt less confident of their chances for promotion than their private sector counterparts, which the authors contend was likely influenced by a longstanding statutory requirement to advertise public positions openly. Nevertheless, job security in the traditional sense, it would seem, has long been declining for many industries (Colley et al., 2012; Kaufman, 2007; Amabile, 1993). This may influence not only the economic position of workers but also their sense of commitment associated with their organisation (Lee & Peccei, 2007) if considered as an erosion of the psychological contract where their loyalty would otherwise be reciprocated with job security and other considerations (Coyle-Shapiro & Kessler, 2003).

The influence of managers is also an important factor in the study of HIWP and the management of people in the public sector. Where, in former more bureaucratic public sector structures, it may have been assumed that rules-based compliance would lead to performance, models adopted from the private sector have led to practices that focus more squarely on performance (Colley et al., 2012), such as individualised people management linked to performance (Coats, 2016), and more ‘business-like’ approaches that give greater operational control to managers, while also requiring greater accountability. At the same time, managers in many organisations were encouraged to pay greater attention to employees’ needs, such as skills development and ‘valuing the workforce’ (Bach & Kessler 2007), ostensibly at least.

⁴ For New Zealand public sector agencies, for example, this is 40 per cent (SSC, 2013).

However, Plimmer, Bryson, Donnelly, Wilson, Ryan, & Blumenfeld (2017) observe that while technical skill is often highly valued in the recruitment and promotion of managers, less focus has been placed in the New Zealand public sector on crucial abilities to perform well as a manager, such as people management and conceptual thinking skills. This lack of capability can result in poor relations with staff, as well as poor performance outcomes. There are weaknesses in the capacity to even measure performance. Frenkel and Orlitsky (2005) raise concerns about managers' operational competence, noting that incompetence results in a high degree of uncertainty of the work to be completed and possibly longer unplanned working hours. Evidence suggests that more than half of employees in New Zealand public sector organisations report working unplanned hours, often without compensation, as well as having too much to do and not enough time in which to do it (Plimmer et al., 2013). In light of this, we cannot discount the possibility that this may be due to poor management practices.

Furthermore, managers' experiences and perceptions of phenomena such as organisational performance and managerial effectiveness can differ quite markedly from those of the employees they manage (Geare, Edgar & Deng, 2006; Boxall et al., 2015). Geare et al. (2006) observe that managers' reports of practices that may influence employee involvement tend to be more positive than those of employees. Nevertheless, non-managerial employees typically possess the knowledge and skills required for implementing organisational strategies (Kim & Kang, 2013). Moreover, as stakeholders in their own right, employees can provide a plurality of perspectives and a richer picture of the impact and efficacy of HRM practices than can managers, whose assessments of outcomes are inclined to be more homogenous and driven by self-interest (Geare et al., 2006). To this end, as Buelens and Van den Broeck (2007) found, hierarchical position is likely to influence motivation and commitment. Finally, Vandenberg et al. (1999) note that *PIRK* must be experienced at every level of the organisation for it to positively affect involvement (and performance), not reserved only for upper management.

There also has been some examination of how workers' unions can influence productivity and HIWP. This is pertinent to this study, principally because the focus is on the responses of union members, but also due to the changing form and nature of unions in New Zealand over the last several decades. A union's facilitation of the adoption of HIWP may influence positive outcomes for organisational performance and for employee voice and job security. This counters the notion that unions were "bad for business" (Gill & Meyer, 2013, p. 508).

Doucouliafos and Laroche's 2003 meta-analysis of research on the impact of unions on productivity, including managerial performance, revealed mixed results, however. On the one hand, unions could be disruptive to business and restrict managerial discretion. On the other, union involvement could

help relieve pressures that might otherwise lead to disgruntlement and high turnover by providing voice and involvement to workers. The study suggested that the net effect of unions on management may differ across both countries and industries, with a possible negative effect in the UK and Japan and a potentially positive impact in manufacturing in the US. Further to this, Kim and Kang (2013) suggest unions may support employee participation or empowerment by providing opportunities for sharing information related to the organisation and cooperating to enhance performance, although they too acknowledged the possible disruptive effects.

Some suggest the opportunities that HIWP present for unions centre on the willingness of employee advocates to discard their traditionally adversarial position in favour of a new, partnership role. In this regard, Godard (2004) argues that this depends upon unions having a meaningful opportunity to participate and sufficient power to ensure an equal partnership. However, he also raises the possibility that, in the long term, the partnership role may impair the union's ability to fulfil its traditional representation role. We see that, while the PSA actively partners with employers to implement high performance/high engagement programmes (PSA, 2014), and would historically often take a partnership approach (O'Donnell, O'Brien & Junor, 2011), it also maintains a defensive stance to "protect members and conditions in government departments and beyond", still recognising the radical reforms experienced in the public service (Haworth & Pilott, 2014, p. 72).

New Zealand context

Although HRM practices like HIWP are now popular across the industrialised world, many point out that national context matters (Coats, 2016; Colley et al., 2012; Boxall & Macky, 2010; Doucouliagos & Laroche, 2003). It would seem ill-advised to uniformly apply discussions to another country without considering its political, economic and cultural contexts.

NPM's enthusiastic application in New Zealand from the 1980s onwards under governments of different political ideologies presents a "microcosm" of its effects on workers and public sector capability (Plimmer, Bryson, Donnelly, Wilson, Ryan, & Blumenfeld, 2017). Following a period of labour deregulation, the introduction of the State Sector Act in 1988 and Employment Contracts Act in 1991 in particular reduced collectivism in the workplace and coincided with fundamental shifts to the management of employment relationships (Coats, 2016), which was not fully restored despite a new government's intentions, with the subsequent introduction of the Employment Relations Act in 2000 (Plimmer, Bryson, Donnelly, Wilson, Ryan, & Blumenfeld, 2017). While union membership remains higher in the public sector than in the private sector (Ryall & Blumenfeld, 2016), public servants found their relationship with the State as employer was changing fundamentally, both legally and on a practical level, such as through new employment practices and the fragmentation and

decentralisation of personnel matters (Plimmer, Bryson, Donnelly, Wilson, Ryan, & Blumenfeld, 2017). Ministers' anti-public service rhetoric (Haworth & Pilott, 2014) and tight constraints on budgets were now commonplace.

Given these pressures, it is perhaps not surprising that the SSC found public sector staff engagement remained lower than that of workers in comparable private sector organisations (SSC, 2013), and that far more New Zealand public sector workers wished they worked in private organisations than the reverse (Chen et al., 2018). Despite this, recent political shifts may be moving the focus back to more traditional perspectives on the public sector, such as public service motivation and collectivism. The SSC is now promoting the concept of a unified Public Service that connects to the "spirit of service to the community", and its most recent briefing to the incoming Minister states that it "will back public servants" (SSC, 2017).

With productivity performance in New Zealand slowing since the 1970s and described by the OECD in 2007 as "lacklustre" (Dalziel & Lattimore, 2004), productivity has been a focus of the New Zealand Government (Ryan, 2008). This is particularly true of the state sector. Measuring and improving productivity is a major focus of Government's Productivity Commission (n.d.), and productivity is entrenched in the SSC's 'Better Public Services' programme, in order to "do more with less" (Desmond & Plimmer, 2014). Yet, despite this focus, as O'Leary (2015) observes, there are the complexities around productivity – such as risk aversion and poor evaluative practices – as well as its measurement in the New Zealand public sector. Critics, particularly Haworth and Pilott (2014), call for reform of the state sector, arguing that systemic problems hinder organisational performance and productivity, as well as aspects that support healthy workplace experiences. While the PSA is actively supporting the development of high performance/involvement practices, it continues to press the Government to become an exemplar employer in the way that it treats its employees (PSA, 2016).

There may also be national culture considerations that suggest high involvement plays out in ways particular to New Zealand workplaces. Chen et al. (2018) observed that New Zealand public sector employees, particularly juniors, experienced much greater autonomy than counterparts in Taiwan partly due to the cultural influence of Confucianism in the latter and its emphasis on submission to authority. Boxall and Macky (2010) also found that New Zealand workers experienced and expected higher levels of *power* compared with that of UK or US workers, as well as compared to experiences of the other *PIRK* constructs. This, they postulate, may be due to socio-cultural issues, with New Zealanders tending towards a relaxed and relatively egalitarian attitude towards authority. Cynically, however, one might put more weight on their suggestion that giving workers more autonomy over

how to conduct their work is more likely due to financial considerations and convenience than to a long-term view of the mutual benefits for workers and their organisation.

Summary

There has been significant international research into the links between high involvement/high performance and productivity stretching back decades, and some with employee outcomes as a focus, such as motivation, job satisfaction and commitment, but also stress and intensification. Relatively few, though, have looked specifically at practices in New Zealand. However, improving routes to productivity is becoming of increasing interest and there are some factors specific to New Zealand that suggest that some of the research from elsewhere may not be wholly applicable (Guthrie, 2001). Furthermore, we know that high involvement and high performance practices are being actively pursued in some quarters, such by New Zealand Post (Arrowsmith, 2010), and agencies such as Callaghan Innovation are providing support to businesses wanting to take up such practices to support innovation and increase employee engagement (Callaghan Innovation, 2018).

There are notable exceptions, however. The work of Boxall and Macky (2008, 2010), which complements earlier work by Guthrie (2001), has made significant contributions to our overall understanding of workers' experiences of high involvement practices in New Zealand. While Boxall and Macky's studies make useful comparisons between the experiences in New Zealand's private and public organisations, there is relatively little research regarding high involvement, and particularly employee outcomes, specific in the New Zealand public sector, other than the work of Plimmer et al. (2013) and Plimmer, Cantal and Qumseya (2017).

Yet, the wider body of the public sector comprises around 13.8 per cent of the working population of New Zealand (Statistics New Zealand, 2017), and the SSC notes "the State Services' most valuable asset is the people" (SSC, 2013). The next section describes the research design, data and methods employed to test the impact of human resource practices associated with power, information, rewards and knowledge on employees' organisational commitment and job satisfaction, and possible moderating effects of gender, age, and level of education.

CHAPTER 3 RESEARCH DESIGN

Introduction

This chapter looks at this study's research design, including its rationale, data collection activities, delimitations, measures, and the sample. It also briefly discusses the original 2013 Workplace Dynamics in New Zealand Public Services Survey, which was the source of the data for this study.

Rationale

This study contributes to the body of knowledge about HRM in a number of ways. Firstly, it proposes a structural model explicating the effects of HIWP on employees' experiences of job satisfaction and organisational commitment. Secondly, it explores possible effects of factors such as gender, age, and level of education on this relationship. Thirdly, it provides insights into this relationship in the context of the New Zealand core public service.

This study employs a quantitative approach and is, in some ways, typical of some of the assumptions associated with the quantitative tradition, such as the application of statistical analyses to large-scale data sets (O'Leary, 2014). However, it is argued that this does not necessarily confine the researcher to a firmly positivist view.

One of the main analysis techniques used here is structural equation modelling (SEM), which is now the most prominent multivariate tool for testing behavioural theory (Hair, Black, Babin, & Anderson, 2010), and allows the researcher to simultaneously test all of the relationships in complex and multidimensional phenomena (Tabachnick & Fidell, 2007). This includes the ability to represent theoretical or abstract concepts that have may have multiple meanings or dimensions (Hair et al., 2010). This potential openness to a plurality of meaning and to a degree of uncertainty, as well as the recognition that many phenomena may occur and affect each other simultaneously, seems to sit well with post-positivist views (e.g. Guba & Lincoln, 1994).

Although much of the SEM literature strongly encourages researchers to base analyses firmly on theory (e.g. Hair et al. 2010), it does not preclude us from asking the question 'why' when the data does not follow theory exactly. This activity of reflection also leaves some space for the researcher to provide additional context to the data from her own experiences of working in the public sector, as well as acknowledge that she is posited within the research. These were some of the key drivers for undertaking this research: an opportunity for the researcher to discover context for some of her experiences, to explore and challenge some of her assumptions about potential causal relationships, and to further open up discussions about the lived experience of working for the Government.

Data collection methods

This study applies data from a 2013 survey of members of the PSA, undertaken in conjunction with Victoria University of Wellington, in order to gauge public sector employees' perceptions of managerial practices in the New Zealand State Sector (Plimmer et al., 2013). In the survey report, the PSA emphasised the need to collect data on the current state of public sector work and the experiences of workers in order to understand how change could and should occur. Further details are contained in the survey report.

Employee surveys provide one of the most common methods for researchers and HR professionals to collect data (Langford, 2009). Such surveys describe the character of an organisation, judge how well it is performing, compare its performance to that of other organisations, and assess the potential causal relationships between practices and outcomes (Kraut, 2006).

The survey was developed by the Industrial Relations Centre (now Centre for Labour, Employment and Work) researchers and hosted online by the PSA. Ethical approval was obtained from the Pipitea Human Ethics Committee at Victoria University of Wellington. Survey items, constructs and methods were based on existing New Zealand and international survey work. Five-point Likert scales based on prior research were used (anchored from 1 = strongly disagree to 5 = strongly agree) for each of the HIWP and employee outcome variables and were considered reliable. Relevant items are listed in Appendix 1.

An online survey was distributed to the full membership of the PSA, and participants were provided with unique, coded URL links. Those without email access were offered alternative ways to participate. It is possible, however, that the views of part-time, fixed-term and contract workers were underrepresented, as they are less likely to be PSA members and/or provide a response to this kind of survey (Desmond & Plimmer, 2014). The anonymity of respondents was ensured through the removal of identifying information from individual responses.

The dataset was subsequently 'cleaned' and imputed, including rounding transformed scale values to numbers with decimal places to the closest round number. Respondents who missed answers to certain items relating to demographic information were deleted from the dataset, as were those who answered less than 95 per cent of the questions. Patterns of missing values were analysed for randomness, and cases with missing values were imputed using the Expectation-Maximization logarithm. Missing values and certain answers were recoded.

The PSA survey was re-run in 2016. Although a number of the same issues were explored, there was a greater focus on other issues, such as employee resilience, with fewer survey items regarding *PIRK* and the employee outcomes. For this reason, the 2013 survey results have been used for this study.

However, this study differs from the original survey in several ways. The original survey generated measures against which organisational performance could be assessed, such as perceptions of client satisfaction, and of organisational ambidexterity and adaptability. Organisational effectiveness is, however, difficult to measure in public service work for reasons outlined previously. Important in this regard, though, is that this study is concerned not specifically with organisational effectiveness but rather with employees' experiences and perceptions of their work environment, which then in turn can affect organisational effectiveness.

Secondly, the analysis in this study is constrained by the fact that the original survey was intended to answer many different questions and in less depth than this study's research questions, a recognised issue with the use of secondary data (O'Leary, 2014). In relation to this, the original survey collected responses from a more diverse group of workers from more organisations than the focus population of this study.

This study uses a subsample of the PSA survey's data ("the sample") to focus on the relationship between HIWP and employee outcomes. For this study, the imputed data set of 5,384 responses has been further reduced to include only respondents who identified themselves as employees working for one of New Zealand's core public service agencies, as listed in Schedule 1 of the State Sector Act 1988 as at 1 July 2013 (see Appendix 2 for full list). Managers within these organisations have been excluded from the data; this was accomplished by removing any observation in the imputed dataset where the respondent provided an answer other than "*Not applicable: I do not manage anyone in my organisation*" to the question "*What is your managerial level within your organisation?*".

Outlier observations have been identified using the SPSS software package as those containing at least one response with a z-score of more than three standard deviations above or below the mean, and have been removed from the sample in order to better represent the population. This leaves a sample of 1,665 unique observations, which retains an acceptable ratio of observations to variables for factor analysis (Hair et al., 2010).

Delimitations

This study focuses specifically on the core public service for several reasons. Firstly, reasons of practicality suggest focusing on a single group rather than on broader and more diverse groupings. Secondly, it is suggested that the core public service may differ somewhat from the wider public

sector, in terms of governance mechanisms and demographic profile (Plimmer, Cantal & Qumseya, 2017; Holt & Manning, 2014)

Furthermore, there is merit in focusing on the experiences of those workers without managerial responsibilities. As Geare et al. (2006) note, managers' assessments of organisational practices outcomes tend to be more positive and homogeneous than those of employees. For example, the means for many of the constructs measured in the original survey were higher for managers⁵ than for non-managers (see Figure 2).

⁵ Noting, however, that there were no executive/corporate-level managers in the imputed dataset of 5,384 responses.

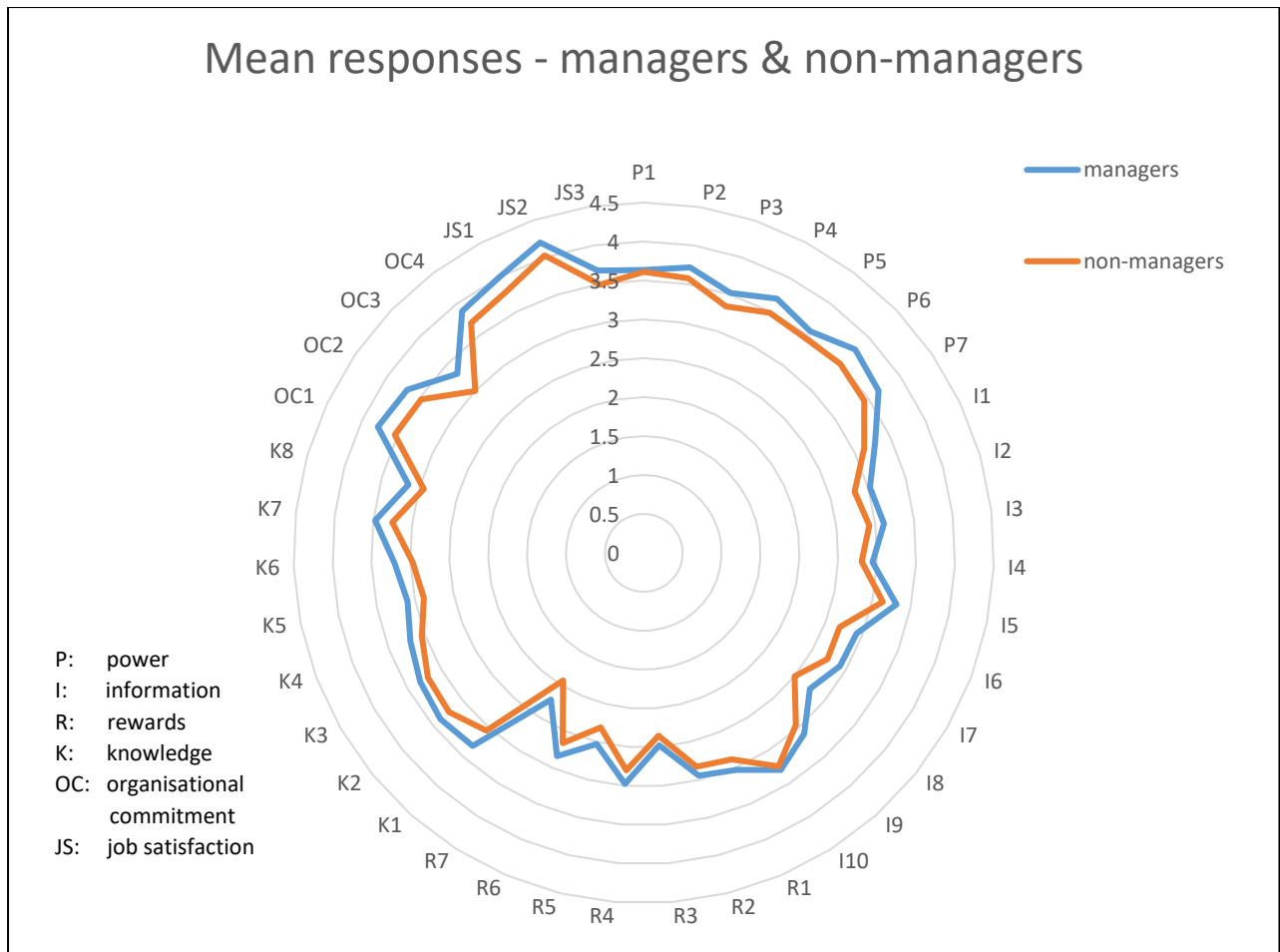


Figure 2: Means of responses from managers compared to non-managers

Measures

HIWP

This section summarises the PSA survey items that were used in this study's analysis. Survey items and descriptive statistics for all items and constructs are provided in Appendix 1.

Vandenberg et al.'s (1999) *PIRK* items were used to measure workers' experiences of high involvement work, rather than practices commonly espoused by managers. This 32-item scale, with a few slight modifications to wording by the original survey's authors⁶, was considered appropriate for several reasons. Firstly, human resource and management practices may differ between workplaces, even within the same sector. However, this scale is not specific to any particular workplace or sector. Secondly, as Boxall and Macky (2009) note, the existence of policies is not necessarily synonymous with workers actually experiencing high involvement. Thus, survey items asking about respondents' experiences with aspects related to the *PIRK* attributes were considered as measures of the presence of HIWP.

Six items were associated with the *power* construct and measured respondents' feelings and experiences of having sufficient authority to do their jobs well and of being able to participate in decisions that affected their work. Ten items were used to form the *information* construct and asked respondents about having the right information to carry out their job. This included through having access to policies, procedures, and information regarding organisational changes and the reasons underlying critical decisions. These items included questions regarding upward flows of information to management about employee needs, opinions and feelings.

In addition, respondents were asked seven questions regarding *reward* processes in their organisation - remuneration, praise for good performance, and promotion opportunities – and particularly whether links between effort, performance and performance incentives were clear and consistently applied. Finally, the survey contained eight items associated with the *knowledge* construct. These asked about respondents' access to knowledge within their organisation to help them to do their job better, such as through training and development, as well as the quality of such programmes.

Employee outcomes

Respondents were also asked questions about their workplace experience derived from those used by Langford (2009) to assess employees' job outcomes. In this regard, *job satisfaction* was measured

⁶ The original survey's authors' analysis found the measures with modified wording to be sound.

using three items exploring respondents' feelings about the type of work they do and their actual job. *Organisational commitment* was measured using four items exploring respondents' feelings of association with their organisation through their expression of loyalty, commitment, pride, emotional attachment and extra effort.

Controls & moderators

A number of demographic variables are used in this study. These include age, education levels, gender, employment status, full or part time work (working hours), income, workplace size, occupational group, and employment length. As outlined in the discussion in Chapter 2 on demographic characteristics of the public sector workforce, age, education level and gender are expected to exert some influence over HIWP and/or employee outcomes.

The other demographic variables listed here are known to affect one or more of the variables in the structural model but do not drive the underlying theory.

Kim and Kang (2013) suggest that employment status, that is, whether a worker is a permanent employee or temporary contractor, can have an impact on commitment levels. In particular, rewards programmes may positively influence temporary workers' cooperation and dedication to the organisation, but like permanent employees, they should also be provided with the opportunity to develop competencies that support organisational strategies.

Working hours (full or part time) can have an influence on the health and psychological wellbeing of worker, although this may depend on how much choice the individual can exercise. Robone, Jones and Rice (2011) found that being unsatisfied with the number of working hours negatively influences part-time workers' health. In addition, Fenton O'Creevy (1995) recommends that studies of job attitudes should control for part-time status, as there are indications that full- and part-time workers may demonstrate different levels of job satisfaction.

Workplace size matters as well. Many smaller workplaces may consider that the benefits of investing in HIWP would not outweigh the costs (Way, 2002; Guthrie, 2001), as they may be competing on the basis of a cost minimisation model (Ryan, 2008).

Occupational group, particularly whether a role is an administrative function or not, has an influence on job attitudes. This includes self-development, amount of role responsibility, and commitment to the job (Buelens & Van den Broeck, 2007). Furthermore, roles providing professional services, which require greater autonomy and authority than some other roles, have been linked to a greater need for high involvement (Macky & Boxall, 2008).

A broad study of New Zealand workers found that those with a longer tenure with their employer tended to report greater experiences of empowerment (Macky & Boxall, 2008). The same study also found that income had a positive influence on reports of both information and rewards.

Participants

This sample comprises 1,665 complete responses, containing only responses from core public service agencies, and within that, only those who reported that they do not manage staff. Some categories that had very small numbers in this sample have been combined. For example, there were very few responses from 15-19 year-olds, so they have been combined into a single category with 20-24 year-olds to form the age bracket “under 24”.

Not all of the 29 core public service agencies as at 1 July 2013 are represented in this sample: there were no responses from some agencies, imputation removed responses from several agencies, and at least one agency was represented in the original survey by only managers (and hence was not considered for this study).

CHAPTER 4 METHODS

Introduction

This section describes the hypotheses tested and activities undertaken in exploratory factor analysis, confirmatory factor analysis (measurement model), and structural equation modelling (structural model) through regression analysis with unobserved variables. Factor analysis techniques are typically employed to derive smaller sets of related data from the dataset, determine common underlying dimensions (factors), find variables that correlate with each other, and test theories (ResearchConsultation.com, 2007).

Hypotheses

The conceptual model relating to this analysis is shown in Figure 3. Based on the literature review and available measures in the survey, positive outcomes are predicted from higher levels of involvement, giving the following hypotheses:

H1: HIWP will have a positive effect on passion, which is comprised of the employee outcomes of job satisfaction and organisational commitment.

H2: Age will moderate the relationship between HIWP and passion.

H3: Gender will moderate the relationship between HIWP and passion.

H4: Education level will moderate the relationship between HIWP and passion.

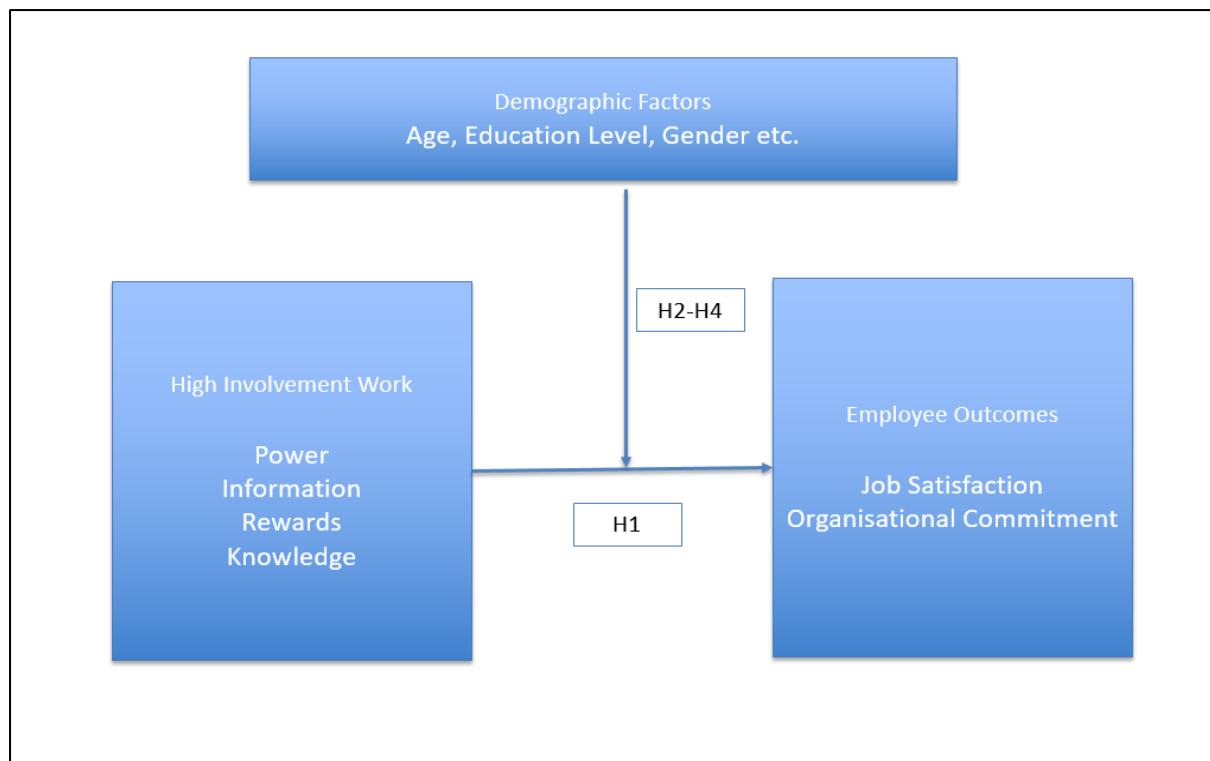


Figure 3: Adapted conceptual model

Assumptions

Independence

Due to steps taken for the administration of the survey, such as the provision of unique URL links for each participant, independence (one response from each participant, and participants did not influence others) is assumed. This was strengthened through the imputation process, by way of removing responses that were more than five per cent incomplete.

Sample size

The sample size is deemed to be appropriate, with the dataset here containing 1,665 viable responses. Yong and Pearce (2013) suggest a sample size of at least 300 participants, with the variables in question having at least five to ten observations each in order to reduce error in the data.

Normality

The imputation process had also excluded missing data; this will be confirmed during the normality test of the data. The results of the Kolmogorov-Smirnov and Shapiro-Wilk Tests of Normality, that is, the level of significance for the differences from a normal distribution, show significance values below the threshold of 0.05 (Allen & Bennett, 2010), suggesting that each variable may not be approximately normally distributed. However, these tests can be quite sensitive to departures from normality,

especially in larger studies, and factor analysis is considered to be fairly robust against violations of the normality assumption (ibid.)

Methods employed

All of the relevant survey items will be tested in SPSS v.25. The SPSS Amos module will be used for confirmatory factor analysis and structural equation model development.

Exploratory Factor Analysis (EFA) will be used to develop a basic understanding of the significance of the variables and possible patterns, to ascertain that the survey items fit with the factor structure predicted in the conceptual model, and to confirm that the data will be suitable for further analysis. It is noted, however, that EFA is exploratory in nature and does not test theories or hypotheses (Costello & Osborne, 2005), and hence will be used only as an introductory step.

Confirmatory Factor Analysis (CFA) tests how well the measured variables represent and operationalise the constructs in the actual data and is technically the first part of SEM. Unlike in EFA, theory should drive the testing of the plausibility of the model in CFA rather than the other way around (Hair et al., 2010).

A measurement model will be developed to represent how measured variables (items) come together to collectively represent a construct, and the subsequent structural model development process will then indicate how the constructs come together. Jöreskog and Sörbom (1993) note that testing the structural model may be meaningless unless it is first established that the measurement model is valid.

The constructs of *power*, *information*, *rewards*, and *knowledge* are expected to be positively related to each other, and collectively positively related to the employee outcomes of *job satisfaction* and *organisational commitment* (hypothesis H1). Vandenberg et al. (1999) observe that, in order to exercise the conceptual basis of the *PIRK* attributes, they should be treated collectively, although note that the literature is ambiguous on how to operationalise the mutually-reinforcing nature of *PIRK*.

They therefore operationalise it as a higher-order factor; that is, a method of capturing the meaning of a concept through the common forces underlying its individual components, and label it '*Involvement*'. They also apply a second-order factor for the employee outcomes, which they call '*Psychological Work Adjustment*'. Langford (2009) also utilises a number of higher-order factors, including one he labels '*passion*', which includes the constructs of *job satisfaction* and *organisational commitment*.

This study applies Vandenberg et al.'s (1999) and Langford's (2009) approach by creating two higher-order factors: one for the *PIRK* constructs, and one for the employee outcomes, for both the

measurement and structural models. Langford's term *passion* is applied here to refer to a higher-order factor measured by six of the ten items from Langford (OrgCom1-4, Jobsat1 and 3), which were used in the PSA survey.

The CFA process will include assessing model fit, the reliability, and validity of the model, and testing for invariance and common method bias. The thresholds applied are:

Table 1: Tests, measures and thresholds

Test	Measure	Threshold/Range	Source
Identification	Correlation estimates between constructs	-1.0 - +1.0	Hair et al (2010)
Model Fit	Chi-square	Low, "to support the model as representative of the data"	Hair et al. (2010, p. 648)
	CMIN/df (likelihood ratio)	<5.0	Schumacker & Lomax (2004)
	Comparative Fit Index (CFI)	>0.95	Hu & Bentler (1999)
	Root Mean Square Error of Approximation (RMSEA)	<0.05	Hu & Bentler (1999)
	Adjusted Goodness of Fit Index (AGFI)	>0.80	Hu & Bentler (1999)
	p-value for a test of close fit (PCLOSE)	>0.05	Hu & Bentler (1999)
	Standardised Root Mean Square (SRMR)	<0.9	Hu & Bentler (1999)
Validity	Average Variance Extracted (AVE) (<i>convergent validity</i>)	>0.5	Hair et al. (2010)
	Square Root of AVE (<i>discriminant validity</i>)	Should be greater than any inter-factor correlation	Hair et al. (2010)

Reliability	Construct Reliability (CR)	0.7<	Hair et al. (2010)
Contribution of items to factors	Loadings	0.5< good 0.7< ideal	Hair et al. (2010)
Measurement invariance (chi-square tests)	Comparison of regression weights and critical ratios between groups	The z-score of at least one indicator on each factor is not significantly different between groups	Gaskin (n.d.)
Common Methods Bias (CMB)	Harmon's One-Factor Test	<50 per cent of variance is explained by any single factor	Gaskin (n.d.)
	Common Latent Factor (CLF)	<0.2 reduction in path estimates	Podsakoff et al. (2003)
	Partial Correlation/addition of marker variable	Negligible or no differences when comparing structural parameters of model containing the marker variable to those in the model without the marker variable.	Podsakoff et al. (2003)

Various error terms within the model will be correlated. There is debate surrounding the relative merits and risks of correlating error terms in SEM. Some argue against correlating errors, noting that the pursuit of model fit based on post hoc modifications according to statistical criteria without theoretical reasoning is inappropriate. It is suggested that this threatens the researcher's understanding of the phenomena under study, obfuscates the structure of the relationships in the model, and may limit generalisability (Hermida, 2015).

However, others, such as Landis, Edwards and Cortina (2009), propose that there may be certain situations when deliberate correlation of error terms is permissible, such as when it is suggested a priori there are indicators that share components of meaning. Following this line of reasoning, this study will correlate certain error terms but only if they are associated with the same factor as each

other, *and* if the wording of the items associated with the error terms suggests similar aims or meaning, and hence theoretical relationships are likely.

SEM

SEM analyses have become popular over the last few decades for testing theory-based propositions in management research fields, including organisational behaviour and human resources. They are appealing because they can support the linking of latent variables with indicators and the testing of relationships (Williams, Vandenberg & Edwards, 2009). Williams et al. (2009) also suggest that a fairly typical application of SEM is on questionnaire data, and hence it is deemed to be a suitable analysis method for this study.

The model to be tested in this analysis is depicted in Figure 4. This includes the measurement model, the part of the model that examines the relationships between the latent variables and their measures (items), and the initial structural model, examining the relationships between the latent variables.

Gender, age bracket, and education level are added to the structural model as moderators. *Occupation, employment status* (permanent, fixed-term, contract, or temporary), *working hours* (full-time = 30+ hours per week; part-time = fewer than 30 hours/week), *workplace size, income, and employment length* are included as controls, as these are known to affect one or more of the relationships specified in the structural model but do not drive the underlying theory. Possible differences within groups (*gender, education level, and age bracket*) for hypotheses 2-4 are tested individually.

Structural model

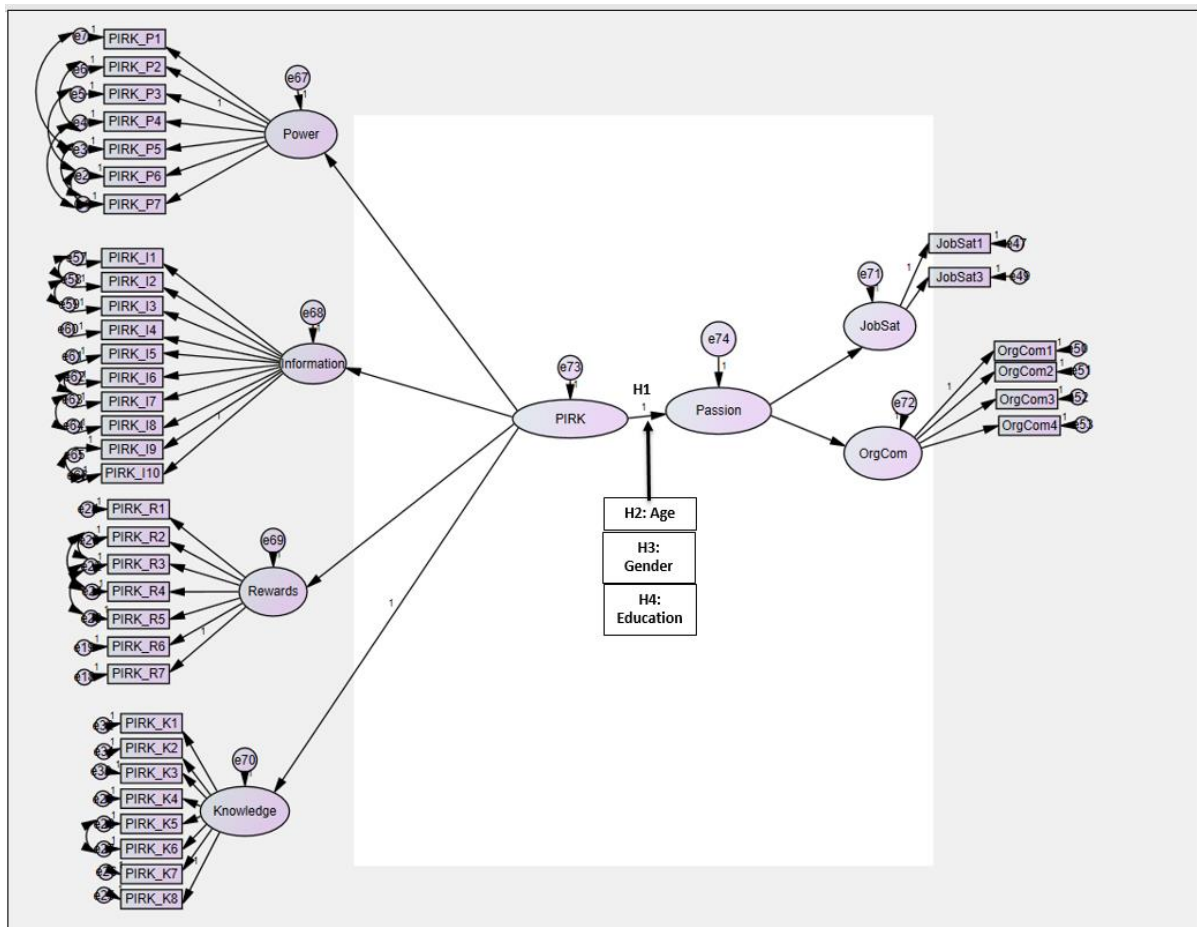


Figure 4: Structural model with hypotheses

CHAPTER 5 RESULTS

Introduction

This chapter describes the results of analysis, including key descriptive statistics, decisions made during the exploratory and confirmatory factor analyses, and how these affected the development of the final structural model. The chapter concludes with an examination of the effect of introducing demographic factors to the model's causal relationships; namely gender, age, and level of educational attainment. It finds that the effect of employment length differs between men and women.

Descriptive statistics

Some of the demographic factors in this study are broadly representative of the core public service. There are, however, some general differences that can be observed regarding gender, education level, employment length, and income. Public service data is from SSC (2013), unless specified otherwise, and SSC data was not available for all measures in this study. The proportion of women is higher in the sample used for this study than in the public service (and even higher than women's 70 per cent representation in the PSA, as reported by the union in 2014), although the proportion of the public sector that is female has been rising over time (SSC, 2012).

Education level is a significant point of difference: fewer people in this sample have no post-school qualifications than in the overall public sector in 2013, although the proportion with a degree or higher was approximately the same (2013 data from SSC, 2016). Several other differences may be connected to the focus of this study on those without managerial responsibilities. While the average public service employee has been with their employer for 9.2 years, the tenure of a 41.8 per cent of the respondents in this study⁷ was five years or less, and 43.1 per cent of this sample⁸ earned a gross salary of under NZ\$50,000 per annum, significantly lower than the public sector average of NZ\$68,561 and median of NZ\$58,425.

⁷ Survey respondents were asked to select the appropriate employment length bracket, hence it was not possible to calculate an average.

⁸ Survey respondents were asked to select the appropriate income bracket, hence it was not possible to calculate an average.

Table 2: Descriptive statistics

Categories		This Sample (%)	Public Service (%)
Gender	Male	25.59	40.2
	Female	74.41	59.8
Highest Qualification	Secondary or none	24.92	32
	Post-secondary	28.71	20
	Bachelors or equivalent	27.39	27
	Post-graduate	18.98	21
Age	Average	45.18	44.62

For a more detailed breakdown of the demographic characteristics of the sample, refer to Appendix 3.

Respondents were generally positive about employee outcomes, although less so about HIWP, particularly *rewards* and *information*. Women indicated slightly higher *job satisfaction* than men did.

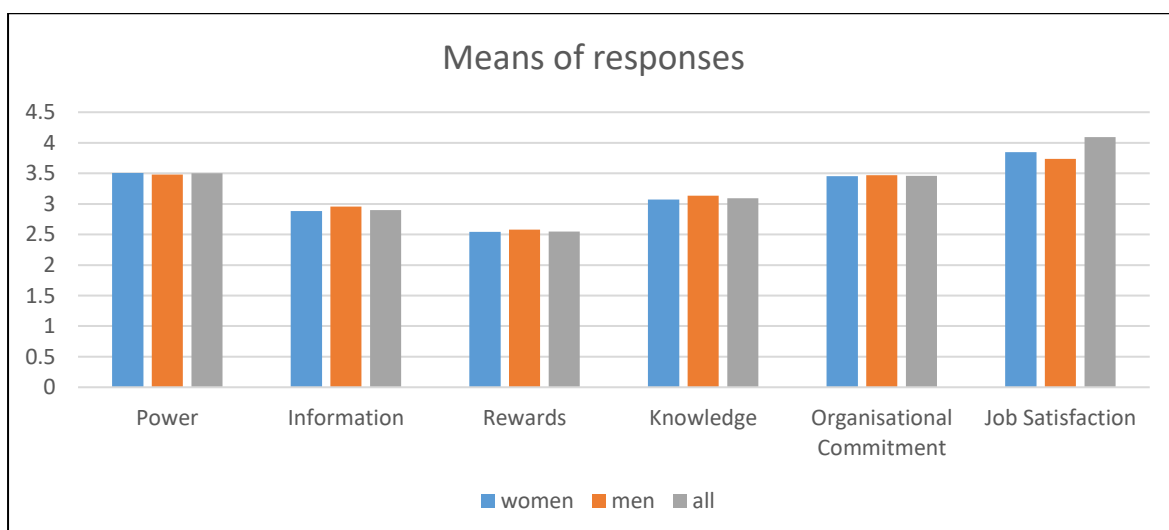


Figure 5: Means of responses

Exploratory factor analysis

The number of factors to retain was based on Kaiser's criterion, as recommended by Yong and Pierce (2013). This suggests including only eigenvalues (that is, the amount of variance accounted for by a factor) above 1. Factor loadings below .30 were suppressed in order to simplify interpretation of the output (Allen & Bennett, 2010), and because item loadings less than .32 are generally considered undesirable (Yong & Pearce, 2013). Oblimin rotation was selected and the extraction method used was Principal Axis Factoring. Principal Axis Factoring, which seeks the least number of factors to account for the common variance, is recommended when the data violate the assumption of multivariate normality (Costello & Osborne, 2005). Langford (2009) observes that an oblique rotation such as Oblimin should be used when it is expected that factors will correlate.

A number of the correlations (Pearson's r) in the Correlation matrix were above .3, indicating the presence of solid relationships between the variables and that the data were suitable for factor analysis. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) indicates how much variance in the data can be explained by the factors, and Allen and Bennett (2010) suggest that values above .6 are acceptable. The KMO MSA was acceptable at .967 and hence the data can be considered suitable for factor analysis. In addition, the result of the Bartlett's Test of Sphericity for the presence of correlations among the variables was significant ($Sig < .05$) at .000, suggesting the variables were related and hence acceptable (Yong & Pearce, 2013).

Most of the items for the six constructs of interest (the four *PIRK* constructs, *job satisfaction* and *organisational commitment*) yielded a KMO MSA above .9 in the anti-image correlation matrix, indicating a strong relationship with the other variables in the matrix (Allen & Bennett, 2010). Items associated with other constructs generally did not load onto factors for these six constructs and therefore were not considered for further analyses.

The EFA was run again, this time on just the items associated with the six constructs. The KMO MSA was still acceptable at .958 and Bartlett's Test was significant at .000. The pattern matrix (provided at Appendix 4) indicated that the data mapped to six factors, which were likely to be the six constructs but would be tested later during confirmatory factor analysis. Most of the items that were expected to describe the same construct loaded together; for example, all of the items regarding *power* loaded onto the same factor. Cumulatively, the six factors accounted for 60.82 per cent of the total variance (extraction sums of squared loadings), which is modest but not necessarily unsatisfactory in the social sciences (Hair et al., 2010).

Hence, the proposed factors are labelled:

Factor 1: *Information*

Factor 2: *Knowledge*

Factor 3: *Job Satisfaction*

Factor 4: *Power*

Factor 5: *Rewards*

Factor 6: *Organisational Commitment*

Results of the EFA generally confirm that the survey from which the data were derived was well constructed and that the data were suitable for further analysis.

Confirmatory factor analysis

The reliability of the scales for the sample was tested, with results indicated high levels of scale reliability with alphas above 0.7.

Table 3: Reliability of scales

Construct	Number of items	Cronbach's alpha	Mean	Standard Deviation	Variance
Power	7	0.912	24.51	5.443	29.626
Information	10	0.917	29.03	7.780	60.532
Rewards	7	0.896	17.87	5.986	35.835
Knowledge	8	0.944	24.70	7.242	52.444
Job Satisfaction	3	0.805	11.46	2.250	5.063
Organisational Commitment	4	0.878	13.84	3.474	12.070

One of the factor loadings for each of the constructs was fixed to a value of 1 at random by the software, which supports proper model identification (University of Texas, 2012). Hair et al. (2010, p. 681) state that this is akin to “setting the scale” for a latent construct because it is unobserved and hence has no metric scale. This does not, however, influence the total number of estimated parameters nor does it change the actual relationships reflected in loadings. All constructs were allowed to inter-correlate, as there are theoretical reasons outlined in the literature indicating that there are relationships between them.

No identification problems were found. All of the correlation estimates between constructs were within the expected range of +1.0 to -1.0., as were the standardised path coefficients (standardised

regression weights in AMOS). No negative error variance estimates were found; that is, no Heywood cases. Hair et al. (2010) note that the presence of Heywood cases would suggest that more than 100 per cent of the variance in an item or construct is explained, which is logically impossible.

Factor loadings

One of the most fundamental assessments of construct validity involves the measurement relationships between items and constructs. Loadings between most items and their associated constructs were above 0.5, and many were higher than 0.7, which is considered to be ideal (Hair et al., 2010).

Construct validity

Tests of the Average Variance Extracted (AVE) and Construct Reliability (CR) for the six constructs achieved acceptable levels, although the item JobSat2 had a slightly negative effect on the fit of the model. The wording of the item – “*I like the **kind of work** I do*” (bolding added) – could be interpreted by respondents as being a reflection of their chosen profession, rather than of their actual job or current organisation⁹. On these grounds, it was removed from the model.

A number of error terms were correlated by the researcher if they displayed semantic similarities and if they were associated with the same factor as each other, suggesting similar aims or meaning and hence possible theoretical relationships. Error terms that did not fit both of these criteria were not correlated. The correlated errors and rationale for correlation are reproduced at Appendix 5.

⁹ JobSat1: “*My work gives me a feeling of personal accomplishment.*”
JobSat3: “*I am satisfied with my job.*”

Once JobSat2 was removed, the model demonstrated: convergent validity, as evidenced by the AVE scores all above 0.5; reliability, as evidenced by the CR all above 0.7; and discriminant validity, based on the square root of the AVE (in bold in table 5) being greater than any inter-factor correlation.

Table 4: Reliability & validity measures for measurement model

	CR	AVE	Power	Rewards	Knowledge	OrgCom	JobSat	Information
Power	0.907	0.582	0.763					
Rewards	0.882	0.518	0.606	0.720				
Knowledge	0.944	0.679	0.522	0.585	0.824			
OrgCom	0.881	0.650	0.413	0.459	0.341	0.806		
JobSat	0.753	0.611	0.549	0.452	0.422	0.617	0.781	
Information	0.914	0.517	0.681	0.699	0.576	0.507	0.446	0.719

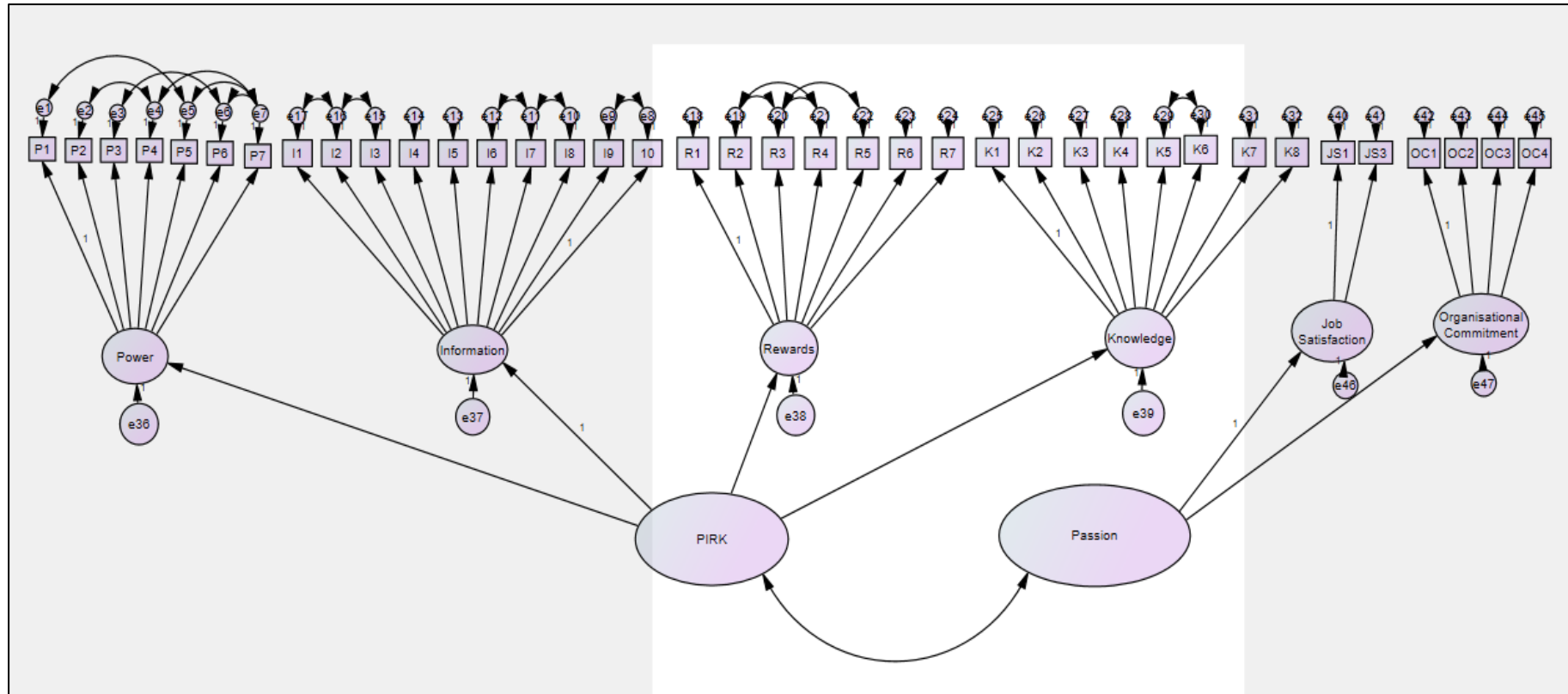


Figure 6: Measurement model

A bootstrap analysis of 10,000 samples was used in order to obtain 90 per cent confidence intervals for the standardised regression weights / factor loadings for the measurement model. Full results are reproduced at Appendix 6.

Table 5: Factor loadings for measurement model – both bootstrapped and unbootstrapped

Parameter		Factor loading	Bootstrap Results					
			Mean	Upper	Lower	S.E.	Bias	P
Power	PIRK	0.783	0.783	0.807	0.757	0.015	0.000	0.000
Information	PIRK	0.857	0.857	0.877	0.836	0.012	0.000	0.000
Rewards	PIRK	0.810	0.809	0.832	0.786	0.014	0.000	0.000
Knowledge	PIRK	0.684	0.683	0.710	0.656	0.016	0.000	0.000
Job Satisfaction	Passion	0.795	0.795	0.834	0.754	0.024	0.000	0.000
Organisational Commitment	Passion	0.764	0.764	0.798	0.730	0.021	0.000	0.000

Table 6: Fit measures for measurement model

Measure	Result
Chi-square	2745.688
CMIN/df	4.277
CFI	0.952
RMSEA	0.044
AGFI	0.904
PCLOSE	1.000
SRMR	0.0409

The chi-square was quite large, but this may be expected for this kind of sample size, and is often used in conjunction with other goodness-of-fit measures. The sample size may also have influenced the CMIN/df: normally, a result of under 3.0 suggests good fit although larger may be permissible for larger samples (over 750) (Hair et al., 2010). The fit measures for the measurement model were considered acceptable.

Invariance

Invariance should be tested to validate that the measurement model shows equivalent representations of the same constructs when applied to different groups (Hair et al., 2010). The

measurement model was tested for invariance through a multi-group moderation test in AMOS, with the sample split at random into two groups of approximately the same size. The regression weights or factor loadings for both groups were compared and the critical ratios between parameters were assessed. The results indicated that the factor structure and loadings were sufficiently equivalent across the groups, both showing good model fit statistics. This was repeated by splitting the sample by gender, and the results were also good.

Common Method Bias (CMB)

Jakobsen and Jensen (2015) suggest that questionnaire data that rely on the same respondents for both its independent and dependent variables may be at risk from CMB. A Harman's One-Factor Test was conducted using the items for *PIRK*, *job satisfaction* and *organisational commitment*. An unrotated EFA found six factors with an eigenvalue of greater than 1.0 and the largest factor explained 37.08 per cent of the variance. The result was similar (36.51 per cent) when the EFA was constrained to a single factor. This is below the commonly-used 50 per cent maximum cut-off threshold, although Podsakoff et al. (2003) caution that the test is somewhat insensitive and that the presence of multiple factors does not definitively indicate that the measures are free of CMB.

Podsakoff et al. (2003) also suggest controlling for the effects of an unmeasured latent method factor by allowing items to load on their theoretical constructs, as well as on a Common Latent Factor (CLF), and the significance of the structural parameters is examined both with and without the CLF in the model. A principal advantage of the CLF technique is that it does not require the specific factor to be identified and measured *a priori*. When a CLF was added to the measurement model, a number of standardised regression weights or factor loadings between the constructs and some of their items dropped by more than 0.2 (i.e. suggesting a lot of shared variance). This could indicate measurement error, which can in turn threaten the validity of the conclusions about the relationships between measures (ibid.).

One further CMB test suggested by Podsakoff et al. (2003), a partial correlation procedure, was undertaken. This involved including a marker variable that was not expected on theoretical grounds to have a relationship with any other variables in the model, and hence any relationships that are then observed in the model can be assumed to be present due to CMB.

For these purposes, workplace size was added to the measurement model. The standardised regression weights or factor loadings for the model with the marker variable were compared with those for the model without the marker variable, with negligible (less than 0.003) or no differences, suggesting that CMB was unlikely.

Procedural steps were also taken in the original survey design that could help to reduce the risk of CMB. For example, questions relating to the independent variables (*PIRK*) and dependent variables (employee outcomes) were separated by several other questions (Podsakoff, MacKenzie, & Podsakoff, 2012). Furthermore, asking workers about their own experiences of HRM at work is a valid approach, as workers are best placed to report on these (Boxall & Macky, 2007; Cappelli & Neumark, 2001). Respondents were also assured of anonymity and confidentiality of answers, which can encourage respondents not to be hesitant and artificially adjust their responses (Podsakoff et al., 2003). It was, therefore concluded that, based on the balance of the tests and survey structure, CMB was unlikely.

Conclusion

The development and validation of the measurement model using EFA and CFA procedures on the sample of 1,665 observations resulted in six statistically and conceptually valid constructs. These can be used to test the structural model of the relationships between HIWP (as represented by *PIRK*) and employee outcomes, as expressed by hypothesis H1, as well as the influence of moderators described in H2, H3 and H4.

Structural equation modelling

Most of the fit measures were within ranges that would be associated with good fit for a sample of this size. The structural model's fit measures were not different to those of the measurement model.

There is much debate about the proper application of formative versus reflective models (e.g. Bollen & Diamantopoulos, 2017). Although a formative measurement theory considers that measured variables cause a construct, a reflective model has been drawn here, given that this model utilises higher-order factors. It is argued that the *power*, *information*, *rewards* and *knowledge* constructs are in this case operating as indicators (albeit with their own indicators), rather than causes, of the *PIRK* higher-order factor. *Organisational commitment* and *job satisfaction* are in a similar relationship with *passion*.

The model was compared to three other possible models: higher-order *PIRK* to first-order *job satisfaction* and *organisational commitment*; first-order *power*, *information*, *rewards* and *knowledge* to higher-order *passion*; and higher-order *PIRK* with a direct path to higher-order *passion*, and indirect paths from higher-order *PIRK* to *organisational commitment* and to *job satisfaction*. This is illustrated in Figure 8.

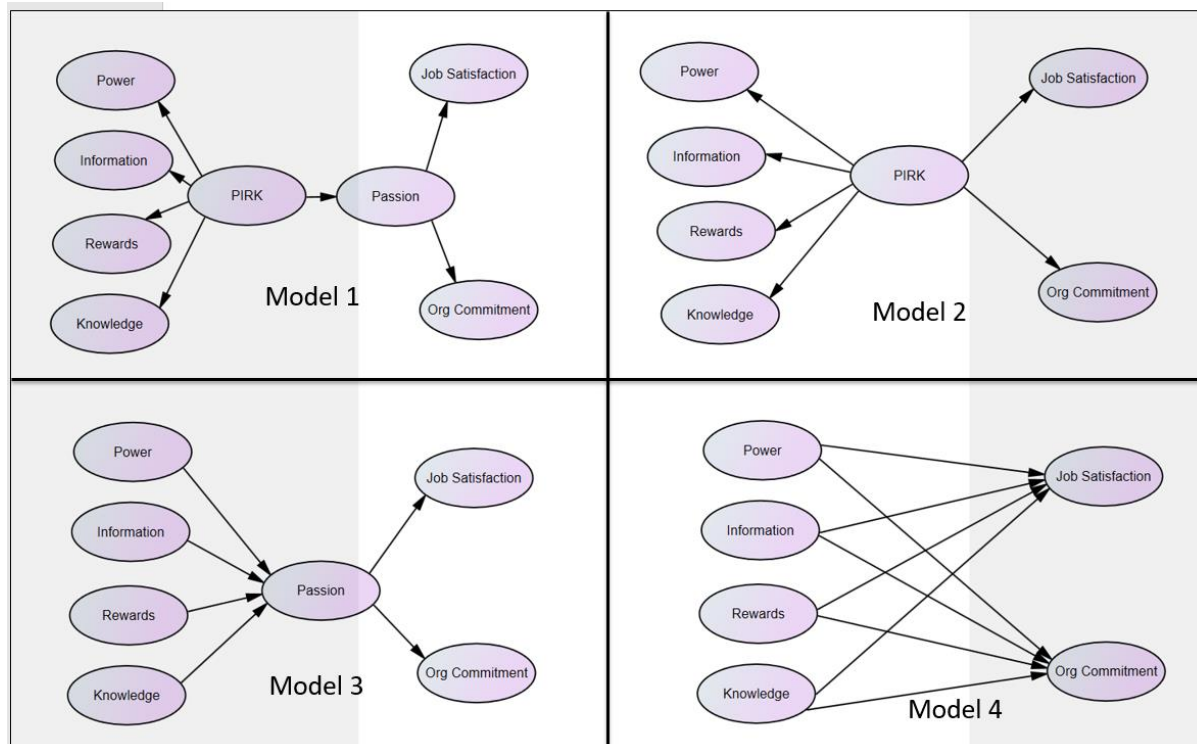


Figure 7: Comparison of different models (NB items and error terms have been omitted for clarity)

Table 7: Comparison of four possible structural models

model	chi-square	df	CMIN/df	AFGI	CFI	RMSEA	SRMR	PCLOSE
1	2745.688	642	4.277	0.904	0.952	0.044	0.0409	1.000
2	2929.362	643	4.556	0.900	0.948	0.046	0.0457	1.000
3	5141.988	643	7.997	0.822	0.897	0.065	0.2680	0.000
4	5337.923	641	8.327	0.816	0.892	0.066	0.2698	0.000

The original proposed model (Model 1) performed the best in terms of model fit, so it was used for subsequent analysis. It is also the most consistent with theory, fitting well with Vandenberg et al.'s (1999) concept of higher-order factors for both *PIRK* and employee outcomes.

Comparing models 1 and 2 (that is, with and without *passion* respectively) indicates that the presence of *passion* reduces the direct effect of *PIRK* on *job satisfaction* and *organisational commitment*.

Table 8: Effect of passion

Model	Path			Factor Loading	Standard Error
Model 1 (with <i>passion</i>)	JobSat	<---	Passion	0.795	0.037

	OrgCom	<---	Passion	0.764	0.045
Model 2 (without <i>passion</i>)	JobSat	<---	PIRK	0.599	0.040
	OrgCom	<---	PIRK	0.597	0.046

Bootstrapping was employed, as it is particularly useful given the sample size. As the sample size exceeds about 400, the method is increasingly sensitive and may make goodness-of-fit measures suggest poor fit. Conversely, the increased power that a large sample brings may make almost any effect appear significant (Hair et al., 2010).

A bootstrap analysis of 10,000 samples was used in order to obtain 90 per cent confidence intervals for the standardised regression weights or factor loadings. Full results are reproduced at Appendix 7.

Table 9: Factor loadings for structural model 1 – both bootstrapped and unbootstrapped

Parameter			Bootstrap Results					
		Factor loading	Mean	Lower	Upper	S.E.	Bias	P
Power	PIRK	0.783	0.782	0.757	0.807	0.015	0.000	0.000
Information	PIRK	0.857	0.857	0.837	0.877	0.012	0.000	0.000
Rewards	PIRK	0.810	0.809	0.786	0.832	0.014	0.000	0.000
Knowledge	PIRK	0.684	0.684	0.656	0.711	0.017	0.000	0.000
Passion	PIRK	0.729	0.729	0.694	0.763	0.021	0.000	0.000
Job Satisfaction	Passion	0.795	0.794	0.753	0.835	0.025	-0.001	0.000
Organisational Commitment	Passion	0.764	0.764	0.729	0.798	0.021	0.000	0.000

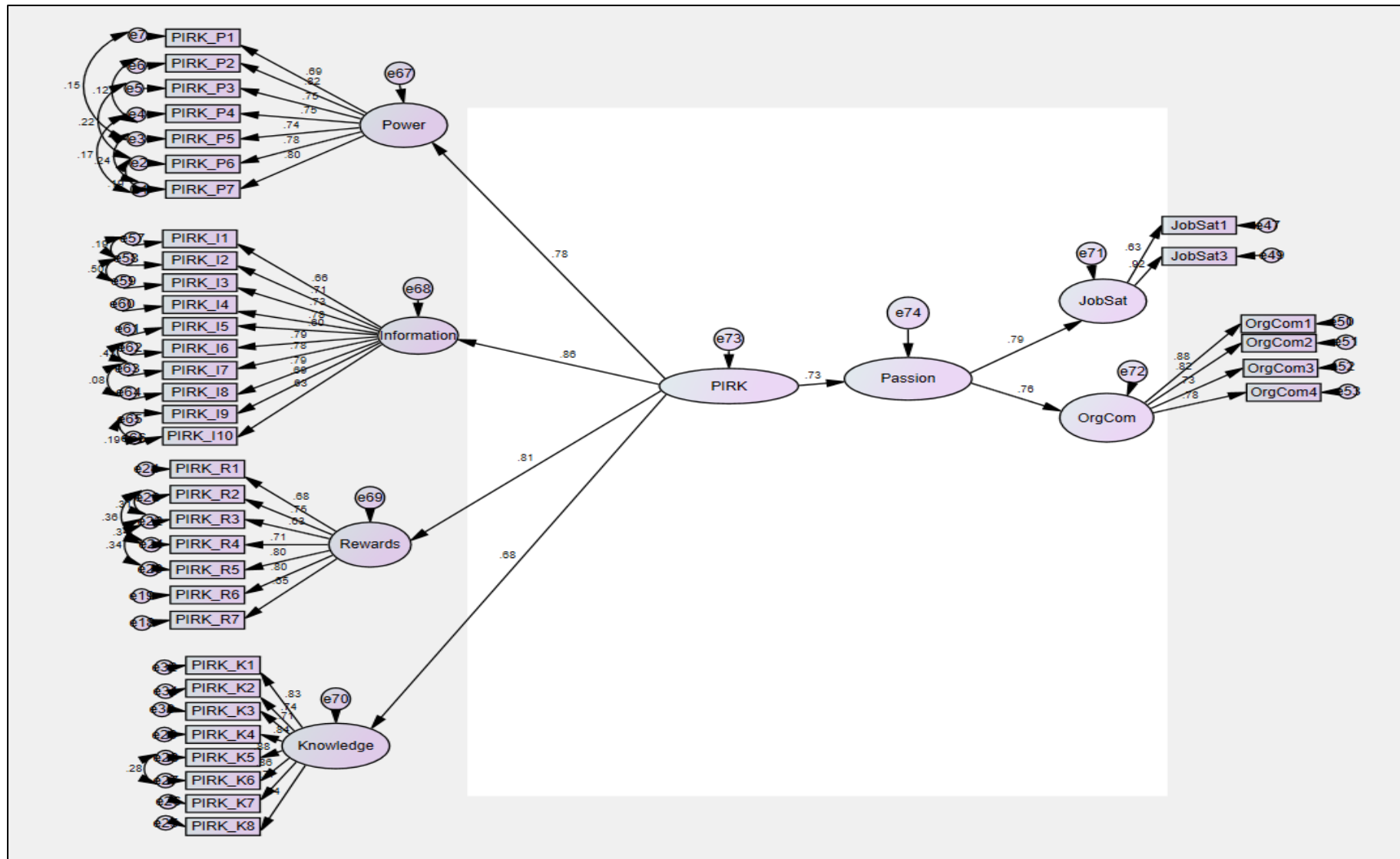


Figure 8: Structural model (with loadings)

Controls were then added to the model (*Occupation, Employment Status, Full or Part Time, Workplace Size, Income, and Employment Length*), and fit measures were still satisfactory. The CFI was slightly below the suggested lower threshold of 0.95, although this can be attributed to the size of the sample (Hair et al., 2010)

Table 10: Fit measures for structural model with controls

Measure	Result
Chi-square	3301.038
CMIN/df	3.847
CFI	0.945
RMSEA	0.041
AGFI	0.901
PCLOSE	1.000
SRMR	0.0387

Moderation of the structural model

Gender

The sample was separated by gender.

Table 1: Model fit measures - comparisons with and without gender

Measure	Result (unconstrained model)	Delta (model with gender minus model without)
Chi-square	4288.225	987.187
CMIN/df	2.499	-1.348
CFI	0.943	-0.002
RMSEA	0.030	-0.011
AGFI	0.877	-0.024
PCLOSE	1.000	0
SRMR	0.0491	0.0104

A chi-square difference test indicated that the whole model was different between the two groups (p value was significant).

Table 12: Model comparisons for gender (assuming unconstrained to be correct)

Model	DF	CMIN	P value
Structural weights	49	63.692	0.077

The path associated with hypothesis H1 (HIWP will have a positive effect on the employee outcomes of *job satisfaction* and *organisational commitment*) was then examined to test hypothesis H3 regarding the possible moderating effect of gender on the relationship between *PIRK* and *job satisfaction* and *organisational commitment*.

The results indicated that gender did not have a significant moderating effect on the relationship between *PIRK* and *passion* when controlling for *occupation*, *employment status*, *full or part time*, *workplace size*, *income*, and *employment length*.

Table 13: PIRK-to-passion path comparisons for gender (assuming unconstrained to be correct)

Model	DF	CMIN	P value
Structural weights	1	1.086	0.297

This process was repeated for the remaining moderating variables. Due to analysis issues associated with sample size, age was divided into four groups of approximately similar sizes: under 35, 35-44, 45-54, and 55 and over. For the same reason, education level was divided into: no post-secondary qualifications, post-secondary certificate/diploma, bachelor's degree, and post-graduate qualification.

Table 14: Model fit measures - comparisons with and without age

Measure	Result	Delta (model with <i>age</i> minus model without)
Chi-square	6552.570	3251.532
CMIN/df	1.909	-1.938
CFI	0.931	-0.014
RMSEA	0.023	-0.018
AGFI	0.826	-0.075
PCLOSE	1.000	0
SRMR	0.0449	0.0062

Table 15: Model fit measures - comparisons with and without education level

Measure	Result (unconstrained model)	Delta (model with <i>education level</i> minus model without)
Chi-square	6354.672	3053.634
CMIN/df	1.852	-1.995
CFI	0.936	-0.009
RMSEA	0.023	-0.018
AGFI	0.831	-0.07
PCLOSE	1.000	0
SRMR	0.0431	0.0044

Table 16: Moderating effects of single demographic variables

Variable	Hypothesis tested	Groups different at the model level?	Groups different at the path level (<i>PIRK</i> > <i>passion</i>)?
Age Bracket	H2	Yes (p=0.084)	Yes (p=0.072)
Gender	H3	Yes (p=0.077)	No
Education Level	H4	Yes (p=0.082)	Yes (p=0.056)

Table17: Factor loadings for PIRK-to-passion – age

Age bracket	<i>PIRK to passion</i> – factor loading
under 35	0.73
35-44	0.813
45-54	0.693
over 55	0.806

Table 18: Factor loadings for PIRK-to-passion – education level

Education level	<i>PIRK to passion</i> – factor loading
Secondary or none	0.679
Post-secondary	0.717
Bachelor's degree	0.73

Post-graduate	0.846
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The results for *gender* suggested that differences may lie elsewhere in the model. These were investigated further, and the estimates for *employment length* in the prediction of both *passion* and *PIRK* were found to be significantly different from zero at the 0.001 level (two-tailed) for women. *Employment status* (permanent, fixed-term, contract, or temporary) was found to have an influence on *PIRK* for women at the 0.1 level, although this result should be treated with caution, given that 96.54 per cent of women in the sample were permanent workers.

For men, the estimates for *employment length* in the prediction of *PIRK* were found to be significantly different from zero at the 0.01 level (two-tailed), although *employment length* was not significant in the prediction of *passion*. However, there was an effect that was significant at the 0.01 level for income in the prediction of *passion* for men.

The other controls were not significantly different for either men or women.

Table 19: Effect of employment length (women)

Women			Estimate	S.E.	C.R.	P
		Control				
<i>PIRK</i>	<---	Occupation	0.002	0.006	0.276	0.783
<i>PIRK</i>	<---	Employment Status	0.21	0.102	2.064	0.039
<i>PIRK</i>	<---	Full/Part-time	0.099	0.074	1.345	0.179
<i>PIRK</i>	<---	Workplace Size	0.006	0.013	0.508	0.611
<i>PIRK</i>	<---	Income	0.024	0.016	1.44	0.15
<i>PIRK</i>	<---	Employment Length	-0.091	0.025	-3.622	***
Passion	<---	Occupation	0	0.003	-0.032	0.975
Passion	<---	Employment Status	-0.02	0.056	-0.363	0.717
Passion	<---	Full/Part-time	0.056	0.04	1.391	0.164
Passion	<---	Workplace Size	-0.008	0.007	-1.198	0.231
Passion	<---	Income	-0.011	0.009	-1.227	0.22
Passion	<---	Employment Length	0.059	0.014	4.151	***

Table 20: Effect of employment length (men)

Men			Estimate	S.E.	C.R.	P
		Control				
<i>PIRK</i>	<---	Occupation	0.004	0.01	0.39	0.697
<i>PIRK</i>	<---	Employment Status	0.029	0.228	0.125	0.9
<i>PIRK</i>	<---	Full/Part-time	0.138	0.213	0.649	0.517
<i>PIRK</i>	<---	Workplace Size	0.025	0.023	1.087	0.277
<i>PIRK</i>	<---	Income	0.034	0.024	1.377	0.169
<i>PIRK</i>	<---	Employment Length	-0.131	0.043	-3.015	0.003
Passion	<---	Occupation	0.008	0.007	1.15	0.25
Passion	<---	Employment Status	0.058	0.15	0.387	0.699
Passion	<---	Full/Part-time	-0.222	0.141	-1.577	0.115
Passion	<---	Workplace Size	-0.02	0.015	-1.29	0.197
Passion	<---	Income	0.038	0.016	2.324	0.02
Passion	<---	Employment Length	0.001	0.029	0.035	0.972

A chi-square difference test comparing the path between *employment length* and *passion* for men and for women confirmed that the difference was significant.

Table 21: Model comparisons for gender - employment length & passion (assuming unconstrained to be correct)

Model	DF	CMIN	P value
Structural weights	1	4.269	0.039

CHAPTER 6 FINDINGS, DISCUSSION & LIMITATIONS

Introduction

This chapter summarises the key results from the previous chapter and discusses how these relate to the high involvement literature and this study's hypotheses. This chapter also explores possible reasons for some of the findings.

Findings & discussion

Initial exploration of the data in the sample indicated that, in comparison to the whole core public service, women were overrepresented. The average length of employment (tenure with the same employer) and income were both lower in the sample than the averages for the sector. This may be due to limiting this study to union members (gender) and to non-managers (gender, tenure and income) and should be borne in mind for interpreting the results. Possible implications of this for the generalisability of this study are discussed later in this chapter.

Respondents were relatively positive about the levels of autonomy they experienced in managing their jobs, but were less positive about their access to information, and about rewards in particular. This reflects other studies of HIWP and *PIRK* in New Zealand (e.g. Boxall & Macky, 2010; Plimmer et al., 2013). Desmond and Plimmer (2014) and Karasek (1990) observe that autonomy has a positive correlation with worker outcomes. The poor perceptions of rewards, particularly in connection to performance, may be a reflection of the fiscal constraints placed on public sector wages (such as the Government's Expectations for Pay and Employment Conditions¹⁰).

Responses to questions about employee outcomes were generally more positive, with high average levels of *job satisfaction* reported, particularly by women, possibly due to the high levels of *power* experienced.

Hypotheses

H1: HIWP will have a positive effect on passion, which is comprised of the employee outcomes of job satisfaction and organisational commitment.

This hypothesis was supported. The use of a higher-order factor for *PIRK* reflects the importance of the collective nature of the attributes in influencing employee outcomes (Boxall & Macky, 2009; Vandenberg et al., 1999; Lawler, 1986). This suggests that the implementation of a system will have a greater effect than a selection of practices.

¹⁰ SSC, 2012.

During the SEM development, the structural model with the best fit was the one that included two higher-order factors – *PIRK* and *passion*. It was found that the presence of *passion* reduced the direct effect of *PIRK* on the first-order factors of *job satisfaction* and *organisational commitment*.

Although Boxall et al. (2015) found that the application of the *PIRK* higher-order factor reduced the adequacy of fit in their model, its use in this particular study did not have a significantly adverse effect on model fit, and supports the idea of a combined effect of the *PIRK* attributes. In fact, the model with the poorest fit was the only one that did not include this higher-order factor.

The effect of the higher-order factor of *passion*, similar to that in Langford's (2009) model, on the relationship between *PIRK* and employee outcomes reflects the interrelated nature of the different employee outcomes. Research indicates relationships between *organisational commitment* and *job satisfaction* (e.g. Boxall et al., 2015; Eby, Freeman, Rush, & Lance, 1999), as well as motivation. Different researchers semantically and theoretically distinguish between the different constructs and their relationships differently but also often overlap. This suggests the usefulness of applying a higher-order factor to describe, as Vandenberg et al. (1999) do, a general concept of "morale".

H2: Age will moderate the relationship between HIWP and passion.

This hypothesis was supported. Previous research suggests that older workers tend to feel more satisfied with their experiences of autonomy and access to information in the workplace (Boxall & Macky, 2010). In this study, age was found to affect the relationship between *PIRK* and *passion*. Due to the relatively small representation of some ages in the sample, age was clustered into only four groups. Nevertheless, the results generally support suggestions in other research, with results showing a reduction around 45-54 but rising again as respondents approached the age of retirement. Interestingly, this is also suggested by results in the New Zealand General Social Survey (MSD, 2016), that found people in their mid-forties to mid-fifties reported a slight reduction in their general life satisfaction, which was followed by an improvement after that age.

H3: Gender will moderate the relationship between HIWP and passion.

It was found that the model was different for men and women, although not for the relationship between *PIRK* and *passion* i.e. the hypothesis was not supported. *Employment length* had an effect on *passion* and on *PIRK* for women, although only on *PIRK* for men. However, *income* had an effect on the prediction of *passion* for men.

H4: Education level will moderate the relationship between HIWP and passion.

This hypothesis was supported. Ryan (2008) observes that a more educated workforce is more driven to seek job satisfaction, and Jones (2015) notes a correlation between education level and

organisational commitment. The results of this study indicate that the influence of *education level* on the relationship between *PIRK* and *passion* increases with the level of education, with the greatest effect being for respondents with a post-graduate qualification. This is particularly pertinent in the public sector because public servants tend to be more highly-educated than the general workforce (Statistics New Zealand, 2013; SSC, 2016).

Effect of employment length

This study was not originally designed to consider the influence of *employment length*, but did raise some interesting findings that are worth exploring. While the average public service employee has been with their employer for 9.2 years, the tenure of a 41.80 per cent of the respondents in this study was 5 years or less. Furthermore, the women in the sample tended to have been with their employer for fewer years than their male counterparts (refer to Figure 10). It is possible that this may have an influence on respondents' level of knowledge about their organisation's work and employment practices (Boxall et al., 2015) and may have affected some responses.

Interestingly, although the sample excluded managers, and employment length was generally shorter than the average for the public sector, the age and education level of respondents were approximately similar to those in the public service.

It should also be noted that women's careers are much more likely to be interrupted, usually by caring responsibilities, than men's. In their examination of social norms, Sabelis and Schilling (2013) consider the prevailing notion of a "linear and cumulative" (p.127) career to be still based on the world of paid work historically dominated by men. Women's workforce participation dips sharply at the birth of a child and then rises again slowly, although not necessarily to pre-childbirth levels, while men's participation and income do not show any marked reduction around the arrival of children (Ministry for Women, 2018).

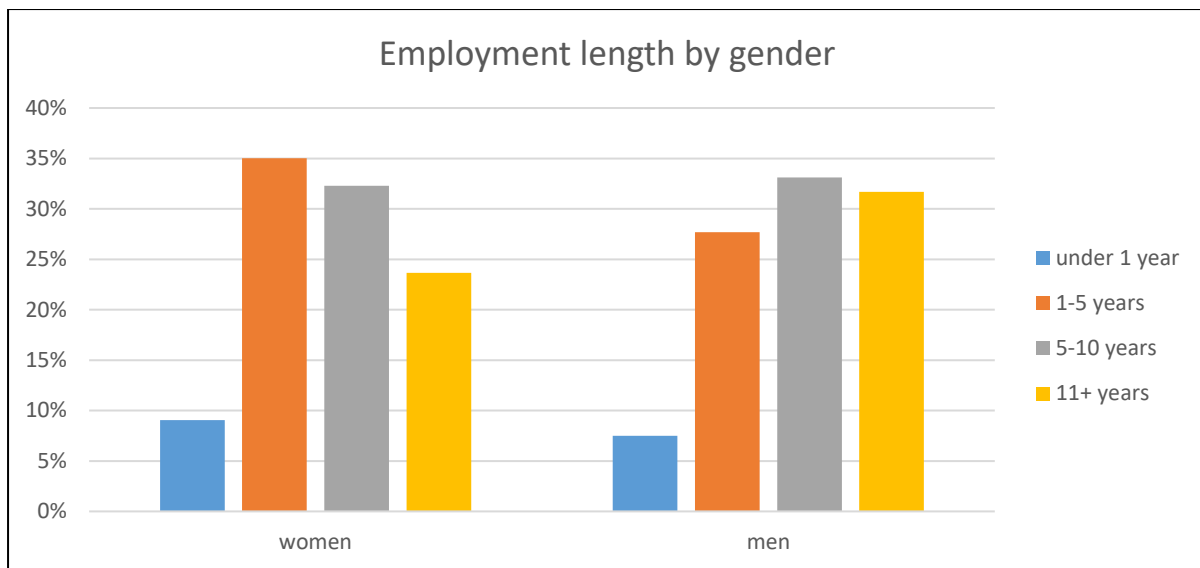


Figure 9: Employment length brackets for men and women in the sample

Effect of Income

The findings regarding the effect of *income* on men's experience of *passion* at work was also noteworthy. Research suggests that men place a greater value on salary than women do, although this may be because women may be taking into account time off or reduced hours for childcare responsibilities when considering their salary (Lips & Lawson, 2009). As indicated in Figure 11, the men in this sample tended to have higher incomes than the women. Some of this may be accounted for by the generally higher employment length of the men in the sample, although the SSC did report an overall gender pay gap of 14.2 per cent in the public service in 2013, and a slightly smaller one for managers at 13.9 per cent. Paradoxically, though, men's and women's mean responses were virtually identical at 2.36 for the item regarding the direct link between performance and pay (PIRK_R3).

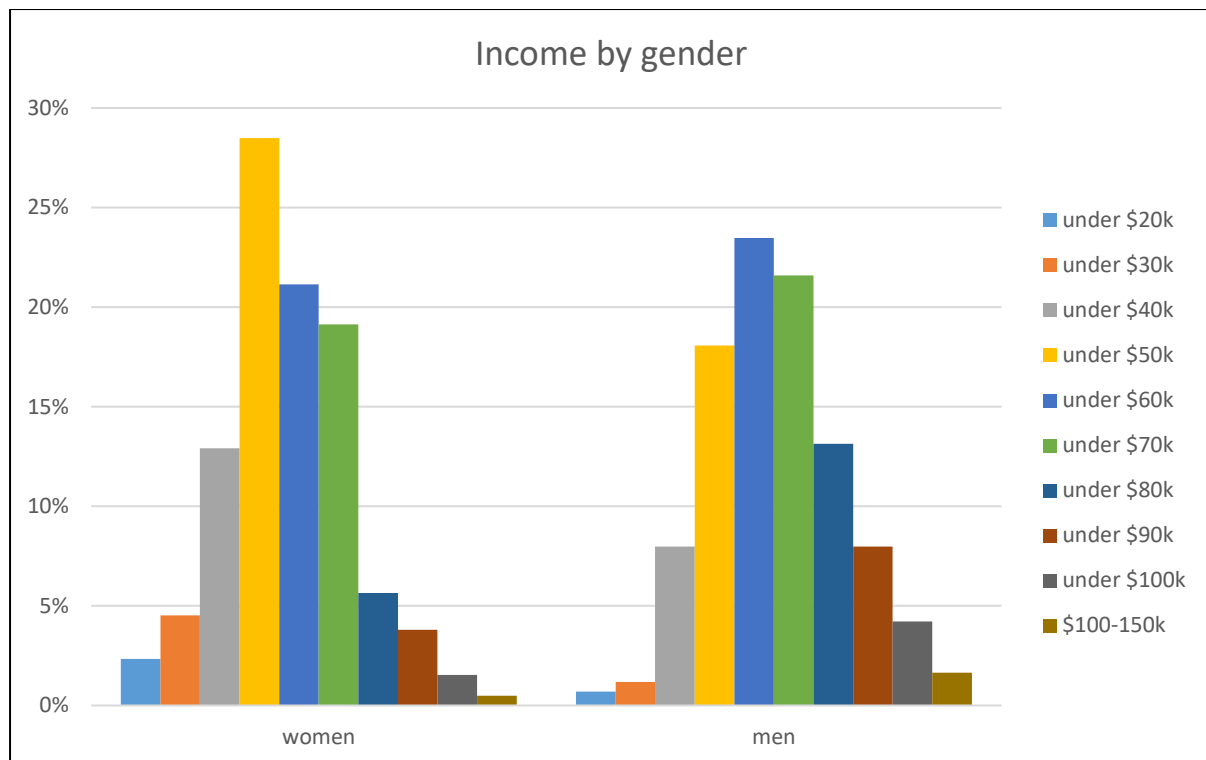


Figure 10: Income brackets for men and women in the sample

Measuring job satisfaction

There were some issues with measuring *job satisfaction*. Compared to the other five constructs, its fit results were relatively poor. They improved somewhat with the removal of JobSat2, although this contradicts some rules of thumb regarding the minimum number of items required to adequately measure a construct (for example, Hair et al., 2010, suggest a minimum of three) and having so few items may reduce the reliability of results and coverage of the construct's theoretical underpinning.

The problems with measurement may be due to different individual understanding of the construct. For example, the three items for the construct asked about both respondents' 'job' (JobSat3) and their 'work' (JobSat1 and JobSat2). Warr et al. (1979) suggest that the former may refer to an individual's current role, whereas the second is more general in nature. Alternatively, individuals may have different expectations of having a satisfying job (Bryson et al., 2014), or may be more inclined to job satisfaction due to influences external to work (Warr et al., 1979).

Limitations

The research looked at the relationship between high involvement work through employees' experiences of *power*, *information*, *rewards* and *knowledge*, and the employee outcomes of *job satisfaction* and *organisational commitment*. Several limitations are acknowledged and these provide the basis for potential future research, which is discussed in Chapter 7.

There is debate about the relative merits of who to survey. Kim and Kang (2013) and Boxall and Macky (2009) observe that employees may be the most knowledgeable about their jobs. However, employees of a particular business unit may not be exposed to the whole scope of organisational activities and hence may not be best placed to provide an overarching organisational perspective (Langford, 2009). In addition, Boxall et al. (2015) suggest that tenure may influence members' knowledge of their organisation's work. Including both views may be more beneficial; for instance, Way's (2002) recommendation to have one group provide data for the dependent variables and a different group to inform researchers about the independent variables.

The sample used in this study had a higher proportion of women, and respondents had both lower incomes and tenure on average when compared to averages for the public service. This may be an effect of the delimitations applied when choosing the sample, particularly the elimination of managers. This may suggest that removing managers had a strong effect on the results. As seen in Figure 2, managers and non-managers reported different experiences of all survey items. The over-representation of women may lead to missing some of the experiences of men in the public service, and there may be similar limitations to being able to generalise to some ethnic groups. For example, there were only 25 Asian men in the sample, compared with 767 New Zealand European women, making it difficult to draw meaningful comparisons.

There may also have been an effect of surveying only union members, including on the gender balance of the sample, given that women are joining unions at a greater rate than men (Kirton, 2017). Union density may vary between organisations even within the public sector. Union membership may have an influence on employees' experiences of *PIRK* as well as some of the outcomes. Unions can facilitate workers' access to information about what is happening in their organisation (Gill & Meyer, 2013), and perhaps also the provision of a voice in the workplace may lead to a greater sense of power. Union membership may also have an influence on job satisfaction. Laroche and Salesina's (2017) systematic review of the effects of unionism on HPWS suggested dissatisfied workers were more likely to join a union, although union membership itself did not affect job satisfaction. There may also be elements of non-response bias; that is, those who agree to be in a sample are intrinsically different to those who decline. O'Leary (2014, p. 187) suggests that those who have an "axe to grind" may be more likely to agree to participate in a survey.

There may also be limitations to generalising these findings to the wider working population in New Zealand, which is generally younger, less well-paid, less well-educated, and more ethnically diverse (Statistics New Zealand, 2013, 2015) than the public sector. Furthermore, union density is higher in the public sector than the private. In 2016, the New Zealand public sector's union membership was

60 per cent, higher than in Australia, the UK and the US, and significantly higher than the national density of 17.7 per cent (Ryall & Blumenfeld, 2016). In addition, as suggested earlier, national culture may affect workers' experiences of *PIRK* (Chen et al., 2018; Boxall & Macky, 2010). These factors may limit generalisability across the New Zealand workforce or other national contexts.

This study applies data from a 2013 survey by Victoria University and the PSA and uses a subsample of the survey's data in order to focus on the relationship between HIWP and employee outcomes. Using existing data in research can allow the researcher to ask "new questions from old data" (O'Leary, 2014, p. 255). In this particular work, the rigour and relevance has already be settled, by way of the PSA practitioner in-house knowledge and the academic rigour brought by the University, and hence "items are anchored to known conceptual bases" (Vandenberg in Hurley et al., 1997, p. 675). It also allows access to participant groups and large sample sizes (McCall et al., 1991), and is based on previously validated measures.

However, there are also drawbacks. When the design (such as the choice of scales and items) is done by others, the new researcher does not have the opportunity to make decisions, or explore data as it comes in and refine the approach or ask follow-up questions to gain more depth (O'Leary, 2014). Furthermore, someone else has made decisions about managing and processing missing data, and about how to control for biases (both during survey development and data processing). The original survey covered many domains but in less depth than the focus of the research questions in this study, which have been somewhat driven and constrained by the data gathered. As discussed earlier, working with existing data means that the researcher is unable to refine measures and collect new data, which might otherwise have helped to address some of the problems found with the measurement of the *job satisfaction* construct, for example.

The size of the sample also presented challenges for assessing model fit. Hair et al. (2010) suggest that more complex models with large samples should be assessed against different thresholds for Goodness-of-Fit measures to those traditionally considered acceptable. This, however, places increased responsibility on the researcher to carefully avoid making spurious conclusions in their assessment of results. Hair et al. (2010) also note that reducing sample size to improve model fit may reduce representativeness and generalisability.

The SPSS AMOS module also revealed its limitations for the analysis of complex relationships. For example, it proved difficult to test intersectionality meaningfully, as the software would not allow groups below a certain size. For example, being to test the simultaneous effects of employment length and gender may have provided some useful insights into whether women's experiences of *PIRK* and *passion* rise as their tenure with their employer does.

Finally, Jakobsen and Jensen (2015) observe that, despite the common usage of the survey to collect data for public management research, it also introduces the risk of common method bias. They also note risks of abstractness and social desirability influence on self-reported ratings of motivation, commitment, trust and attitudes. However, although Podsakoff et al. (2003) tend to agree about the existence of some of these risks, they do observe that social desirability bias is less prevalent in paper or computer surveys than in face-to-face interviews.

CHAPTER 7 CONCLUSIONS & FUTURE RESEARCH

Introduction

This chapter highlights the key findings of this study and its contributions, and makes recommendations for future research.

Key findings & contributions

This study largely supports the broader theory around high involvement and its positive influence on employee outcomes, as advanced by Lawler (1986), Vandenberg et al. (1999) and others. The relative strength of the model that contained a higher-order factor for *PIRK* emphasises the importance of the mutually reinforcing nature of the *PIRK* attributes to support involvement. Results of this study indicate that employees report they feel they have reasonable levels of empowerment over their work, but poor experiences regarding information about processes, quality, customer feedback, event and business results, and very poor experiences of the links between rewards and business results and growth in capability and contribution. This suggests that organisations wishing to enhance employee outcomes (and, consequently, organisational effectiveness) could consider how to enhance employees' experiences of information and rewards to better complement the relatively high levels of autonomy.

The effectiveness of this model, with one higher-order factor influencing another, also promotes the utility of the factor *passion*, which describe the overlapping nature of employee outcomes like job satisfaction and organisational commitment, aligned to the collective concept of employee morale (Vandenberg et al., 1999).

As with other psychological phenomena, the context and the role of the individual are important in understanding responses to high involvement. In this study, age was found to influence how *PIRK* affects *passion*, with the strongest influence occurring for older workers. Education level was also found to have a positive effect on the *PIRK-passion* relationship.

Gender was not found to affect the *PIRK-passion* relationship in the model. However, it was found that employment length was an important factor in how women experience both *PIRK* and *passion*. Women in the sample generally had spent less time with their current employer and had a lower income than both the public sector average and the men in the sample. It was suggested that social or cultural factors may influence the shorter employment length for women, and that these factors may all collectively contribute to the importance of employment length for women in the model.

Employment length had some effect for men on *PIRK*, but income had a strong effect on men's experience of *passion* at work.

This study provides a meaningful contribution in several ways. Firstly, it focuses specifically on HIWP in contexts that have typically been under-researched: New Zealand, and in particular the experiences of employees in the New Zealand public service. It has also looked at the public service as a system, rather than as individual agencies, which supports recent moves towards the development of a more unified approach in the state sector and collective action around shared goals (SSC, 2017).

Secondly, it reinforces research suggesting that higher involvement of workers in organisational decision-making, including training and rewarding them appropriately, can have positive implications for satisfaction and commitment, and, as other research suggests, subsequently for organisational performance. This HIWP-outcomes link may be moderated by other influences, such as certain demographic factors.

Thirdly, this study provides useful methodological insights into the use of SEM and higher-order factors in exploring the relationship between *PIRK* and employee outcomes.

Recommendations for future research

While this study provided useful insights into the experiences of employees in the public service, future studies could broaden both the sample and the methods employed.

For example, the sample for this study underrepresented some groups, such as Asian and Pasifika employees. A more rigorous sampling strategy could be designed to get both a more representative sample, and potentially also be structured in such a way as to test intersectionality. Future researchers could also consider including non-union members and managers. Future researchers may also like to consider a smaller sample size, if appropriate, which could ameliorate some of the issues associated with very large samples, such as software limitations and Goodness-of-Fit measures.

In addition, as discussed earlier, seeking input for both the dependent and independent variables from the same source is not without its pitfalls. Future studies could seek input from a variety of sources about what practices are in place and, separately, how these are received. Care should be taken around the wording and measurement of job satisfaction, to avoid conflating it with other constructs, either external or measured in the study. Survey data could be complemented by qualitative research gathered through interviews or focus groups.

Furthermore, conducting longitudinal studies, or at least regular studies of HIWP in the sector population, may be beneficial to observe change over time. The 2013 survey was a snapshot in time,

and given government employment policy shifts over the last five years (such as changes to Better Public Services targets), as well as increased PSA support for HIWP (PSA, 2014), understanding whether and how substantive change has occurred is important.

The influence of factors such as age, education level, and gender, as well as gender's interaction with employment length and income, are worthy of further research, and may also have implications for practice. As noted, the majority of the public service population is female and tends to be clustered in lower-paid occupations (despite being comparatively well educated on average), as evidenced by the enduring gender pay gap. The workforce is also aging. Managers, HR professionals and workforce planners should carefully consider how the composition of the public service is changing, the effects these changes may have on employees' experiences of HIWP and outcomes, and how best to manage future recruitment and retention accordingly. This is particularly pertinent with regards to links between performance and rewards.

Finally, this researcher has found that the terminology of HIWP and similar concepts is not widely understood outside of academia. Vandenberg et al.'s (1999) approach of proposing categories of such practices could be one way to generate interest and practical understanding. In addition, managers want to know practical ways of putting high involvement into practice (*ibid.*), so this approach could usefully provide illustrations. A New Zealand lexicon would be useful, to reflect some of the social and cultural considerations in this country, particularly in a field that is largely dominated by research from overseas.

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APPENDICES

Appendix 1: Descriptive statistics for survey items

Construct	Question item (from Plimmer et al., 2013)		(responses were measured on a 5-point Likert scale, with over 3 indicating agreement and under 3 indicating disagreement)			
		Variable name	Mean	Median	Mode	Std Dev
Power	I have sufficient authority to fulfil my job responsibilities	PIRK_P1	3.62	4	4	0.87
	I have enough input in deciding how to accomplish my work.	PIRK_P2	3.59	4	4	0.93
	I am encouraged to participate in decisions that affect me.	PIRK_P3	3.36	4	4	1.04
	I have enough freedom over how I do my job.	PIRK_P4	3.50	4	4	0.98
	I have enough authority to make decisions necessary to provide quality customer service.	PIRK_P5	3.46	4	4	0.97
	I am encouraged to participate in and make decisions that affect my day-to-day activities.	PIRK_P6	3.52	4	4	0.95
	I am given enough authority to act and make decisions about my work.	PIRK_P7	3.46	4	4	0.97
Information	Organisational policies and procedures are clearly communicated to employees	PIRK_I1	3.14	3	4	1.01
	Management gives sufficient notice to employees prior to making changes in policies and procedures.	PIRK_I2	3.14	3	4	1.00
	I receive sufficient notice of changes that affect my work group.	PIRK_I3	2.83	3	4	1.04
	Management takes time to explain to employees the reasoning behind critical decisions that are made.	PIRK_I4	2.92	3	4	1.04
	Management is adequately informed of the important issues in my work area.	PIRK_I5	2.82	3	3	1.08

	Management makes a sufficient effort to get the opinions and feelings of people who work here.	PIRK_I6	3.14	3	4	1.01
	Management tends to stay informed of employee needs.	PIRK_I7	2.71	3	2	1.09
	The channels of employee communication with top management are effective.	PIRK_I8	2.74	3	3	1.01
	Top management communicates a clear organisational mission and how each part of the organisation contributes to achieving that mission.	PIRK_I9	2.52	2	2	1.02
	Employees of this company work toward common organisational goals.	PIRK_I10	2.96	3	3	1.03
<i>Rewards</i>	My performance evaluations within the past few years have been helpful to me in my professional development.	PIRK_R1	2.90	3	4	1.10
	There is a strong link between how well I perform my job and the likelihood of receiving recognition and praise.	PIRK_R2	2.85	3	4	1.14
	There is a strong link between how well I perform my job and the likelihood of receiving a raise in pay/salary.	PIRK_R3	2.37	2	2	1.17
	There is a strong link between how well I perform my job and the likelihood of receiving high performance appraisal ratings.	PIRK_R4	2.82	3	4	1.16
	Generally, I feel this organisation rewards employees who make an extra effort.	PIRK_R5	2.33	2	2	1.05
	I am satisfied with the amount of recognition I receive when I do a good job.	PIRK_R6	2.67	3	3	1.06
	If I perform my job well, I am likely to be promoted.	PIRK_R7	1.94	2	1	0.92
<i>Knowledge</i>	I am given a real opportunity to improve my skills at this organisation through education and training programmes.	PIRK_K1	3.07	3	4	1.11
	I have had sufficient job-related training.	PIRK_K2	3.24	4	4	1.05
	My supervisor has helped me acquire additional job-related training when I needed it.	PIRK_K3	3.21	3	4	1.06

	I receive ongoing training, which enables me to do my job better.	PIRK_K4	3.06	3	4	1.05
	I am satisfied with the number of training and development programmes available to me.	PIRK_K5	2.91	3	4	1.09
	I am satisfied with the quality of training and development programmes available to me.	PIRK_K6	2.98	3	4	1.07
	The training & educational activities I have received enable me to perform my job more effectively.	PIRK_K7	3.27	3	4	1.00
	Overall, I am satisfied with my training opportunities.	PIRK_K8	2.96	3	4	1.12
<i>Job Satisfaction</i>	My work gives me a feeling of personal accomplishment.	JobSat1	4.40	4	4	0.55
	I like the kind of work I do.	JobSat2	4.09	4	4	0.84
	I am satisfied with my job.	JobSat3	3.78	4	4	0.92
<i>Organisational Commitment</i>	I feel a sense of loyalty and commitment to this organisation.	OrgCom1	3.57	4	4	1.01
	I am proud to tell people that I work for this organisation.	OrgCom2	3.50	4	4	1.02
	I feel emotionally attached to this organisation.	OrgCom3	3.04	3	3	1.07
	I am willing to put in extra effort for this organisation.	OrgCom4	3.72	4	4	0.95

Appendix 2: Agencies in the core New Zealand Public Service, from Schedule 1 of the State Sector Act 1988 as at 1 July 2013.

(Note: not all were represented in this study's sample)

Canterbury Earthquake Recovery Authority

Crown Law Office

Department of Conservation

Department of Corrections

Department of Internal Affairs

Department of the Prime Minister and Cabinet

Education Review Office

Government Communications Security Bureau

Inland Revenue Department

Land Information New Zealand

Ministry for Culture and Heritage

Ministry for Primary Industries

Ministry for the Environment

Ministry of Business, Innovation, and Employment

Ministry of Defence

Ministry of Education

Ministry of Foreign Affairs and Trade

Ministry of Health

Ministry of Justice

Ministry of Maori Development

Ministry of Pacific Island Affairs

Ministry of Social Development

Ministry of Transport

Ministry of Women's Affairs

New Zealand Customs Service

Serious Fraud Office

State Services Commission

Statistics New Zealand

The Treasury

Appendix 3: Demographics of the sample

N=1,665 (complete responses)

Age

Mean age: 45.18

Standard deviation: 11.71

Age bracket	Frequency	Per cent
24 and under	35	2.10%
25-29	156	9.37%
30-34	181	10.87%
35-39	199	11.95%
40-44	213	12.79%
45-49	208	12.49%
50-54	254	15.26%
55-59	226	13.57%
60-64	127	7.63%
65+	66	3.96%

Ethnicity¹¹

Ethnic group	Frequency	Per cent
African/Latin American/Middle Eastern (MELA)	11	0.66%
Asian	85	5.11%
NZ European	1016	61.02%
Other European	173	10.39%
Māori	279	16.76%
Pacific Peoples (Pasifika)	101	6.07%

¹¹ In the original survey, respondents were also given the option to choose multiple ethnicities, or to use their own wording to describe the ethnic group(s) with which they most identified, however these responses were removed during imputation.

Gender

	Frequency	Per cent
Female	1239	74.41%
Male	426	25.59%

Income

Gross income brackets (NZ\$)	Frequency	Per cent
Less than \$20,000	32	1.92%
\$20,001 - \$30,000	61	3.66%
\$30,001 - \$40,000	194	11.65%
\$40,001 - \$50,000	430	25.83%
\$50,001 - \$60,000	362	21.74%
\$60,001 - \$70,000	329	19.76%
\$70,001 - \$80,000	126	7.57%
\$80,001 - \$90,000	81	4.86%
\$90,001 - \$100,000	37	2.22%
\$100,001 - \$150,000	13	0.78%

Occupation

Occupational group (respondent's main paid job)	Frequency	Per cent
Clerical/Administrative	477	28.65%
Contact/Call Centre	136	8.17%
Inspection/Regulation	98	5.89%
Labourer/Machinery Operator/Driver	10	0.60%
Manager ¹²	1	0.06%
Professional	6	0.36%
Registered Social, Health or Education Professional	276	16.58%
Sales	371	22.28%
Scientist	11	0.66%

¹² Possibly those who manage aspects of their organisation's functions or projects, rather than managing people, given that the sample was selected based on responses to a question about responsibilities for managing people.

Technician/Trades Worker	47	2.82%
Community or Personal Service Worker	45	2.70%

Workplace size¹³

Size brackets (number of people)	Frequency	Per cent
1	5	0.30%
2-4	71	4.26%
5-9	128	7.69%
10-49	529	31.77%
50-99	209	12.55%
100-249	240	14.41%
250-499	209	12.55%
500+	274	16.46%

Tenure (Length of time with current employer)

Time brackets (years)	Frequency	Per cent
Less than 1	144	8.65%
1-5	552	33.15%
5-10	541	32.49%
11 or more	428	25.71%

Employment status

	Frequency	Per cent
Permanent	1610	96.70%
Contract	52	3.12%
Self-employed or Temp	3	0.18%

¹³ Respondents were asked about “the site or geographical location at, or from, which you work “. Hence, this may not represent the size of whole ministry/department. For analysis, responses were categorised as large (83.36 per cent), medium (13.75 per cent) or small (2.88 per cent) organisation, according to department size by headcount in 2013.

Full/Part time

	Frequency	Per cent
Full (30 hours or more per week)	1492	89.61%
Part (less than 30 hours per week)	173	10.39%

Education level

	Frequency	Per cent
No qualifications	71	4.26%
Secondary qualification	344	20.66%
Post-secondary certificate/ Trade certificate/ Diploma	478	28.71%
Bachelor's Degree	456	27.39%
Post-graduate qualification (e.g., MA, PhD)	316	18.98%

Appendix 4: EFA Pattern Matrix

Pattern Matrix ^a						
	Factor					
	1	2	3	4	5	6
Percentage of variance (extraction sum of squared loadings)	37.077	6.925	5.612	5.043	4.071	2.088
PIRK_P1				-.657		
PIRK_P2				-.789		
PIRK_P3				-.533		
PIRK_P4				-.777		
PIRK_P5				-.789		
PIRK_P6				-.709		
PIRK_P7				-.851		
PIRK_I1	.607					
PIRK_I2	.821					
PIRK_I3	.721					
PIRK_I4	.804					
PIRK_I5	.563					
PIRK_I6	.744					
PIRK_I7	.729					
PIRK_I8	.682					
PIRK_I9	.663					
PIRK_I10	.479					
PIRK_R1					.511	
PIRK_R2					.776	
PIRK_R3					.885	
PIRK_R4					.792	
PIRK_R5					.721	
PIRK_R6					.599	
PIRK_R7					.541	
PIRK_K1		-.796				
PIRK_K2		-.685				

Appendix 5: Correlated errors in the model & associated rationale

Items	Questions (from Plimmer et al., 2013)	Rationale for correlating
<i>Power</i>		
PIRK_P7 with: <ul style="list-style-type: none"> PIRK_P6 PIRK_P5 PIRK_P4 	I am given enough authority to act and make decisions about my work. <ul style="list-style-type: none"> I am encouraged to participate in and make decisions that affect my day-to-day activities. I have enough authority to make decisions necessary to provide quality customer service. I have enough freedom over how I do my job. 	Similar topic - relates to employee experiencing support from the organisation to make decisions and act on them in order to complete tasks.
PIRK_P6 with: PIRK_P3	I am encouraged to participate in and make decisions that affect my day-to-day activities. I am encouraged to participate in decisions that affect me.	Similar wording (“encouraged to”, “participate in”, “decisions that affect”). If they perceive the formats to be similar, respondents may apply cognition generated from the previous question (Feldman & Lynch, 1988) i.e. respond in a similar way despite subtle differences in the question content.
PIRK_P4 with: PIRK_P2	I have enough freedom over how I do my job. I have enough input in deciding how to accomplish my work.	Similar topic - relates to latitude in decision-making.
PIRK_P1 with: PIRK_P5	I have sufficient authority to fulfil my job responsibilities. I have enough authority to make decisions necessary to provide quality customer service.	Similar topic – relates to having sufficient authority to do one’s job.

<i>Information</i>		
PIRK_I10 with: PIRK_I9	<p>Employees of this company work toward common organisational goals.</p> <p>Top management communicates a clear organisational mission and how each part of the organisation contributes to achieving that mission.</p>	Similar topic - relates to understanding organisational goals.
PIRK_I7 with: <ul style="list-style-type: none"> PIRK_I8 PIRK_I6 	<p>Management tends to stay informed of employee needs.</p> <ul style="list-style-type: none"> The channels of employee communication with top management are effective. Management makes a sufficient effort to get the opinions and feelings of people who work here. 	Similar topic - relates to management having access to information that is important to employees.
PIRK_I3 with: PIRK_I2	<p>I receive sufficient notice of changes that affect my work group.</p> <p>Management gives sufficient notice to employees prior to making changes in policies and procedures.</p>	Similar wording (“sufficient notice”, “changes”). If they perceive the formats to be similar, respondents may apply cognition generated from the previous question (ibid.) i.e. respond in a similar way despite subtle differences in the question content.
PIRK_I2 with: PIRK_I1	<p>Management gives sufficient notice to employees prior to making changes in policies and procedures.</p> <p>Organisational policies and procedures are clearly communicated to employees</p>	Similar topic - relates to the communication of “policies and procedures”.

<i>Rewards</i>		
PIRK_R5 with: PIRK_R3	Generally, I feel this organisation rewards employees who make an extra effort. There is a strong link between how well I perform my job and the likelihood of receiving a raise in pay/salary.	Similar topic - relates to pay-performance connection, with monetary rewards being one of the most easily recognised kinds of work-related reward.
PIRK_R3 with: <ul style="list-style-type: none"> PIRK_R4 PIRK_R2 Also PIRK_R4 with PIRK_R2.	<p>There is a strong link between how well I perform my job and the likelihood of receiving a raise in pay/salary.</p> <ul style="list-style-type: none"> There is a strong link between how well I perform my job and the likelihood of receiving high performance appraisal ratings. There is a strong link between how well I perform my job and the likelihood of receiving recognition and praise. 	Very similar wording and sentence structure. If they perceive the formats to be similar, respondents may apply cognition generated from the previous question (ibid.) i.e. respond in a similar way despite subtle differences in the question content.
<i>Knowledge</i>		
PIRK_K6 with: PIRK_K5	<p>I am satisfied with the quality of training and development programmes available to me.</p> <p>I am satisfied with the number of training and development programmes available to me.</p>	Very similar wording and sentence structure. If they perceive the formats to be similar, respondents may apply cognition generated from the previous question (ibid.) i.e. respond in a similar way despite subtle differences in the question content.
<i>Organisational Commitment</i>		
All of these items were connected by their reference to the organisation; however, it was decided that they all reflect slightly different concepts that collectively contributed to the construct of organisational commitment, rather than overlapping in meaning.		

Appendix 6: Standardised Regression Weights/ factor loadings for measurement model – both bootstrapped and unbootstrapped

Parameter		Standardised Regression Weight/ factor loading	Bootstrap Results					
			Mean	Upper	Lower	S.E.	Bias	P
Power	PIRK	0.783	0.783	0.807	0.757	0.015	0.000	0.000
Information	PIRK	0.857	0.857	0.877	0.836	0.012	0.000	0.000
Rewards	PIRK	0.810	0.809	0.832	0.786	0.014	0.000	0.000
Knowledge	PIRK	0.684	0.683	0.710	0.656	0.016	0.000	0.000
Job Satisfaction	Passion	0.795	0.795	0.834	0.754	0.024	0.000	0.000
Organisational Commitment	Passion	0.764	0.764	0.798	0.730	0.021	0.000	0.000
PIRK_P1	Power	0.691	0.691	0.715	0.666	0.015	0.000	0.000
PIRK_P2	Power	0.817	0.817	0.834	0.799	0.011	0.000	0.000
PIRK_P3	Power	0.755	0.755	0.776	0.733	0.013	0.000	0.000
PIRK_P4	Power	0.751	0.751	0.772	0.729	0.013	0.000	0.000
PIRK_P5	Power	0.740	0.740	0.761	0.717	0.013	0.000	0.000
PIRK_P6	Power	0.782	0.781	0.801	0.761	0.012	0.000	0.000
PIRK_P7	Power	0.797	0.797	0.815	0.778	0.011	0.000	0.000
PIRK_I1	Information	0.664	0.664	0.688	0.639	0.015	0.000	0.000
PIRK_I2	Information	0.710	0.710	0.732	0.687	0.014	0.000	0.000
PIRK_I3	Information	0.733	0.733	0.754	0.711	0.013	0.000	0.000
PIRK_I4	Information	0.777	0.777	0.796	0.758	0.011	0.000	0.000
PIRK_I5	Information	0.600	0.600	0.627	0.572	0.017	0.000	0.000
PIRK_I6	Information	0.787	0.787	0.804	0.768	0.011	0.000	0.000
PIRK_I7	Information	0.784	0.784	0.802	0.765	0.011	0.000	0.000
PIRK_I8	Information	0.785	0.785	0.803	0.766	0.011	0.000	0.000
PIRK_I9	Information	0.692	0.692	0.715	0.667	0.015	0.000	0.000
PIRK_I10	Information	0.627	0.626	0.653	0.598	0.016	0.000	0.000
PIRK_R1	Rewards	0.683	0.683	0.708	0.657	0.015	0.000	0.000
PIRK_R2	Rewards	0.753	0.753	0.774	0.731	0.013	0.000	0.000
PIRK_R3	Rewards	0.628	0.628	0.656	0.598	0.018	0.000	0.000

PIRK_R4	Rewards	0.711	0.710	0.734	0.685	0.015	0.000	0.000
PIRK_R5	Rewards	0.795	0.795	0.813	0.776	0.011	0.000	0.000
PIRK_R6	Rewards	0.795	0.795	0.813	0.776	0.011	0.000	0.000
PIRK_R7	Rewards	0.652	0.652	0.678	0.624	0.016	0.000	0.000
PIRK_K1	Knowledge	0.835	0.834	0.848	0.821	0.008	0.000	0.000
PIRK_K2	Knowledge	0.735	0.735	0.754	0.715	0.012	0.000	0.000
PIRK_K3	Knowledge	0.710	0.710	0.731	0.688	0.013	0.000	0.000
PIRK_K4	Knowledge	0.836	0.836	0.850	0.823	0.008	0.000	0.000
PIRK_K5	Knowledge	0.884	0.884	0.894	0.873	0.006	0.000	0.000
PIRK_K6	Knowledge	0.859	0.859	0.871	0.847	0.007	0.000	0.000
PIRK_K7	Knowledge	0.769	0.768	0.786	0.750	0.011	0.000	0.000
PIRK_K8	Knowledge	0.939	0.939	0.946	0.933	0.004	0.000	0.000
JobSat1	Job Satisfaction	0.629	0.629	0.660	0.595	0.020	0.000	0.000
JobSat3	Job Satisfaction	0.918	0.918	0.951	0.887	0.020	0.001	0.000
OrgCom1	Organisational Commitment	0.880	0.880	0.893	0.866	0.008	0.000	0.000
OrgCom2	Organisational Commitment	0.822	0.822	0.838	0.805	0.010	0.000	0.000
OrgCom3	Organisational Commitment	0.731	0.731	0.752	0.708	0.013	0.000	0.000
OrgCom4	Organisational Commitment	0.784	0.784	0.802	0.764	0.011	0.000	0.000

Appendix 7: Standardised Regression Weights / factor loadings for structural model – both bootstrapped and unbootstrapped

Parameter		Bootstrap Results						
		Estimate	Mean	Lower	Upper	S.E.	Bias	P
Power	PIRK	0.783	0.782	0.757	0.807	0.015	0.000	0.000
Information	PIRK	0.857	0.857	0.837	0.877	0.012	0.000	0.000
Rewards	PIRK	0.810	0.809	0.786	0.832	0.014	0.000	0.000
Knowledge	PIRK	0.684	0.684	0.656	0.711	0.017	0.000	0.000
Passion	PIRK	0.729	0.729	0.694	0.763	0.021	0.000	0.000
Job Satisfaction	Passion	0.795	0.794	0.753	0.835	0.025	-0.001	0.000
Organisational Commitment	Passion	0.764	0.764	0.729	0.798	0.021	0.000	0.000
JobSat1	Job Satisfaction	0.629	0.628	0.594	0.66	0.020	0.000	0.000
JobSat3	Job Satisfaction	0.918	0.919	0.887	0.952	0.020	0.001	0.000
OrgCom1	Organisational Commitment	0.880	0.880	0.866	0.893	0.008	0.000	0.000
OrgCom2	Organisational Commitment	0.822	0.822	0.805	0.838	0.010	0.000	0.000
OrgCom3	Organisational Commitment	0.731	0.731	0.708	0.752	0.013	0.000	0.000
OrgCom4	Organisational Commitment	0.784	0.783	0.765	0.801	0.011	0.000	0.000
PIRK_P1	Power	0.691	0.690	0.665	0.715	0.015	0.000	0.000
PIRK_P2	Power	0.817	0.817	0.799	0.834	0.011	0.000	0.000
PIRK_P3	Power	0.755	0.755	0.732	0.776	0.013	0.000	0.000
PIRK_P4	Power	0.751	0.751	0.728	0.772	0.013	0.000	0.000
PIRK_P5	Power	0.740	0.739	0.717	0.761	0.014	0.000	0.000
PIRK_P6	Power	0.782	0.781	0.761	0.801	0.012	0.000	0.000
PIRK_P7	Power	0.797	0.797	0.778	0.815	0.011	0.000	0.000
PIRK_I1	Information	0.664	0.665	0.639	0.689	0.015	0.000	0.000
PIRK_I2	Information	0.710	0.710	0.686	0.732	0.014	0.000	0.000

PIRK_I3	Information	0.733	0.733	0.711	0.754	0.013	0.000	0.000
PIRK_I4	Information	0.777	0.777	0.758	0.796	0.012	0.000	0.000
PIRK_I5	Information	0.600	0.600	0.572	0.628	0.017	0.000	0.000
PIRK_I6	Information	0.787	0.787	0.768	0.804	0.011	0.000	0.000
PIRK_I7	Information	0.784	0.784	0.765	0.802	0.011	0.000	0.000
PIRK_I8	Information	0.785	0.785	0.766	0.803	0.011	0.000	0.000
PIRK_I9	Information	0.692	0.692	0.668	0.715	0.014	0.000	0.000
PIRK_I10	Information	0.627	0.627	0.599	0.653	0.016	0.000	0.000
PIRK_R1	Rewards	0.683	0.683	0.657	0.708	0.016	0.000	0.000
PIRK_R2	Rewards	0.753	0.753	0.731	0.774	0.013	0.000	0.000
PIRK_R3	Rewards	0.628	0.628	0.599	0.657	0.018	0.000	0.000
PIRK_R4	Rewards	0.711	0.711	0.686	0.734	0.015	0.000	0.000
PIRK_R5	Rewards	0.795	0.795	0.776	0.814	0.011	0.000	0.000
PIRK_R6	Rewards	0.795	0.795	0.776	0.814	0.011	0.000	0.000
PIRK_R7	Rewards	0.652	0.653	0.625	0.679	0.016	0.000	0.000
PIRK_K1	Knowledge	0.835	0.835	0.821	0.848	0.008	0.000	0.000
PIRK_K2	Knowledge	0.735	0.735	0.715	0.754	0.012	0.000	0.000
PIRK_K3	Knowledge	0.710	0.710	0.688	0.731	0.013	0.000	0.000
PIRK_K4	Knowledge	0.836	0.836	0.823	0.85	0.008	0.000	0.000
PIRK_K5	Knowledge	0.884	0.884	0.873	0.894	0.006	0.000	0.000
PIRK_K6	Knowledge	0.859	0.859	0.847	0.871	0.007	0.000	0.000
PIRK_K7	Knowledge	0.769	0.768	0.75	0.786	0.011	0.000	0.000
PIRK_K8	Knowledge	0.939	0.939	0.932	0.945	0.004	0.000	0.000