Thesis title:

The Diminishing State of School Leader Wellbeing: The Impact of Policy and Passion

Marcus Horwood

S00077663

Marcus.horwood@myacu.edu.au

Australian Catholic University

Institute for Positive Psychology and Education

PhD Thesis

Supervisory Panel

Principal Supervisor: Professor Herbert Marsh

Co-Supervisor: Professor Philip Parker

Co-Supervisor: Dr Theresa Dicke

Assistant Supervisor: Dr Jiesi Guo

Contents

List of Figures

List of Tables

Table of Abbreviations

ABS	Australian Bureau of Statistics
ACARA	Australian Curriculum, Assessment and Reporting Authority
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
COPSOQ	Copenhagen Psychosocial Questionnaire II
DID	Difference-in-differences
ELS	Empowering Local Schools National Partnership
GERM	Global Education Reform Movement
JD-R	Job Demands-Resources
LSLD	Local Schools Local Decisions
NAPLAN	National Assessment Program - Literacy and Numeracy
OECD	Organisation for Economic Co-operation and Development
PISA	Program for international Student Assessment
Principal Survey	Australian Principal Occupational Health, Safety and Wellbeing Survey
RMSEA	Root Mean Squared Error of Approximation
SEIFA	Socio-economic Indexes of Areas
SEM	Structural Equation Modelling
SES	Socio-economic Status
Set-ESEM	Set-Exploratory Structural Equation Model
SRMR	Standardised Root Mean Square Residual
TLI	Tucker-Lewis Index

Statement of Authorship and Sources

This thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma.

No parts of this thesis have been submitted towards the award of any other degree or diploma in any other tertiary institution.

No other person's work has been used without due acknowledgement in the main text of the thesis.

All work contained in this thesis is the original work of the candidate. Although Study 3 was co-authored by the candidate and his supervisors, the significant additions by his supervisors, currently under review by a peer-reviewed journal, have been excluded from this thesis.

Marcus Horwood

Statement of Appreciation and Dedication

It is difficult to express how appreciative I am for the consistent and dedicated support I have received from Prof. Herb Marsh, Prof. Phil Parker, Dr. Theresa Dicke, and Dr. Jiesi Guo throughout my PhD journey. Starting this thesis without a background in statistics, you all very patiently assisted me in developing the skills I needed.

Prof. Herb Marsh, I would like to specifically note how grateful I am for you taking a chance on me as being your student, in addition to providing me with experience and exposure to other research projects. You dedicated a lot of time to my cause, both professionally and personally, and I wouldn't be where I am today without all your assistance.

Dr. Phil Parker, likely my harshest critic, I am thankful for your candour and high expectations you placed on me. My thesis would not be at the quality it is without your high expectations, and the investment you placed in me to ensure I understood the theoretical and methodological concepts. Your suggestions and support with my thesis have resulted in a quality of work I did not perceive possible with my skillset at the beginning of my journey.

Dr. Theresa Dicke, although it now seems like a distant memory, you provided me with huge support at the beginning of my PhD, helping me to understand the fundamental statistical concepts and how to use the statistical packages. Without your saint like patience with my frequent mundane questioning, I am not sure how I would have done my thesis.

Dr Jiesi Guo, I cannot fathom the amount of time we have spent together with you helping me with my thesis, and working together on other studies. You have been greatly patient and taught me many skills I am sure I will benefit from greatly in the future. With our frequent coffee catch ups, I consider you a true friend that helped me tough out the harder times of my PhD journey.

I also wish to thank Prof. Phil Riley for the guidance you provided me and for allowing me to be part of your project. Even though you were not formally one of my supervisors, you definitely played the part and supported me through my journey.

I wish to thank my friends and colleagues at the Institute for Positive Psychology and Education. I am blessed to have had the opportunity to work in such a supportive and inspiring environment. I started working at this institute as just a research assistant, and you were willing to take that chance on me with this PhD. I will be forever grateful for the opportunities you have all presented me, and I look forward to working with you all in the future.

In addition to being involved with this project as PhD candidate, I was also provided the opportunity to work as a Research Project Officer, managing components of the broader Australian Principal Occupational Health, Safety and Wellbeing Survey design and implementation. Further, I was provided an opportunity to co-author a number of studies with my supervisors during my tenure, for which I am very grateful.

And of course, I greatly appreciate the consistent support and sacrifices made by my partner, Josh Nott. You have frequently looked after our boys to ensure I had time to complete my thesis, had the patience to put up with me during those stressful times, and kept me motivated and continuing on my PhD journey. Without you I would not have made it.

Thesis Abstract

Australian school leaders play a vital role in our society. They are responsible for the development and wellbeing of our youth, and thus, are integral to the success of our economy. Unfortunately, Australian school leaders have consistently reported concerningly high levels of burnout, resulting in high levels of attrition, and tragically, self-harm and suicide. Paradoxically, Australian school leaders too report high levels of job satisfaction. Evidently, the current wellbeing profile of our school leaders in complex. The aim of my thesis is to explore the current high burnout high job satisfaction paradox experienced by our school leaders. A greater understanding of this phenomenon will provide insight into how to best address the current burnout crisis school leaders are experiencing, whilst maintaining and promoting school leader job satisfaction. To gain a holistic understanding, I examined macro-, meso-, and micro-level influences hypothesised to impact school leader burnout and job satisfaction. I explored how key school leader job demands and job resources impact their burnout and job satisfaction using longitudinal structural equation models within a Job-Demands/Resources framework (Study 1). Second, using difference in differences analyses I explored how Australian federal and state education reform influences school leader job demands, job resources, burnout, and job satisfaction (Study 2). Finally, I examined how school leader general passion, and its harmonious and or obsessive manifestations, impact school leader burnout and job satisfaction (Study 3). My studies indicate that all macro-,meso-,and micro-level influences significantly impact school leader burnout and job satisfaction. From my findings I provide guidance for policy makers to best address the current burnout crisis facing our school leaders, and identify how a holistic approach is necessary. I also identify the areas needing additional research to ensure policy makers are able to best promote and support Australian school students and staff collectively.

Chapter 1: Introduction and Overview

School leaders play a vital role in their students' motivation and academic success (Brinks & William, 2012; Riley, 2013; Leithwood & Louis, 2012; Day, 2011). They are also key to creating a school environment that promotes teacher and student wellbeing (Collie, Shapka, Perry, & Martin, 2016; Dicke et al., 2019; Day, 2011; Koh, Steers, & Terborg, 1995). With such a vital role to play within our schools, and thus, society, the significant levels of reported strain and resultant high attrition of school leaders is of great concern (Darmody & Smyth, 2016; Dewa et al., 2009; Grissom, Loeb, Mitani, 2015; Riley, 2013-19).

Recent research into Australian school leaders paints a similarly grim picture, with Australian school leaders having consistently reported alarmingly high levels of burnout when compared to the general population (Riley, 2013-2019). Issues with school leader burnout have existed for decades (Friedman, 1995). These high levels of burnout have been surmised to be the result of two distinct components: the job responsibilities of school leaders; and the evolution of the Australian education system.

Paradoxically, Australian school leaders are consistently reporting high levels of job satisfaction when compared with the general population (Riley, 2013-2019). Further, approximately 90% of all Australian leaders are also considered passionate about their work (Riley 2015 – 2019). In distinct contrast, Gallup (2013) found on average only 13% of typical employees are engaged at work, and Deloitte found only 11% of typical employees were passionate about their work (Hagel, Brown, & Samoyloya, 2013). Evidently the current profile and wellbeing of Australian school leaders is complex.

This high burnout high job satisfaction phenomenon is not universally experienced by all employees within the education industry. School teachers, for example, too experience elevated levels of burnout when compared with the general population (Hinz et al., 2016), however, their career satisfaction is on par with that of the general population (Sokanu

Interactive Inc, 2016). Teachers appear to report more similarly to nurses rather than school leaders, where school nurses also experience high levels of burnout (Messias et al., 2019) but report levels of career satisfaction similar to that of the general population (Sokanu Interactive Inc, 2016). Interestingly, both chief executive officers and physicians appear to experience a similar phenomenon to that of school leaders, where these professions report higher levels of job satisfaction than the general population (Sokanu Interactive Inc, 2016), and experience high levels of burnout (Shanefelt et al., 2012; Mcconnell, 2018). These discrepancies of burnout and job satisfaction within the same industry imply the need to target the school leader role. This is necessary in order to address their current high levels of burnout, rather than simply apply a single strategy toward all education industry employees. It highlights the need to consider the specific responsibilities of school leaders, and how they impact their burnout and job satisfaction.

Recently there has been growing media and political attention to this school leader burnout crisis. The Age reported on the "grim picture of the mental health of those running the country's schools" (*The Age newspaper, 14/08/2015*) after a Victorian principal, Dr Mark Thompson, took his own life. The Victorian government announced in August of 2017 they will provide support mechanisms "to suit the realities and unique circumstances of [a school principal's] role" with backing of $4 million in funding from the government (Premier of Victoria, 2017). Consequently, in 2018 the Victorian government established a number of services to support school leaders, such as publishing templates to reduce workloads, a mentoring program, and access to psychologists and free health consultations (Victoria Government, 2020). And recently, I alongside my supervisors Prof. Parker, and Prof. Riley published in *The Conversation* about how one in three school leaders is suffering from severe stress (2019; https://theconversation.com/one-in-three-principals-are-seriously-stressed-heres-what-we-need-to-do-about-it-110774). This growing attention, however, has not

resulted in quantitative scrutiny of the assumed catalysts, and consequently, we lack informed strategies for remediation. Politicians promising greater support for Australian school leaders is indeed a step in the right direction, yet if such resources are haphazardly utilised, the only sure outcome will be a high cost borne by taxpayers.

The aim of my thesis was to quantitatively scrutinise the assumed catalysts responsible for Australian school leader ill being, in addition to their reported high job satisfaction. Such scrutiny resulted in a better understanding as to how we can effectively address the current, yet persistent, Australian school leader crisis. Via the three studies making up my thesis, I analysed the impact key macro-, meso-, and micro-level influences have/had on Australian school leader burnout and job satisfaction using state of the art statistical methods. I delved into the role of Australian school leaders, and how specific job demands and resources impact their reported burnout and job satisfaction. I analysed the impact the current education reform agenda had on school leader job demands, job resources, burnout, and job satisfaction. I also delved into how school leader work passion, and how it is manifested, impacts school leader burnout and job satisfaction.

Each study of my thesis could be categorised under a distinct yet interrelated research area; organisational psychology (Study 1), education and public policy evaluation (Study 2), and education psychology (Study 3). As such, I have adopted a "stapler thesis" structure, allowing the studies to stand alone, whilst including overarching literature, methodology and discussion chapters to tie them together.

Below I have provided a high-level overview of these three key foci of my thesis (Australian school leader job demands and resources, education policy, and school leader passion).

Australian School Leader Job Demands and Resources

Job Demands

Employee burnout has been consistently linked to the interaction between the job demands of a role, and the available job resources for that role (see Bakker, Demerouti, & Chen, 2017). The school leader's role involves many aspects, such as leadership, working with policy makers, providing a service to clients (parents and students), financial budgeting, recruitment, strategic projects, reporting, teacher evaluations (Torff & Sessions, 2005), and of course teaching itself (see also Dadaczynski & Paulus, 2015). They must also be visionaries and directors, people developers, organisation designers, and teaching and learning program managers (Dadaczynski & Paulus, 2015; Leithwood, 1994). School leaders have a diverse, demanding, and often overwhelming number of responsibilities. As a likely result, in Riley's research (2015), 76% of school leaders reported working more than 51-56 hours per week, and 25% reported working over 61-65 hours a week, with similar findings in Riley's other yearly reports. Consequently, school leaders are reporting high demands (Riley, 2013-19).

With both the extent and variety of demands placed on Australian school leaders, it is therefore necessary to further scrutinise how each demand impacts their wellbeing.

Job Resources

Job resources are a key component in the Job Demands-Resources theory (JD-R; discussed further in Chapter 2) with regards to the impact they have mitigating the effect of job demands on strain, and directly promoting employee motivation. As such, it was vital I considered the role school leader job resources play in the current wellbeing crisis. Based on the JD-R theory definition, the number of possible job resources are potentially endless. Thus, it is necessary to limit the number of resources scrutinised to those most relevant to Australian school leaders. As such, in Chapter 2 I have outlined the four job resources on

which I focussed in my first study, along with the associated justification as to why they are the most relevant to Australian school leaders.

Australian Education Policy and System

The second component believed responsible for the high school leader burnout is associated with the Australia's changing education environment. Australia's education system has substantially evolved in response to what is referred to as Global Education Reform Movement (GERM; Sahlberg, 2015). A number of centralised bodies have been formed, placing greater scrutiny, and responsibilities, onto Australian school leaders. For example, the Australian Curriculum, Assessment and Reporting Authority (ACARA) was established, leading to the introduction of state and federal education policies which have fundamentally changed the school leader role. Such federal instances include the introduction of a national curriculum tied to national testing, The National Assessment Program – Literacy and Numeracy (NAPLAN), and the increased public accountability of schools via the "My School" website. Such policies and entities have led to the decentralisation of school management, giving school leaders more responsibility for key budget and personnel decisions without increases in resources for their implementation. Yet it is not only federal education policies that have impacted the school leader role, with each specific state, and sector, too enacting policy changes integral to the school leader role.

The current state of Australian school leaders' wellbeing has begun to be noticed by state and federal policy makers. The Victorian government, for example, announced in August of 2017 they will provide support mechanisms "to suit the realities and unique circumstances of [a school leader's] role" with backing of $4 million in funding from the government. With Australian school leaders already being victims of stress at a rate of 1.7 times higher than the general population (Riley, 2019), however, it is evident Australian school leaders are already in crisis. Yet, little to no research has been done on the impact of

different education policies on Australian school leader outcomes (although see Deloitte Australia, 2017). Without an evidenced based approach, the methods adopted by policy makers may consequently be ineffective, and may explain why the problem with school leader burnout has persisted for decades (Friedman, 1995). This gap in the literature is what I addressed with my thesis. I analysed the current international reform focus on increasing school leader controlled autonomy (Weiner & Woulfin, 2017) has had longitudinally on Australian school leaders (see Chapter 5). With the results from my quasi experimental designs, I have provided an evidenced based foundation within which education reform can be designed to address Australia's school leader crisis.

Australian School Leader Job Satisfaction

With such a grim picture, a distinctly surprising phenomenon is the seemingly paradoxical high reported job satisfaction of Australian school leaders when compared with the general population (Riley, 2013-2019). Considering the relationship job satisfaction has with job demands and resources (see Bakker, Demerouti, & Chen, 2017), job satisfaction too appears necessary for consideration when analysing the Australian school leader role, and the impact of education reform. Most notably, the combination of reported high burnout and high job satisfaction implies another component needs to be considered beyond the school leader role and impact of education reform when addressing Australian school leader wellbeing. Upon review of the Riley reports (2015-2019), the overwhelming majority (approximately 90%) of Australian school leaders expressed being passionate about their work. The relevance of passion to burnout and job satisfaction was therefore also explored.

School Leader Passion

Vallerand et al. (2003)'s Dualistic Model of Pasion posits that an individual can express their passion either harmoniously, or obsessively. Within the context of the workplace, it has been found that harmonious passion is positively associated with job

satisfaction and negatively associated with burnout, whereas obsessive passion is positively associated with burnout and negatively associated with job satisfaction (Birkeland & Buch, 2015; Trépanier et al., 2014; Houlfort et al., 2014; Moe, 2016; Burke et al., 2015; Vallerand et al., 2010). These associations, however, have not always been found, thus the impact of passion, and how it is manifested, remain unclear (e.g., Fernet et al., 2014). Due to the high level of passion reported by Australian school leaders, and passion's potential association with burnout and job satisfaction, I explored the impact of work passion on Australian school leader burnout and job satisfaction. Further, due to the inconsistencies within the literature, I reviewed the Dualistic Model of Passion, extended it, and tailored it to Australian school leaders where necessary (Chapter 6).

Thesis Outline

In summary, first I analysed the impact Australian school leader job demands and resources have on reported burnout and job satisfaction. Second, I analysed how different controlled autonomy centric education policies impacted school leader wellbeing. Third, I analysed how work passion, and its manifestations, impact school leader reported burnout and job satisfaction. Although these three studies are interrelated, in my thesis I have presented them as relatively standalone chapters, with each referring to an overarching literature review (Chapter 2), and an overarching methodology chapter (Chapter 3). These analyses allowed me to address the overarching thesis aim: how best to promote Australian school leader wellbeing, reduce their current concerningly high burnout levels, whilst maintaining their high levels of job satisfaction. In order to do so, my thesis was structured as follows:

Chapter 1 (the current chapter) of my thesis provides an introduction and overview of the thesis.

Chapter 2 consists of an overarching literature review of the key components relevant to Australian school leader wellbeing identified in Chapter 1: Australian school leader job demands and resources; the Australian education system and the current education reform movement; and Australian school leader work passion. This literature review provides the underlying basis for the three thesis studies.

Chapter 3 covers the research design, measures, and sample from which my studies drew.

In Chapter 4 (Study 1) I reviewed contemporary theoretical organisational psychology employee wellbeing models, in addition to exploring the components of the variables employee burnout, and job satisfaction. From this review, I created and tested a theoretical model incorporating the school leader demands and resources identified in Chapter 1 and 2 using structural equation modelling. This model allowed me to ascertain the impact first order job demands and job resources had on burnout and job satisfaction, in addition to the interaction between job demands and job resources using a higher order model.

In Chapter 5 (Study 2) I explored two key education reforms that have occurred during the data collection period. I conducted naturally occurring quasi-experimental analyses in order to determine the impact of each reform holistically, and compartmentally had on Australian school leader job demands, resources, burnout, and job satisfaction, using the model created in Chapter 4. I adopted the difference-in-differences approach from econometrics to conduct between group comparisons.

In Chapter 6 (Study 3) I explored the impact work passion, and its manifestations, had on Australian school leader burnout and job satisfaction between 2015 and 2016 (i.e., over two timepoints).

Chapter 7 concludes my thesis with a general discussion of the findings from each of my studies, including the implications for future research, policy makers, and Australian school leader wellbeing.

Research Questions Addressed

In summary, from these studies I addressed the following overarching research questions:

1. What impact do Australian school leader job demands and job resources have on reported levels of burnout and job satisfaction? – Study 1
2. How does the interaction between Australian school leader job demands and job resources impact reported levels of burnout and job satisfaction? – Study 1
3. How do current education policies impact Australian school leader job demands, job resources, burnout, and job satisfaction? – Study 2
4. Do current education reform strategies promoting "controlled autonomy" lead to increases in reported autonomy by school leaders? – Study 2
5. How do school leader general, harmonious, and obsessive passion impact their reported levels of burnout and job satisfaction? – Study 3
6. How does school leader general passion mediate the relationship between harmonious and obsessive passion on reported burnout and job satisfaction? – Study 3

My Thesis Contribution

My thesis contributes to the limited knowledge on the Australian school leader role; specifically regarding how their varied job demands, and different resources, impact their reported burnout and job satisfaction. Most notably, I provide a greater understanding of how the current education reform focus in Australia has impacted school leader job demands, resources, burnout, and job satisfaction. This better understanding will help policy makers promote Australian school leader wellbeing by understanding how best to address the high

levels of reported burnout, whilst maintaining high levels of job satisfaction. In addition, a greater understanding ascertained of the impact passion has on school leaders in part explains the high burnout high job satisfaction paradox.

A distinct strength of my thesis is the focus on the current Australian school leader crisis from all levels of analysis; macro-, meso-, and micro-focused. On the macro-focused level, I analysed the impact Australia's education reform has had on Australian school leader demands, resources, burnout, and job satisfaction. This is a macro-focus as the impact is derived from national and state level influences. On the meso-focused level I analysed the impact specific school leader job demands and resources have on school leader burnout and job satisfaction. This is a meso-focus as the job demands and job resources are associated with a specific population, school leaders, across Australia. And on the micro-focused level, I analysed how Australian school leader work passion impacts reported burnout and job satisfaction. This is a micro-focus because it involves exploring how the way school leaders individually value their work, intrinsically or extrinsically, impacts reported burnout and job satisfaction. This thorough approach allowed me to a garner a holistic and rigorous understanding of the current school leader crisis, and how we as a society can most effectively address it.

Chapter 2: Overarching Literature Review

In this chapter I first discuss the Job Demands/Resources theory which I used as the foundation to conduct my studies and address my research aims. In Chapter 1 I identified three distinct components surmised to impact Australian school leader burnout and job satisfaction; Australian school leader job demands and resources; the Australian education system and education reform; and Australian school leader work passion. In this chapter I provide an overarching literature review of these components, which informed the three studies in my thesis. I then provide an overview of the concepts– burnout and job satisfaction – the key school leader outcomes of this thesis.

Antecedents of Psychosocial Risk and Poor Mental Health in the Workplace

The relationship between occupational psychosocial aspects and employee wellbeing has been researched and well documented for decades (Bailey et al., 2015). As a consequence, occupational health psychology researchers have developed multiple models and theories attempting to explain and quantify different occupational psychosocial aspects and employee motivations and outcomes. Some of the major influential theories are the Job Characteristics Model (Hackman & Oldman, 1976), the Michigan Organisational Stress Model (House, 1981), the Demand-Control-Support Model (Karasek, 1979), the Effort-Reward-Imbalance Model (Siegrist & Quick, 1996), and the Vitamin Model (Warr, 1994). For more information about these theories, please refer to Appendix 5 - Chapter 2. Indeed, these models further developed our understanding of occupational psychology, yet the premise of each is typically focussed on a specific phenomenon, thus limited in scope. For example, some models limit the scope of variables of interest, such as autonomy (Job Characteristics Model), or predetermined areas of influence, such as the Vitamin Model. Other models specifically focus on job strain and stress, such as the Michigan Organisational Stress Model, and the Demand-Control-(support) Model, without a definitive focus on

motivation or job satisfaction. The nature of the Job Demands/Resources Theory, however, does not have these limitations, due to it being highly customisable and broad in scope. It is therefore the most appropriate foundation on which my studies are based.

The Job Demands/Resources Theory

The Job Demands/Resources (JD-R) theory is a popular model used in the context of organisational psychology research due to its flexibility, having the underlying basis that most job characteristics can be categorised into two distinct facets, job demands or job resources (Bakker, Demerouti, & Chen, 2017). A job demand is any sustained physical, social, or organisational responsibility which results in physiological and/or psychological burden (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Job demands are theorised to hinder an employee's ability to effectively recover from their job responsibilities, leading to employee strain, such as burnout. Job resources, on the other hand, are components that assist employees with meeting their responsibilities, theorised to mitigate, or "buffer", the negative impact of job demands and increase employee job satisfaction (Bakker and Demerouti, 2007). As such, a highly demanding job may not necessarily lead to employee burnout in situations where comparatively high levels of job resources are provided to negate any negative effect. The extent of available job resources also promotes employee motivation and job satisfaction. Job demands, however, have a mitigating influence on this relationship. As such, even with high job resources, an employee may not be significantly motivated and satisfied with their job due to also having high job demands. Ultimately, both the direct and interaction effects between an employee's job demands and job resources influence organisational outcomes due to their indirect influence on employee productivity via burnout and motivation/job satisfaction.

The Job Demands-Resources Model

Bakker and Demerouti's literature review (2017) details the seven key propositions of the JD-R model which underpin the JD-R theory. Each of these propositions are reflected in Figure 2.1 below. In summary, they are as follows:

Proposition One: All characteristics associated with a job can be categorised as being either a job demand, or a job resource. See "Job resources" and "Job demands" in Figure 2.1.

Proposition Two: Job demands and job resources are related to two distinct processes; a health impairment process and a motivational process. Job demands lead to health impairment, such as exhaustion, whereas job resources lead to increased motivation, such as engagement. As represented in Figure 2.1, job demands directly lead to greater employee strain, and job resources directly lead to greater motivation.

Proposition Three: Depicted in Figure 2.1, job resources negatively moderate the relationship between job demands and strain.

Proposition Four: Job resources positively impact employee motivation the most when job demands are high. Job demands positively moderate the relationship between job resources and motivation.

Proposition Five: Personal resources, such as self-efficacy, act similarly, or can even be classified, as job resources. The interconnected nature and impact of job and personal resources is reflected in Figure 2.1.

Proposition Six: Increases to an employee's motivational processes lead to increases in job performance, whereas increases in health impairment processes, or job strain, negatively impact job performance.

Proposition Seven: Employees who are more motivated tend to use job crafting behaviours at work, leading to even greater levels of motivation. Job crafting refers to the practice of an employee amending work tasks to make them more meaningful. Conversely,

employees that experience high levels of job strain tend to perceive and create more job demands over time, referred to as self-undermining.

Figure 2.1

The Job Demands-Resources Model

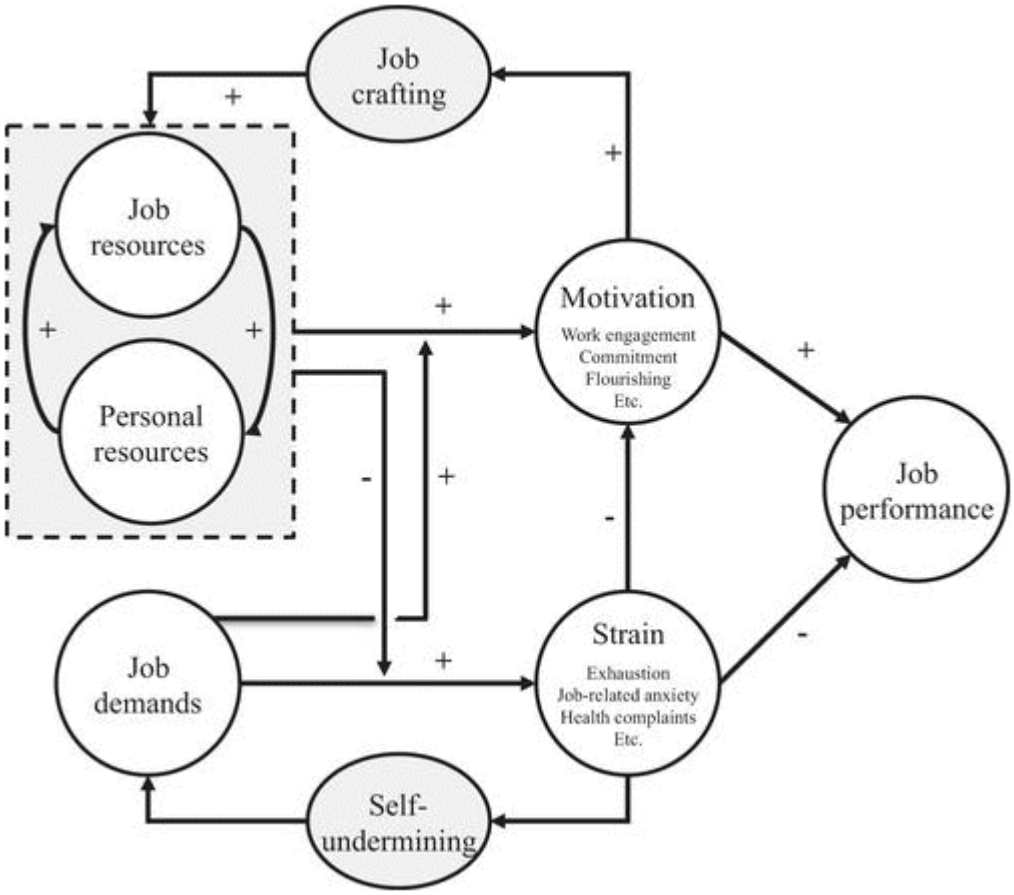


Figure 2.1. The Job Demands-Resources Model. Reprinted from "Job Demands-Resources Theory: Taking Stock and Looking Forward", by A, Bakker and E, Demerouti, 2017, *Journal of Occupational Health Psychology, 22*(3) p. 279.

The Nature of Australian School Leader Demands

Although the variety of job demands of a school leader is likely vast, it is important to target those most indicative of their wellbeing. As defined by Bakker and Demerouti's (2017) Proposition Two of the JD-R theory, I argue there are four distinct job demands Australian school leaders confront; quantitative demands, cognitive demands, emotional demands, and the demand for hiding emotions.

Quantitative Demands

Kristensen, Bjorner, Christensen, and Borg (2004) psychometrically confirmed the components which collectively represent quantitative demands. A lack of time needed to comfortably perform job responsibilities was the key indicator of an employee with high quantitative demands. Therefore, employees that are falling behind in their work responsibilities and constantly have tasks incomplete or piling up, likely have high quantitative demands. Notably, it is the *imbalance* of available time, versus time required to meet employee responsibilities, rather than the just the quantity of responsibilities, which equate to high quantitative demands.

Higher quantitative demands have been found to be tied to higher stress and psychological detachment (Mette, Velasco Garrido, Preisser, Harth, & Mache, 2018). When looking at a sample of prison personnel, the researchers found fewer employees were burnt out and there was less absenteeism when quantitative demands were reduced (Andersen et al., 2017). Higher quantitative demands also were found to increase reported work-family conflicts, which, in turn, also contributed toward higher employee burnout (Zábrodská et al., 2018). Quantitative demands were also associated with immediate cognitive complaints (e.g., issues with concentration, memory, decision making, thinking etc.) and also predicted future cognitive complaints (Stenfors et al., 2013).

High quantitative demands have also been found to impact employees physiologically. The prevalence of reported of neck pain was found to be tied to quantitative demands (Ariëns et al., 2001), in addition to the severity and frequency of headaches (Christensen & Knardahl, 2012). The higher quantitative demands placed on a cohort of nurses resulted in significantly poorer health and job outcomes when compared with the general population (Cho, Park, Jeon, Chang, & Hong, 2014).

Job satisfaction has also been found to be negatively impacted by quantitative demands (Christensen & Knardahl, 2012). Permanent employees with higher quantitative demands were more likely to develop "workplace lock in", effectively finding themselves working in a job they no longer desired (Bernhard-Oettel et al., 2018).

The school leader's role involves many things, such as leadership, working with policy makers, providing a service to clients (parents and students), financial budgeting, recruitment, strategic projects, reporting, teacher evaluations (Torff & Sessions, 2005) and of course teaching itself (see also Dadaczynski & Paulus, 2015). They must also be visionaries and directors, people developers, organization designers, and teaching and learning program managers (Dadaczynski & Paulus, 2015; Leithwood, 1994). As such, school leaders have an very large number of responsibilities. This is reflected in Riley's research (2013-2019), where approximately three quarters of school leaders reported working more than 51-56 hours per week, and around a quarter reported working over 61-65 hours a week. As such, it makes sense that school leaders on average report high quantitative demands (Riley, 2013-2019).

Cognitive Demands

The impact of cognitive demands on employee outcomes is not as clear cut as quantitative demands. For example, although higher cognitive demands have been found to increase fatigue in employees, they have also been found to increase self-rated health and job satisfaction (Meyer & Hünefeld, 2018). Job complexity has also been tied to greater levels of licit and illicit drug use, but such an association disappears among employees with high cognitive abilities (Oldman & Gordon, 1999).

Cognitively, school leaders are required to simultaneously manage tasks which differ in nature and complexity. With reference to their executive management responsibilities alone, Porter et al. (2010), for example, identified 6 key processes school principals must conduct in order implement a school initiative pursuant to the Vanderbilt Assessment of

Leadership in Education: planning, implementing, supporting, advocating, communicating, and monitoring.

Such job demands not only place a high cognitive load on school leaders, but each process varies considerably in the type of cognitive ability needed (e.g., knowledge, attention, memory and working memory, judgement and evaluation, reasoning and computation, problem solving and decision making, and comprehension and production of language; see Gerrig, Richard, & Zimbardo, 2002).

Although individuals tend to excel in one or more cognitive process compared with others, it is highly uncommon for someone to excel in all. As such, it is arguable additional cognitive demands and stressors would be placed on school leaders when participating in activities not matched with their desired/excelled cognitive function (e.g., a person may excel with problem solving and decision making, yet struggle with comprehension and production of language abilities).

Emotional Demands

High emotional demands lead to issues with concentration, difficulties making decisions, and negatively impact memory retention (Elfering et al., 2017). Further, employees with high emotional demands were found to be at greater risk of developing long-term sickness absence (Clausen, Nielsen, Carneiro, & Borg, 2012). In order to prevent burnout, Andersen et al., concluded employers should look at reducing emotional demands by promoting better social relationships (2017). Emotional demands were founded to significantly prevent teachers from expressing their naturally felt emotions (Yin, Huang, and Lee, 2017). Such demands also had a far greater impact on emotional exhaustion, or burnout, on teachers, than quantitative demands (Tuxford & Bradley, 2015). When controlling for quantitative demands, emotional demands also significantly contributed to burnout amongst care providers (Le Blanc, Bakker, Peeters, Van Heesch, & Schaufeli, 2001). Higher

emotional job demands have also been tied to increased intention to resign from the job (Loi, Liu, & Xu, 2016). Although emotional demands do indeed lead to employee burnout, greater access to emotional resources, such as social support, acted as a buffer for healthcare workers (De Jonge, Le Blanc, Peeters, & Noordam, 2008). Further, high daily emotional demands at work led to greater private internet use at home, in turning causing issues with emotional recovery at night and in the morning, and also leading to further problematic internet use (Quinones & Griffiths, 2017). Yet, access to emotional support at work acted as a buffer for this phenomenon.

The varied responsibilities of school leaders continuously place them in emotionally demanding situations. They are required to manage many stakeholders, and with that, the associated emotionally straining issues (Maxwell and Riley, 2017). School leaders act as mediators for conflict between teachers, students, and parents (Ediger, 2016). They are legally responsible for the wellbeing of their students, such as catering to those experiencing mental illness or being in physical danger due to situations such as abuse, neglect, mental illness, and even homelessness (Ediger, 1996). Further, parents expect their children to develop in a nurturing environment, which caters toward their specific religious, cultural, and personal beliefs. Students with health concerns, such as allergies, or physical and mental disabilities, must also be individually catered to and properly understood (Lynch, 2012; Ediger, 1996). Being required to address the needs of, and play mediator between all stakeholders, therefore places school leaders in emotionally challenging situations. Interpersonal relations, and intrapersonal conflicts (highly emotionally demanding stressors), for example, were deemed two of the main stress sources for school principals (Gmelch and Swent, 1984). Interactions with staff and parents were found to contribute more to school leader burnout than the extent of their quantitative demands (Friedman, 2002). It has also

been reported that school principals' sources of interpersonal stress were only overshadowed by those relating to administrative constraints (Poirel, Lapointe, & Yvon, 2012).

Demand for Hiding Emotions

A job that requires a need for hiding emotions frequently prevents an employee from expressing naturally felt emotions, be them positive or negative (Kristensen et al., 2004). Hochschild has conducted research into this job demand extensively within the public service industry, labelling it as emotional labour (2003). Hochschild explained, for example, the requirement of airline workers to provide a positive outward expression to promote customer satisfaction, describing the workers' smiles as "on them but not of them" (2003, p. 8).

An ability to express naturally felt emotions has been tied to increased self-efficacy in teachers (Yin, Huang, & Lee, 2017) in addition to increased job satisfaction (Yin, 2015). Conversely, being forced to hide emotions has been found to lead to poor psychological wellbeing yet increases the extent of presenteeism at the workplace (Lee, 2016). This interaction thus leads to the likelihood of employees working whilst that are ill. Being forced to hide emotions has also been found to lead to greater stress and anxiety (Bono, Foldes, Vinson, & Muros, 2007).

Management of their own and others' emotions is a critical component of the school leader role (Maxwell and Riley, 2017; Beatty, 2000; Berkovich and Eyal, 2015). School leaders are forced to suppress or fake numerous dispositions, such as behaving calm and positive when faced with a serious issue, portray disappointment when addressing a student's inappropriate actions, or expressing confidence and positivity when handling emotional parents (Maxwell and Riley, 2017: Crawford, 2007; Rhodes and Greenway, 2010). As such, due to the varied interactions and circumstances, school leaders are forced to express the emotions needed for their role, rather than those representing their own psychological state.

This concept, also referred to as the "display rule" (Zapf, 2002), is expected of school leaders as a means of portraying a rational leader (Maxwell and Riley, 2017).

Australian School Leader Job Resources

It is evident school leaders are faced with numerous, varied, and challenging demands. In order to manage these demands successfully, a number of key resources are known to interact with, mitigate, or alleviate the negative impact job demands have on employee outcomes (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Similar to job demands, it is important to target those most indicative of school leader wellbeing (i.e., most effective at mitigating the negative impacts of job demands, and those most effective at promoting job satisfaction). Informed by Proposition Two and Three of the JD-R theory (Bakker and Demerouti, 2017), I have detailed why the following job resources most relevant to holistically considering burnout and job satisfaction of Australian school leaders: autonomy, possibilities for development, social support from colleagues, and self-efficacy.

Autonomy

Job autonomy refers holistically to the extent an individual has discretion over when, where, and how they do their work (Hackman & Oldham, 1980). Greater levels of autonomy and decision making has been considered as a job resource, as such components are critically important to adequately address employee job demands (Hu, Schaufeli, & Taris, 2016). Lower levels of job autonomy have been reported to increase employee burnout levels (Kim, 2016). Further, Shih, Jiang, Klein and Wang (2011) reported the extent of job autonomy workers perceived in their roles negatively influenced not only reported burnout, but also how demanding they considered their positions.

High school leader autonomy has been touted as the panacea to best address individual student needs and improve student academic outcomes by education policy makers

internationally (see Chapter 5 for more information). As such, it was vital I explored the impact autonomy has on school leader wellbeing.

Possibilities for Development

Possibilities for development is a combination of formal and informal opportunities for an employee to develop their skills, and use current skillsets within the workplace. As such, an employee required to take initiative and develop and utilise his/her current skills, in addition learning new skills, has a job high in possibilities for development.

The availability of employee training and professional development has been found to mitigate burnout (Bakker & Demerouti, 2014). In one study, for example, fewer cases of observed burnout were among employees who had been involved with skill development training (Cohen & Gagin, 2005). Participants involved in a high demand job also experience greater levels of satisfaction, and also lower levels of burnout when they had better development opportunities (Jawahar, 2012).

Opportunities to develop new skills and advancement were found to be positively associated with job satisfaction, employee loyalty, and intent to stay (Costen & Salazar, 2011). Employee training was also tied positively to affective and continuance commitment (Taormina, 1999). Greater development and advancement opportunities have also been linked to employees having higher perceived organisational support, leading to greater organisational commitment and overall trust (Wayne, Shore, & Liden, 1997; Whitener, 2001). Employee empowerment, teamwork, and training were also all found to be positively associated with job satisfaction (Hanaysha & Tahir, 2016).

Similar to autonomy, current education reform targets increasing school leader possibilities for development (see Chapter 5). As such, I explored the impact possibilities for development have on school leader wellbeing.

Social Support from Colleagues

Social support is reported to mitigate employee burnout and also turnover intention (Kim, 2016). Hu, Schaufeli, and Taris (2016), for example, found social resources significantly increased employee engagement, and organisational commitment. A greater social community in the workplace was also found to be directly related to lower employee burnout (Zábrodská et al., 2018). In a meta-analysis consisting of 20 different articles looking at the influence of co-worker social support and burnout, all studies found a significant negative correlation between co-worker social support and emotional exhaustion, regardless of differences in profession or population (Kay-Eccles, 2012). The interaction between low social support and high quantitative demands were found to be associated with low levels of job dedication and learning, in addition to high levels of exhaustion (Taris & Schreurs, 2009). Social support from colleagues was found to significantly buffer the negative impact of emotional demands, yet not quantitative demands. Such support also led to a positive impact on learning and development (Taris & schreurs, 2009). Surprisingly, Taris and Schreurs (2009) also found that high levels of social support aggravated the impact of quantitative demands. They hypothesised this was due to colleagues discussing their high quantitative demands, and therefore concluding they worked in an unfair workplace environment. Greater levels of social support were also found to allow teachers to express their naturally felt emotions easier (i.e., reduce the demand for hiding emotions; Yin, Huang, & Lee, 2017).

Self-Efficacy

Proposition Five of the JD-R theory indicates that personal resources, such as self-efficacy, act similarly, or can be classified as, job resources with regards to their impact on burnout and job satisfaction (Bakker and Demerouti, 2017). Self-efficacy is an individual's belief in the extent they are capable to mobilise "the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Gist & Mitchell, 1992, p. 184). Greater teacher self-efficacy was found to be negatively correlated with reported emotional

exhaustion (Dicke, Stebner, Linninger, Kunter, & Leutner, 2017; Dicke et al., 2015). Employees with high self-efficacy have been reported to have significantly lower levels of anxiety and depression in high demanding jobs when compared with those with low self-efficacy (Panatik, O'Driscoll, & Anderson, 2011). Self-efficacy has also been found to have significant positive associations with work engagement, and affective commitment, while negatively associated with turnover intentions (Albrecht & Marty, 2017). Therefore the significance of self-efficacy to school leaders warrants its inclusion as a job resource for consideration in my thesis.

The Australian Education Environment

The second component hypothesised to significantly impact Australian school leader wellbeing is the nature of the Australian education environment. The evolution of the Australian education system in response to the Global Education Reform Movement has prompted considerable changes to Australian school leader responsibilities (Sahlberg, 2015). I explored how the Australian education system has evolved to best understand the impact of education reform on Australian school leader burnout and job satisfaction.

Of note, the differences in governing bodies and education policy between the Australian states and territories, in addition to the different school sectors, imply Australian school leader job demands and resources may differ based on his or her school affiliations. As such I have detailed the nature of the Australian education system, and differences between each aspect. A better understanding of these differences informed my analysis for study 2 (Chapter 5) which ascertained the impact of differing school leader job demands and resources associated with recent education reform. I concluded that I must limit my analyses of Australian education reforms to the impact they had on school leaders within the government education sector (as opposed to including those within the Catholic and independent sectors). This was due to the flexibility and significant differences in

interpretation and implementation of such reform within these sectors, in addition to the limited documentation outlining the adopted procedures taken within such sectors.

The Australian Education System

Within Australia, school education is regulated and managed based on the state or territory in which a school is located. The Federal Government, however, too has a say in how each state or territory manage their school systems, and such influence has been increasing over the last few decades brought on by the phenomenon touted as the Global Education Reform Movement (further expanded later). It is compulsory for all Australians between the ages of six and sixteen to receive a school education. The 13 years of Australian school education consists of primary education (7/8 years), Secondary education (3/4 years), and Senior secondary education (2 years). As stipulated in the Australian Qualifications Framework (developed as part of the 1995 national policy; Australian Government Department of Education, 2018), designed to link all levels of education (schools, vocational, and tertiary) into one system, students are awarded a school leaving certificate on the successful completion of Year 10, and the Secondary Certificate of Education on the completion of Year 12, typically necessary for students to move onto tertiary education.

Schools are categorised as being either government (publicly owned and managed) or non-government (owned and managed by an independent body – typically either via a religious diocese, or standalone). Both categories, however, receive government funding, predominately from the Federal Government. Government school education is free for Australian residents and citizens (however some schools request administration type fees if the parents/guardians can afford them), however range in fees for most international students. The Australian government "Future Unlimited" website provides the range of cost for schooling for international students of being between AU$7,800 - $30,000 (Australian Government, 2018).

Australian School Sectors

The Australian Bureau of Statistics (2017) categorises Australian schools into three distinct sectors; government, Catholic, and independent. The Bureau also reported a total of 9,444 schools in Australia, consisting of 3,849,225 enrolled students, and 404,580.9 in-school staff (FTE), 70% of those being teachers.

Although these categories reflect the distinct school structures in Australia, the labelling can be misleading. For example, schools belonging to the "Catholic" category consist of three denominations, Catholic, Anglican, and Lutheran. Independent schools also mostly align themselves to a specific denomination yet are structured differently to "Catholic" school structures. Further, alternative structures of education, such as home schooling and distance education, are also adopted in Australia. As home schooling and distance education are not relevant to my thesis, I have not explored these parts of the Australian education system further.

Regardless of school structure, most schools in Australia are heavily subsidised by the governments (predominately the Federal Government; Proctor & Aitchison, 2015). For example, in 2010, 72 percent of independent schools and 75 percent of Catholic schools obtained more than half their net recurrent income from Australian governments (Gonski, 2011, p. 15). Such recurrent funding is also expected to increase, with the government at time of writing announcing recurrent funding of AU$22.1 billion by 2021, and AU$30.6 billion by 2027 (Department of Education and Training, 2018).

Government

Government schools make up 65.6 percent of total Australian schools as of 2017 (Bureau of Statistics, 2017). The State and Territory education departments consist of multiple divisions responsible for components associated with school education. For example, in NSW the Department of Education oversees the following specialised subdivisions: External Affairs

and Regulation; School Operations & Performance; Educational Services; Corporate Services; Strategy & Evaluation; Aboriginal Affairs; School Infrastructure NSW; and Delivery. Although owned and overseen by the relevant state and territory governments directly, they are also influenced by both national and international entities which underpin many, if not most, of their education policies. For example, education departments are responsible for aligning their curriculums and reporting requirements to those stipulated by the Australian Curriculum and Reporting Authority, which adheres to the requirements dictated by the Australian Federal Government's Education Council.

Internationally, the United Nations also plays a role in Australian educational policy decisions reflected within government schools. Being a member state of the United Nations, for example, Australia is bound by policies in which it is a signatory, or international jus cogens (e.g., see Article 26 of *The Universal Declaration of Human Rights*). As such, the federal government is required to align national education policy to meet the obligations of international law.

The requirements imposed by these international, national, and state and territory governing entities amalgamate at the school level, effectively shaping the responsibilities of our school leaders.

Catholic

Catholic schools make up 19.9 percent of all Australian schools (Bureau of Statistics, 2017). Although the vast majority Catholic schools are associated with the Roman Catholic Denomination (hence the typical reference to this structure as "Catholic") there are also schools belonging to Anglican and Lutheran dioceses. The dioceses are designated geographically, typically reflecting the number of schools within said areas.

Although each diocese has a separate education office that manages the schools within its vicinity; a national education body is also responsible for managing the dioceses

collectively, similar to the structure of state and territory education departments being accountable to the federal education department regarding government schools. The national diocese education department is then accountable toward the nationally affiliated church, which then is accountable to the international church.

Independent

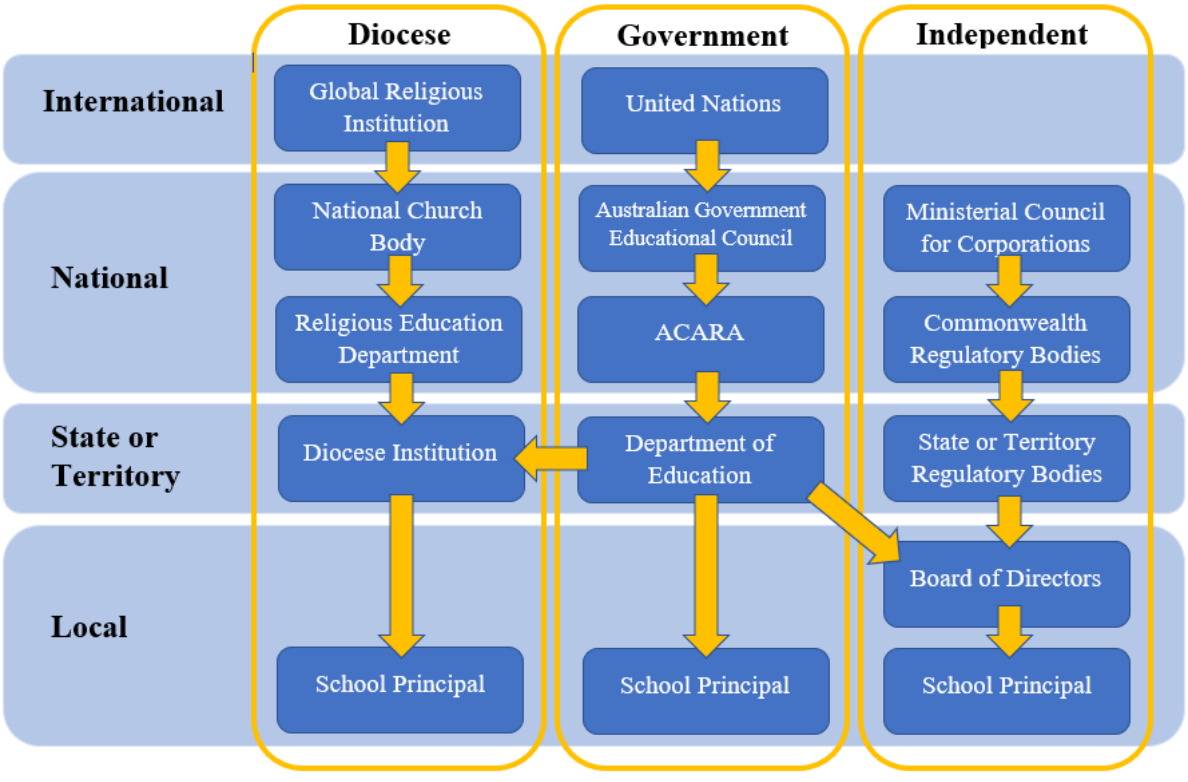
Independent schools make up the remaining 14.5 percent of Australian schools (Bureau of Statistics, 2017). It is more difficult to describe independent schools, as they are vastly different in nature. Independent schools can either be for-profit or not-for-profit entities, typically managed by boards of directors and owned by shareholders. Although also being highly subsidised by the federal, state and territory governments, school fees are typically much greater to attend independent schools compared to government and diocese schools. Consequently, independent schools usually are able to offer resources and opportunities unavailable in government or diocese schools.

Effectively being business entities, laws and regulations applicable to independent schools are those also applied to corporations. In fact, independent schools are required to be registered as corporations, thus being accountable to the Federal Ministerial Council for Corporations via the *Corporations Act 2001*. As such, independent schools are also scrutinised by Federal and State regulatory bodies (e.g., NSW Fair Trading, Australian Securities Investment Commission). Independent schools must also meet criteria established by the relevant state or territory government in order to be registered and accredited and, if not-for-profit, receive government funding – stipulated by the *Australian Education Act 2013*. Independent schools, just like government and Catholic schools, implement the national curriculum outlined by the Australian Curriculum, Assessment and Reporting Authority (ACARA), participate in NAPLAN, and provide necessary data for the *MySchool* website (Independent Schools Council of Australia, 2016).

Australian school leaders, regardless of school sector, are evidently accountable, both directly and indirectly, to international, national, and state and territory entities. The methodology and motivations with providing education, however, evidently differ between the school sectors (see Figure 1 for a visual comparison of the different influencing entries of the three school sectors). As such, it is likely the nature of a school leader, in addition to the reported levels of demands, resources, burnout, and job satisfaction, differ between both state and territories, and school sectors. For Study 2 I therefore focussed on analysing the impact education reform had on school leaders within the government sector. This was due to the transparency and consistency of the policy documentation and implementation, whereas Catholic and Independent schools had the flexibility to introduce tailored education reform.

Figure 2.2

Progression of Authority for the different Australian School Sectors



Note. The different levels of influence on each of the Australian school sectors, and how they impact each other.

The Global Education Reform Movement

In order to provide an overarching context of the current education policies influencing Australia's education system, below I have outlined a brief history of how Australian education policy has evolved over time. I then detailed the current international trend and focus on promoting school leader controlled autonomy. The recent education reform adopted within Australia reflect this promotion of controlled autonomy, thus for Study 2 of my thesis I analysed the impact education reform promoting Australian school leader controlled autonomy had on school leader job demands, job resources, burnout, and job satisfaction (Chapter 5).

Introduction and History

The Global Education Reform Movement refers to the significant education policy reform undertaken by nations in response to growing economic, cultural, and political globalisation (Mundy, Green, Lingard & Verger, 2016; Sahlberg, 2004). Yet, policy focus and strategies differ(ed) considerably between nations addressing the challenges posed by globalisation (although a number of strategies were aligned between OECD countries; see Tröhler & Barbu, 2011). Sahlberg (2004), however, developed a "Tentative typology of education reforms", effectively arguing the Global Education Reform Movement encompassed four distinct types of education reform; Equity-, Restructuring-, Financing-, or Standardisation-oriented reforms. Policy makers implemented a combination of such reforms in a way to best align their nation's education systems to what they perceived as best international practice. Sahlberg presented these types of reforms in a top-down table, the order reflecting a transition toward a market-oriented education system (i.e., Equity reforms are least market based, standardisation reforms are most market-oriented).

Equity-Oriented Education Reforms. Gaining popularity in the late 1960s and early 1970s, equity-oriented education reforms had an underlying aim of increasing economic

opportunities and social mobility of a population. Examples of such reform included guaranteed access to a good quality basic education regardless of SES or location, emphasis of educational funding allocated to lower rather than higher education, and expansion of curriculum beyond knowledge and skills in core subjects. Emphasis was also placed toward gender inequality, children with additional needs, marginalised groups and refugees, and uneducated adults. Equity based reforms, however, have decreased in popularity recently due to perceptions such policies do not positively influence test scores of students, and thus, do not result in economic growth.

Restructuring-Oriented Education Reforms. Restructuring-oriented education reforms, those being reforms focussed on aligning school systems with international practice, started developing during the 1980s. The underlying justification for such reforms was that an education system that ran efficiently and effectively, which would result in better education outcomes for its students, must "share the same core values, assumptions, and operational principles" (Sahlberg, 2004, p. 7). Such reforms defined components such as student to teacher ratios, size of classes, school size, per capita expenditure, and duration of compulsory education.

Financing-Oriented Education Reforms. With increased economic competition between nations, financing-oriented education reforms aimed at transferring the cost of education from the government to the students were commonly adopted. For example, funding for higher education (considerably more expensive than primary education) would be reduced, and the privatisation of primary, secondary, and tertiary providers, and a reduction in per capita expenditure usually via increases in class sizes, were/are common strategies.

Standardisation-Oriented Reforms. Since the 1990s, standardisation-oriented reforms, establishing high performance standards for teaching and learning, have been progressively implemented. Assuming standardisation promotes high quality education and

strong student performance in a competitive economic and social context, such reforms led to greater scrutiny and measurement of student academic performance, and how a nation's students perform compared to other nations became of great significance from the consequent development of international test comparisons (e.g., the Program for International Student Assessment - PISA). Such scrutiny resulted in the micro-management of teaching and learning. Hargreaves (2003) concluded the typical standardisation reform strategy involved implementing a rigidly defined curriculum with established attainment targets or learning standards, developing measurement tools to determine the extent such targets/standards have been met, frequent external inspections of schools to control teacher and school performance, and adoption of performance-based remuneration and other rewards-based structures for teachers and school leaders.

Current International Focus - Controlled Autonomy

In an effort to best serve individual community and student needs, education systems have progressively become decentralised (Checchi, 2006). Consequently, over the last decade education reform has been focussed on increasing school leader autonomy, yet still framed within standardised accountability metrics and national guidelines. This seemingly oxymoronic strategy of standardised decentralisation has been referred to providing school leaders with "controlled autonomy" (Weiner & Woulfin, 2017). Differing forms of education reform reflecting this strategy is evident in numerous countries, such as the US (Steinberg & Cox, 2017), Finland (Saarivirta & Kumpulainen, 2016), the UK (Weiner & Woulfin, 2017), China (Hamilton, 2014), and Australia (Hingston, 2018). The benefits of controlled autonomy, however, have been called into question, with some researchers even arguing they are detrimental to employee wellbeing (e.g., Ekman, 2012; Barker, 2006). Please refer to Chapter 5 for further details.

Key examples of education reform in Australia that reflect the international push for increased controlled autonomy for school leaders are the *Empowering Local Schools National Partnership,* and *Local Schools Local Decisions*. The Australian Education Union (2019) has claimed that such education reforms focussing on the promotion of school leader autonomy are responsible for the steady increases in their job demands, and associated burnout, yet this has not been empirically scrutinised. As such, I analysed the impact of these two reforms on Australian school leader outcomes to determine the role they have played in the current Australian school leader crisis.

Australian School Leader Work Passion

The final component I identified as potentially being relevant to Australian school leader burnout and job satisfaction is regarding their work passion. Australian School leaders report greater job satisfaction compared with the general population (Riley, 2013-2019). A yet to be tested explanation of the high burnout high job satisfaction conundrum is the passion school leaders express about their roles (Gurr, Drysdale, & Mulford, 2007). Riley (2015-2019) found that almost 90% of school leaders reported being passionate about their work. It is therefore worth exploring the role passion has on school leader wellbeing, and how it interacts with their varied job roles. Further, the interaction between implemented education policy reforms (i.e., the associated changes in school leader job demands and resources) and school leader passion may provide insight in why this high burnout high job satisfaction conundrum exists.

Concept of Passion – Dualistic Model of Passion

The concept of passion has been extensively considered theoretically (see the Vallerand et al., 2003 review), however, its impact on individuals has only recently been explored empirically. Further, passion has been identified as a key influencer for employee motivation and wellbeing in the workplace, yet few studies have looked into its impact

(Bushardt, Beal, Young, & Khosla, 2016), and those which have, provide conflicting results and associated conclusions.

Vallerand et al. (2003) posit an individual is passionate about an activity they (a) enjoy, (b) find important and significant in their life, and (c) invest a significant amount of time and energy on a frequent basis. When an individual is passionate about an activity, such passion manifests itself as being either harmonious, or obsessive, dependent on how the individual integrates the passion into their life. Thus, Vallerand and authors created the Passion Scale to empirically measure the impact the different manifestations impact an individual. This approach to passion has been supported by researchers when considering the impact of passion within the workplace (Bushardt et al., 2016), and has been applied to workplace passion research accordingly.

Harmonious versus Obsessive Passion. An individual is harmoniously passionate if they freely choose to participate in the activity and easily stop participating in the activity if they so desire. They integrate the activity well into their lives, meaning the activity does not negatively impact on other facets of their life. They have a genuine personal endorsement of the activity (i.e., they are intrinsically motivated to do the activity).

An individual who is obsessively passionate, however, is contingently motivated to do the activity (e.g., being motivated for social acceptance, self-esteem etc.), and the activity impedes on other life facets. An individual who is obsessively passionate centres their life around the activity to the detriment of other life facets, such as their friends, family, and themselves.

Relationship with Burnout and Job Satisfaction

Of the studies that have considered the impact of the passion manifestations on employee burnout/negative affect, the analyses provide conflicting results. In line with a priori theory, multiple studies reported manifestations of harmonious passion were negatively associated with employee burnout or negative affect (Birkeland & Buch, 2015; Bélanger et al., 2015; Carbonneau et al., 2008; Trépanier, Fernet, Austin, Forest, & Vallerand, 2014; Curran, Appleton, Hill, & Hall, 2011; Houlfort, Philippe, Vallerand, & Ménard., 2013; Gustafsson, Hassmen, & Hassmen, 2011). On the other hand, it has also been reported that harmonious passion had no impact on burnout or negative affect (Fernet, Lavigne, Vallerand, & Austin, 2014; Lavigne, Forest, & Crevier-Braud, 2012; Houlfort et al., 2013). With regards to obsessive passion, multiple studies have reported a positive association between obsessive passion and employee burnout or negative affect (Birkeland and Buch, 2015; Bélanger et al., 2015; Lavigne et al., 2012; Trépanier et al., 2014; Houlfort et al., 2013; Gustafsson et al., 2011), while others have reported there being no association (Fernet et al., 2014; Carbonneau et al., 2008; Curran et al., 2011).

Unlike passion's reported inconsistent association with burnout, researchers have previously found passion's relationship with job satisfaction to be more consistent. Job satisfaction is consistently found to be positive related to harmonious passion, whereas it typically is not significantly correlated with obsessive passion (Houlfort et al., 2013; Moè, 2016; Burke, Astakhova, & Hang, 2015; Vallerand, Paquet, Philippe, & Charest, 2010).

The extent of work passion appears to be a relevant component associated with employee burnout and job satisfaction, yet the inconsistencies within the literature warrant further review of the Dualistic Model of Passion itself. I therefore psychometrically scrutinised the Passion Scale being applied to an extended form of the Dualistic Model of Passion which allowed me to analyse the Australian school leader sample holistically (see

Chapter 6). With this extended model, I was then able to ascertain the impact of work passion, and how it is manifested, is on Australian school leader burnout and job satisfaction.

Australian School Leader Outcomes

The crux of my thesis is the analysis of the competing job pressures faced by Australian leaders within the workplace, and how they impact their reported burnout and job satisfaction. As such, below I have detailed the nature and origin of burnout and job satisfaction; the two key outcomes of interest.

Burnout

Initially coined in the 1970s, the concept of burnout has dramatically grown in interest and focus when considering those suffering from workplace stressors (Letter, Bakker, & Maslach, 2014; Cooper & Farber, 1985). Although such a term has been used frequently for decades, there still lacks a definitive understanding of what burnout specifically entails, but more specifically, its core catalysts. Letter et al. summarised burnout to be "a psychological syndrome of exhaustion, cynicism, and inefficacy" which results from chronic job stressors (2014, p. 56). The majority of research on burnout, however, limits its focus to, or defines it solely as, a state of physical, emotional, and mental exhaustion (Malach-Pines, & Carlson, 2005; Fragoso et al., 2016). As such, popularly used measures such as the Copenhagen Psychosocial Questionnaire (see Dicke et al., 2018) and the Burnout Measure (see Malach-Pines, & Carlson, 2005) only measure the primary exhaustion component of burnout. The predictors and outcomes associated with burnout using these two measures, compared with using the Maslach Burnout Inventory, which measures all three burnout components, effectively yield the same findings (see Leiter et al., 2013). As such, the similarity in findings between the singular and multi-component burnout measures support the idea of exhaustion being the key component of employee burnout.

While most research, especially more recently, predominately attributes employee burnout to excessive job demands, Karger (1981) surmised burnout did not simply result from high job demands, but from the phenomenon Marx described as "alienation" – the estrangement of self. Karger argued that, due to the removal of autonomy of individuals when placed within an economic model of stratified social classes, they presented a cluster of anomic symptoms similar to those described by Letter et al. (2014). Worthy of note, Karger stressed the importance of focussing on the *process which results* in employee burnout, rather than the condition of burnout itself – an error he claimed most researchers did concerning employee burnout during the first decade of the concept's outset – in order to reduce its prevalence.

An individual's motivation has also been claimed to influence whether they suffer from burnout, and the extent thereto. Freudenberger (1975), a researcher considered one of the founders of the burnout concept, posited individuals who were more likely to experience burnout were those who were overly committed to their work intrinsically (i.e., not committed merely for the financial incentives, or extrinsic motivations). They would disregard their own health, preferences and discomfort, and substitute most aspects of their lives with their jobs; effectively idolising their careers over everything else. Such individuals, although seen as healthy, positive and motivated at first, could drastically change and become irritable, antisocial, frustrated, and condescending toward their co-workers and clients. They would become more exhausted and cynical, their work performance would decline with them making mistakes, all whilst being unable, or unwilling, to seek the help they needed. Such individuals would, according to Vallerand et al. (2003), be considered obsessively rather than harmoniously passionate. This further indicates the need to explore the impact of school leader passion, and how it manifests, influences their wellbeing.

A key issue with measuring employee burnout is that the majority of truly burned-out employees would most likely be absent from their places of employment, thus missing from research samples. Known as the "healthy worker effect" (e.g., Kirkeleit, Riise, Bjorge, & Christiani, 2013) analysis of these samples can lead to results which significantly underestimate the risk of burnout regarding the researcher's variables of focus. As such, it is important this is considered when drawing conclusions from burnout research.

Burnout is associated with somatic stress, poorer health outcomes/ill-heath, and depressive symptoms (Fragoso et al., 2016; Leiter et al., 2013; Hakanen, Bakker, & Schaufeli, 2006). Greater levels of burnout have been reported to increase the use of psychotropic drugs and elevate the risk of poor mental health (Leiter et al., 2013). Burnout is also associated with a reduction in work performance and ability (Fragoso et al., 2016). Greater levels of absenteeism and attrition have also been linked with greater levels of employee burnout (Bakker & Demerouti, 2014). The extent of burnout also negatively correlates with reported job satisfaction levels (Bogaert, Clarke, Willems, & Mondelaers, 2013).

Job Satisfaction

Job satisfaction has been researched extensively for almost a century; however little has changed from its initial definition. In the 1930s, Kornhauser and Sharp (1932) established the definitive concept of job satisfaction being a self-reported, evaluative judgement of either particular or holistic work attitudes (or a combination thereto), which still remains the underlying concept of job satisfaction today (also see Judge, Weiss, Kammeyer-Mueller & Hulin, 2017). Being of great interest to both those working in organisations and researchers, job satisfaction is the most frequently studied variable in organisational psychology (Spector, 1997). Although numerous similar concepts have also come to exist, such as work engagement, work commitment, and work experience, job satisfaction is distinctly different

with regards to not measuring moods or emotions, but rather an individual's evaluation of his or her work, either in general, or within specific facets such as pay, co-workers, or supervision (Weiss & Merio, 2015).

Two underlying antecedents of job satisfaction are identified within the literature. Firstly, the job environment itself, and second, factors associated with the individual. The job environment encompasses components such as what is required of workers to complete their tasks, how workers interact with colleagues, supervisors, and subordinates, how worker efforts are rewarded or appreciated, the extent of job autonomy, possibilities of skill development, and of course the more concrete aspects such as pay, hours worked, and employee fringe benefits.

Components such as personality traits, employee motivations, demographic information such as age, gender, and ethnicity, personal relationships outside of work such as with friends and family, and also years of work experience or study have been concluded to influence job satisfaction. Such individual considerations are mostly outside the control of an organisation, which may be the reason why the predominate amount of research of job satisfaction is focussed on work environment factors (Spector, 1997).

The significant focus on job satisfaction, especially by organisations, makes sense considering the associated effects on workers. Job satisfaction has been reported to positively influence job performance, and organisational citizenship behaviour; examples of organisational citizenship behaviour provided by Schnake (1991) being the extent workers help one another, putting in more effort at work that is expected such as making suggestions to increase performance, and not spending time on activities not associated with work responsibilities. Job satisfaction is also negatively associated with absenteeism and attrition; large expenses to an organisation.

With reference to the previous section discussing burnout, it is evident job satisfaction and burnout have significant crossovers regarding what they influence, but in distinctly opposing directions. As such, it is clear why organisations would desire to increase job satisfaction and reduce burnout levels of their workers.

Conclusion

This overarching literature review provided the foundations on which my three studies were conducted. First, the varied nature of Australian school leader job demands and job resources warranted the inclusion of the specifically identified demands and resources in my theoretical model; quantitative demands, cognitive demands, emotional demands, and the demand for hiding emotions, and autonomy, possibilities for development, social support from colleagues, and self-efficacy. To best understand the different impacts of these demands and resources, I first explored how each type of demand and resource has historically impacted employee outcomes, notably those of school leaders and those within the education industry, in current literature.

Second, it is clear the Global Education Reform Movement has impacted the Australian education environment, and with it, the responsibilities associated with being a school leader. As such, I identified the different education reforms to have occurred during the data collection period, those reflecting the current international focus on increasing school leader controlled autonomy, in order to ascertain the impact these reforms had on Australian school leaders.

Finally, my overarching review of work passion supported the notion that work passion is relevant to Australian leader burnout and job satisfaction, however previous study conclusions are inconsistent. I therefore scrutinised and modified the Dualistic Model of Passion to best fit Australian school leaders, in order to understand the impact work passion, and its manifestations, have on Australian school leader burnout and job satisfaction, and

whether work passion may explain the apparent conundrum of report high burnout and high job satisfaction of Australian school leaders.

My literature review indicates that these three components significantly influence school leader outcomes, notably all being tied to burnout and job satisfaction. It is therefore warranted to explore all of these components to better understand the current crisis facing Australian school leaders.

Chapter 3: Methodology

In this chapter I have described the broad methodology approach I have used in my thesis to address my research aims. The studies in my thesis are designed to predominately stand alone. As such, the purpose of this chapter is to provide a brief overview of the different methodologies used, in addition to providing information on the sample I used across all the studies, and the measurement instruments. I have provided greater detail of the specific methodology I used within each relevant study chapter.

Research Design and Sample

The efficacy of my thesis is supported by the methodology and data that I used to address the research aims. The broad and representative nature of the sample from which I drew the school leader data fundamentally allowed for this possibility. The data were sourced from the Australian Principal Occupational Health, Safety and Wellbeing Survey (Principal Survey) established by Professor Phil Riley, consisting of data from 5,082 school leaders (school heads of departments. assistant school principals, and school principals) collected yearly between 2011 and 2016 inclusive (they completed the survey at least once). As such, I was able to adopt more rigorous longitudinal research designs, compared with cross-sectional designs that are typically used in this field of research.

The sample consisted of responses by approximately 50% of all school leaders across Australia. This provided me with data from school leaders across different settings (see Table 3.1 for the breakdown of leaders per state/territory; Table 3.2 for the number of responses per year). This broad coverage, in addition to the large number of responses per year, made possible the use of quasi-experimental research designs to compare the impact different education policy reform had on school leaders on both Federal and state levels. The large sample size, for example, allowed for econometric difference-in-differences based analyses to establish control groups when analysing the impact of specific education policy reform that

occurred during the six years of data collection (2011-16). The large sample size also allowed me to adopt structural equational modelling methods to test requisitely complex a priori models.

Table 3.1
State and Territory Breakdown of School leader Participants

State/Territory	Sample %	Gen P %
Australian Capital Territory	1.95	1.64
New South Wales	11.03	32.02
Northern Territory	2.10	1.02
Queensland	20.84	20.08
South Australia	10.05	7.08
Tasmania	2.20	2.15
Victoria	40.26	25.15
Western Australia	11.57	10.85

Note. Sample % = the percentage of school leaders located within each State/Territory that was involved in the Principal Survey. Gen P % = the percentage of the general population located with each State/Territory June 2016 (Australian Bureau of Statistics, 2016). The survey responses from New South Wales and Victoria are disproportionate to the general population breakdown, likely due to the industry partners, and associated methods of recruitment having a large presence within Victoria (Riley, 2011-2016).

Table 3.2
Number of Survey Responses Per Year

Year	Number of Responses
2011	2,049
2012	2,084
2013	2,010
2014	2,467
2015	2,481
2016	2,667

Measures

The following measures were used to conduct the three studies of my thesis, all sourced from the Principal Survey.

Copenhagen Psychosocial Questionnaire II

The Copenhagen Psychosocial Questionnaire long version II (COPSOQ) was designed to holistically assess the psychosocial work environment. This version has been included in the Principal Survey and was be used to assess the changes in school leader job

demands, resources, and outcomes. This version consists of 41 dimensions, yet based on my literature reviews I focused on the “Quantitative Demands”, “Cognitive Demands”, “Emotional Demands”, Demand for Hiding Emotion”, “Self-Efficacy”, “Possibilities for Development”, “Social Support from Colleagues”, “Burnout” and “Job Satisfaction” dimensions.

The COPSOQ is a well-established tool, with different variations of it being historically used for thousands of enterprise based risk assessments (Nübling, Burr, Moncada, & Kristensen, 2014). This questionnaire has been psychometrically analysed with this database and resulted in a very good fit, with convergent and discriminant validity over time (Dicke et al., 2018). The specific items per latent variable are detailed in Table 3.3 below.

Table 3.3

COPSOQ II Relevant Latent Variable Items and Cronbach's Alpha Statistics

Latent Variable	Items		Cronbach's Alpha*
	Job Demands		
Quantitative Demands	- Is your workload unevenly distributed so it piles up? - How often do you not have time to complete all your work tasks?	- Do you get behind with your work? - Do you have enough time for your work tasks? (reverse scored)	0.82
Cognitive Demands	- Do you have to keep your eyes on lots of things while you work? - Does your work require that you remember a lot of things?	- Does your work demand that you are good at coming up with new ideas? - Does your work require you to make difficult decisions?	0.74
Emotional Demands	- Does your work put you in emotionally disturbing situations? - Do you have to relate to other people's personal problems as part of your work?	- Is your work emotionally demanding? - Do you get emotionally involved in your work?	0.87
Demand for Hiding Emotion	- Are you required to treat everyone equally, even if you do not feel like it? - Does your work require that you hide your feelings?	- Are you required to be kind and open towards everyone – regardless of how they behave towards you?	0.57
	Job Resources		
Possibilities for Development	- Does your work require you to take the initiative? - Do you have the possibility of learning new things through your work?	- Can you use your skills or expertise in your work? - Does your work give you the opportunity to develop your skills?	0.77
Social Support from Colleagues	- How often do you get help and support from your colleagues? - How often are your colleagues willing to listen to your problems at work?	- How often do your colleagues talk with you about how well you carry out your work?	0.7
Self-Efficacy	How well do these descriptions fit on you as a person? - I am always able to solve difficult problems, if I try hard enough. - If people work against me, I find a way of achieving what I want. - It is easy for me to stick to my plans and reach my objectives.	- I feel confident that I can handle unexpected events. - When I have a problem, I can usually find several ways of solving it - Regardless of what happens, I usually manage.	0.8
	Employee Outcomes		
Burnout	These questions are about how you have been during the last 4 weeks. - How often have you felt worn out? - How often have you been physically exhausted?	- How often have you been emotionally exhausted? - How often have you felt tired?	0.83
Job Satisfaction	Regarding your work in general. How pleased are you with: - your work prospects? - the physical working conditions?	- the way your abilities are used? - your job as a whole, everything taken into consideration?	0.82

*Sourced from the official COPSOQ II scale documents (COPSOQ International Network, 2007)

School Leader Autonomy Items

I used 8 items which were included in the Principal Survey associated with school leader autonomy. School leaders were asked to rate to what extent they had autonomy over each of the stated job components. Due to the varied nature of these items, I created four sub latent variables, each being represented by two of the autonomy items. The four sub autonomy latent variables are to reflect the four key areas of school leader autonomy as identified in the NSW Local Schools Local Decisions framework (see Chapter 5) – arguably a sensible grouping of different school leader job components (NSW Department of Education, 2017). These four facets are "Staff in our Schools", "Managing Resources", "Making Decisions", and "Working Locally". Although the school leader autonomy items were not initially intended for us to categorise the four areas highlighted in the Local School Local Decisions Framework, the psychometric testing conducted on the latent variables indicate good fit. Further, the specific wording of the items directly ties to the aims associated with the different autonomy areas of the education framework. Appendix 1 provides the breakdown of the autonomy latent variables, and the associated items; in addition to the psychometric testing I conducted to confirm the validity of the measure.

Measurement of Passion

I used the Passion Scale to measure harmonious passion and obsessive passion of Australian School leaders (Vallerand et al., 2003; see Appendix 2), which were included within the Principal Survey from 2015. I used the Passion Criteria latent variable from the Vallerand et al. (2003) article regarding the formation of the Passion Scale. The Passion Criteria factor consists of five items to reflect the attributes posited to make up passion, initially used as a validation tool of the Passion Scale, rather than being part of the model itself. This latent factor was historically used to confirm the significant correlation between the Passion Criteria and the harmonious and obsessive passion factors, thus confirming the

Passion Scale represented passionate individuals. The items from the Passion Scale were amended to reflect the workplace (i.e., changing the word “activity” to “work”).

Conclusion

The three studies I conducted adopted innovative methodologies to better understand the current crisis faced by Australian school leaders. I have used a “stapler thesis” structure, allowing the studies to stand alone, yet still drawing from the same sample of Australian school leaders and instruments regarding studies 1 and 2. The specific methodology of each study is detailed in the relevant study chapter. I was able to use pioneering strategies, such as confirmatory factor analysis, structural equation modelling based on latent variables (e.g., Dicke et al., 2018), and latent interactions, and econometric difference-in-differences analyses (Lee, 2016), due to the large and representative sample of school leaders I had available. This combination of these components provided rigour and a holistic understanding of the current crisis facing our school leaders, and provided insight into how best we can address it.

Chapter 4 (Study 1): How the Job Demands and Resources of School Leaders have Fed into a High Burnout High Job Satisfaction Paradox

Abstract

School leaders are, on average, reporting high burnout *and* high job satisfaction. I explored the relationship between key school leader job demands and job resources with their burnout and job satisfaction. I also explored the interaction effect of school leaders job demands and resources on burnout and job satisfaction. The direct relationships between quantitative demands, emotional demands, and the demand for hiding emotions with burnout were positive, and negative with job satisfaction. The direct relationships between possibilities for development, social support from colleagues, and self-efficacy with burnout were negative, and positive with job satisfaction. Autonomy had no relationship with burnout, however had a direct positive relationship with job satisfaction. School leaders with high job demands and low job resources experienced the highest levels of burnout, and lowest levels of job satisfaction, and vice versa. Education policy makers should simultaneously aim to reduce school leader job demands and increase job resources to reduce reported burnout whilst maintaining high job satisfaction.

Keywords. *Job Demands, Job Resources, school leaders, school principals, burnout, job satisfaction.*

As identified in Chapter 1, school leaders play a crucial role in our society. They impact the motivation and academic success of their students (Brinks & William, 2012; Riley, 2013; Leithwood & Louis, 2012; Day, 2011), and are responsible for the wellbeing of their teachers and students (Dicke et al., 2019; Day, 2011; Koh, Steers, & Terborg, 1995). Having such an important role, it is of great concern school leaders have been reporting high levels of strain (Darmody & Smyth, 2016; Dewa et al., 2009; Grissom, Loeb, Mitani, 2015; Riley, 2013-19).

A key aim of my thesis was to better understand the current high burnout crisis facing school leaders. Further, I also aimed to explore the seemingly paradoxical nature of school leaders reporting significantly higher levels of job satisfaction than the average population in conjunction with said high levels of burnout (Riley, 2013-2019). The current study explored the impact school leader job demands and job resources had on their reported levels of burnout and job satisfaction. These analyses provided insight into how the school leader role itself influences the current high burnout high job satisfaction phenomenon. My findings help explain the current high burnout high job satisfaction phenomenon Australian school leaders are experiencing.

In Chapter 2 I discussed the nature of the school leader role. Based on the Job Demands-Resources theory (Bakker, Demerouti, & Chen, 2017; see Chapter 2), I identified the key job demands and key job resources associated with the school leader role. The key job demands identified were quantitative demands, cognitive demands, emotional demands, and the demand for hiding emotions. The key job resources identified were autonomy, possibilities for development, social support from colleagues, and self-efficacy.

The Present Investigation

Following the literature review (Chapter 2), I had two key research aims. First, to determine the impact Australian school leader job demands and job resources have on

burnout and job satisfaction. Based on Proposition Two of the JD-R theory (Bakker and Demerouti, 2017), I expected the school leader job demands would lead to health impairment, that is an increase in reported burnout. Further, School leader job resources I expected would lead to an increase in the motivation processes, thus increasing reported school leader job satisfaction.

The second aim was to analyse how the interaction between the Australian school leader job demands and job resources impacts their reported burnout and job satisfaction. Based on Proposition Three of the JD-R Theory (Bakker and Demerouti, 2017), school leader job resources should buffer the impacts of school leader job demands on reported burnout. Using a first order model I analysed the direct effects of the specific job demands (quantitative demands, cognitive demands, emotional demands, and the demand for hiding emotions) and job resources (autonomy, possibilities for development, social support from colleagues, and self-efficacy) I identified in Chapter 2 (see Figure 4.1A). This was how I addressed my first aim[1]. This first order model, however, was not suitable for analysing the interaction effects of the job demands and job resources. Such analyses would require 16 different latent interactions to be evaluated, something not feasible with current statistical software packages. To address this issue, I created a higher order model of job demands and job resources on school leader burnout and job satisfaction (see Figure 4.1B). The higher order model was a more parsimonious alternative to the first order model that also facilitated the testing of the latent interactions.

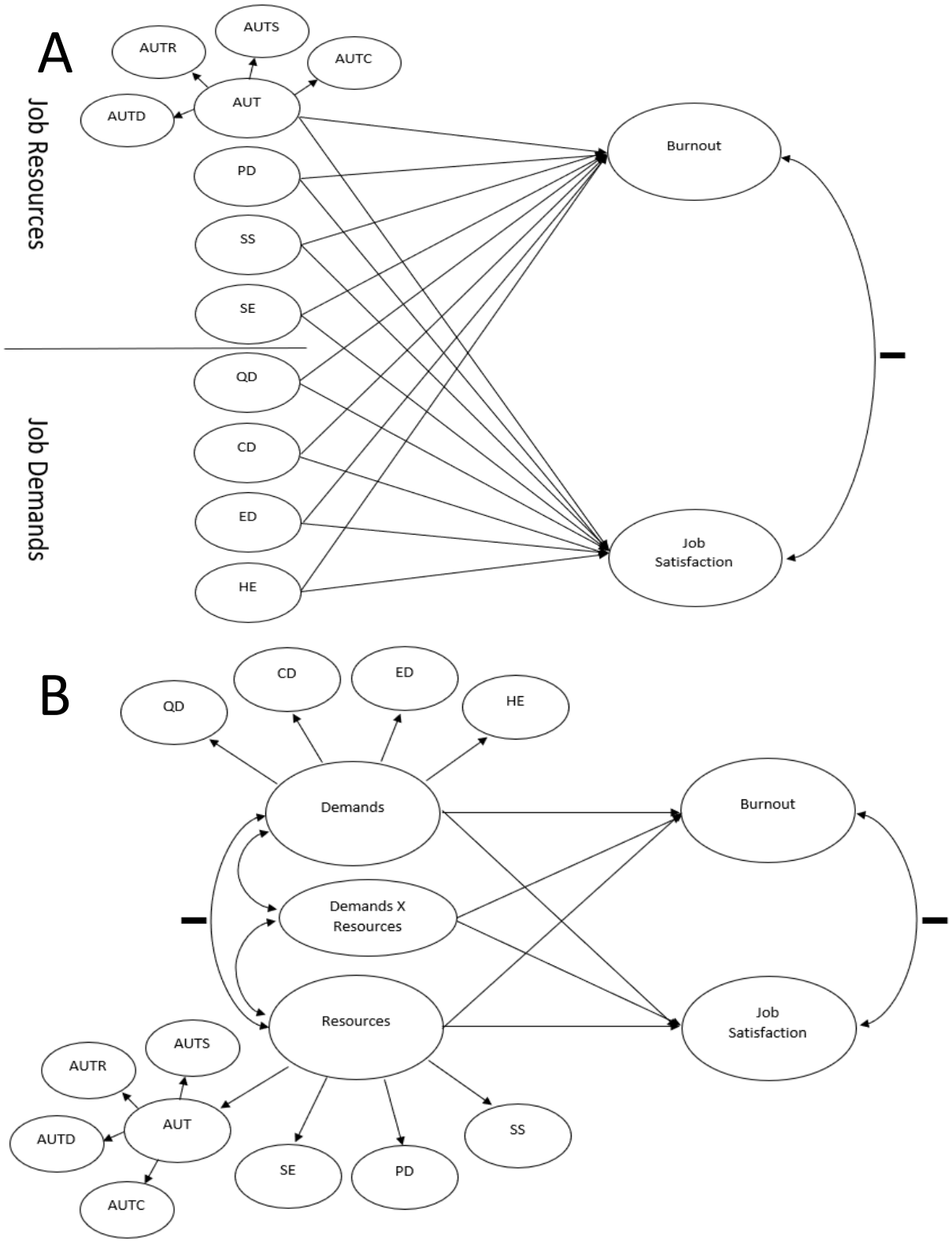
[1] The autonomy variable is a higher order factor in my model. This is because of the distinct realms of autonomy associated with the school leader position. However, it still reflects a specific job resource of interest, autonomy. I therefore still describe my first model (Figure 4.1A) as a first order model, as its purpose was to determine the impact of the specific job demands and job resources of school leader burnout and job satisfaction.

To address my two key research aims, I proposed the following two hypotheses:

Hypothesis 1. In both the higher-order and first-order models, the health impairment processes of job demands will result in increased burnout, and decreased job satisfaction. The motivational processes of job resources will lead to increased job satisfaction, and decreased burnout the buffering effect (Bakker & Demerouti, 2007).

Hypothesis 2. Job demands and job resources will interact (Bakker, Demerouti, & Chen, 2017). More specifically, the negative effects of high job demands on job satisfaction will be smaller when job resources are high than when job resources are low. Similarly, the positive effects of high job demands on burnout will be smaller when job resources are high than when job resources are low. In this respect, job resources plays a protective role in buffering some of the undesirable effects of high job demands.

Figure 4.1
First Order and Higher Order Models for School Leaders



Note: Two models were used to address my research aims. A = first order model; B = higher order model; QD = Quantitative demands; CD = Cognitive demands; ED = Emotional demands, HE = Demand for hiding emotions; AUTS = managing staff autonomy; AUTR = managing resources autonomy; AUTD = decision making autonomy; AUTC = working with communities autonomy; AUT = global autonomy; SE = Self-efficacy; DP = Possibilities for development; SS = Social support from colleagues; The indicator items of the first order job demands, job resources, burnout, and job satisfaction, are not presented in this figure to avoid crowding issues.

Methodology

Participants

The participants were Australian school leaders who completed the Australian Principal Occupational Health, Safety and Wellbeing Survey at least once between the years 2011 and 2016 inclusive (Riley 2013-2019). The sample consisted of approximately 50% of all Australian school leaders across Australia. Please refer to the Chapter 3 Research Design and Sample section for more details regarding the nature of the survey; the state and territory breakdown of the participants; and the number of participant responses collected per year (ranged from 2,049 to 2,667 per year).

Measures

For the first order model, school leader job demands (quantitative demands, cognitive demands, emotional demands, and the demand for hiding emotions), job resources (possibilities for development, social support from colleagues, and self-efficacy), burnout, and job satisfaction were measured using the Copenhagen Psychosocial Questionnaire II (see Table 3.3 for item wording and alphas). School leader autonomy was represented by four distinct facets (managing resources, staff in our schools, working with communities, and decision making). Each facet was determined by two survey items ranking the extent of autonomy school leaders believed they had over these facets of autonomy. These facets were then used as the indicators for a global autonomy variable (see figure 4.1A). For more details please refer to Chapter 3. For item wording, please refer to Appendix 1.

For the higher order model, the first order job demands were the indicators of a global job demands variable, similarly to the first order job resources being indicators for a global job resources variable (see Figure 4.1B). The burnout and job satisfaction latent variables were again used as school leader outcomes variables.

Analysis

Goodness of Fit

I explored the fit of my hypothesised models to the data using the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973), the Comparative Fit Index (CFI; Bentler 1990), and the Root Mean Squared Error of Approximation (RMSEA; Marsh, Hau, & Grayson, 2005; Steiger, 1989). Although I also reported the chi-squared (χ^2) value, a fit statistic where a non-significant value is deemed to represent a good model fit to the data, I expected the chi-squared values to be significant. This is because the chi-squared value is sensitive to sample size, resulting in most applied SEM researchers to not automatically interpret a significant chi-squared value as meaning the data fits the model poorly (Cheung & Rensvold, 2002). Table 4.1 details the typical benchmarks used to determine the fit of theoretical models to empirical data.

Table 4.1
Fit Indices Interpretations

Fit Index	Interpretation	Reference
χ^2	*P* value > .05 – Good Fit	Marsh, 1994
CFI	>.90 – Adequate Fit >.95 – Excellent Fit	Cheung & Rensvold, 2002; Marsh et al., 2004
TLI	>.90 – Adequate Fit >.95 – Excellent Fit	Cheung & Rensvold, 2002; Marsh et al., 2004
RMSEA	<.05 – Good Fit <.08 – Reasonable Fit	Browne and Cudeck, 1992

Note. Presented here are the accepted metrics representing sufficient and good model fit. χ^2 is a fit statistic, not an index. Although I report the χ^2 statistics, it likely will be found to be significant due to its sensitivity to sample size meaning even small deviations from expectation can result in significant χ^2 values (Cheung & Rensvold, 2002).

For purposes of model comparing the fit between the first order and higher order models (i.e., when parameter estimates of the higher order model can be represented as a subset of the first order model), the comparison of relative model fit is more important than absolute fit so long as the fit of the less parsimonious model (i.e., the first order model) is adequate. In the current study, the first order model is the less parsimonious model (with

more parameter estimates) and the higher-order model is the more parsimonious model. Marsh and Hau (2004; also see Cheung & Rensvold, 2002; Chen, 2007) suggest that there is support for the more parsimonious model if the change in incremental fit indices (e.g., TLI and CFI) are less than .01 and the change in RMSEA is less than .015. However, they emphasise that these are merely convenient guidelines and not golden rules.

Statistical Analysis

To address my research aims, I used the *Mplus Statistical Analysis With Latent Variables* software package (version 7.1; Muthén & Muthén, 2008-2013). My JD-R models were tested using confirmatory factor analysis (CFA) and structural equation modelling (SEM). Interaction effects require significantly more statistical power when compared to the calculation of main effects, especially within higher order models (Marsh, Wen, & Hau, 2004; Champoux & Peters, 1987). As such, to increase the statistical power and accuracy of my analyses, I stacked the data from the years 2011 – 2016 from the Principal Survey, with each wave including between 2,010 to 2,667, and totalling 13,758 Australian school leader responses (see Chapter 3 for further details). I nested the data using a complex type design, clustering the unique school leader IDs for both the first order and higher order models. This was to account for the school leaders who completed the survey over multiple time points. The MLR estimator was used (Maydeu-Olivares, 2017).

I tested for two way interactions between the higher order job demands and job resources on school leader burnout and job satisfaction using the Latent Moderated Structural Equations method (LMS; Klein & Moosbrugger, 2000). In explicating the nature of this interaction, I also analysed the impact four different school leader profiles have on reported burnout and job satisfaction; those with high job resources and high job demands, those with high job resources and low job demands, those with low job resources and high job demands, and those with low job resources and low job demands. I plotted these results to provide a

greater perspective of the impact the interaction between job demands and resources, in addition to different school leader profiles, had on reported burnout and job satisfaction.

Results

Evaluation of Psychometrics

The psychometric testing indicated that both the first order and higher order models provided reasonable fit to the data. The first order model had a χ^2 of 14,631, a CFI of .94, a TLI of .93, and a RMSEA of .03. The higher order model had a χ^2 of 17,147, a CFI of .92, a TLI of .92, and a RMSEA of .04. To be expected, the fit of the higher order model is slightly poorer than that of the first order model. This is because the higher order model is nested under the first order model (i.e., the model with the individual job demands and job resources specified), thus being more parsimonious. However the difference in fit of particularly TLI and RMSEA justify the use of the higher order model (Marsh & Hau, 1996). As such, I was able to appropriately use the higher order model to tests the interactions between job demands and job resources on school leader burnout and job satisfaction. This was not plausible with the first order model, as it would not be possible to simultaneously test 16 different interactions between each job demand and job resource on burnout and job satisfaction.

Factor Loadings

The majority of the factors in the first and higher order models were distinguished with four indicators, with a few exceptions. The four specific school leader autonomy foci were represented by two indicators each, nested under the global autonomy factor. The social support from colleagues and demand for hiding emotions factors were measured via three indicators each, and the self-efficacy factor was represented via six indicators.

The factor loadings for my first order and higher order variables were strong, with the lowest loading being .474 (the social support from colleagues indicator for higher order job resources), and the highest being .921 (the emotional demands indicator for higher order job

demands; see Table 4.2). The mean factor loading for the first order model is .741, and .696 for the higher order model. These results, along with the acceptable psychometrics, indicate both the first and higher order models are useable.

Correlation Matrix

The correlation matrix of the first and higher order factors yielded expected results (Table 4.3). The first order and higher order job demands were negatively correlated with all first order and higher order job resources. Job demands were also negatively correlated with job satisfaction, and positively correlated with burnout. All job resources were negatively correlated with burnout, and positively correlated with burnout. Every job demand was positively correlated to the other job demands, as each job resource was positively correlated with all other job resources. Finally, burnout and job satisfaction were negatively correlated.

Table 4.2
Loadings of First and Higher Order Factors

	First Order Factors											Outcomes		Higher Order Factors		
	AUTD	AUTS	AUTR	AUTC	PD	SC	SE	QD	CD	ED	HE	BO	JS	AUT	RES	DEM
							Items									
Item 1	.851	.893	.837	.761	.470	.752	.688	.743	.637	.747	.538	.920	.754			
Item 2	.893	.893	.813	.753	.796	.832	.514	.563	.654	.661	.723	.868	.535			
Item 3					.770	.641	.613	.839	.691	.805	.658	.791	.840			
Item 4					.863		.774	.774	.711	.598		.832	.855			
Item 5							.776									
Item 6							.704									
							Factors									
AUTD														.800		
AUTS														.827		
AUTR														.827		
AUTC														.811		
AUT*															.529	
PD															.701	
SC															.474	
SE															.497	
QD																.513
CD																.774
ED																.921
HE																.681

Note. AUTD = Decision Making Autonomy; AUTS = Managing Staff Autonomy; AUTR = Managing Resources Autonomy; AUTC = Working with Communities Autonomy; PD = possibilities for development; SC = social support from colleagues; SE = self-efficacy; QD = quantitative demands; CD = cognitive demands; ED = emotional demands; HE = demand for hiding emotions; BO = burnout; JS = job satisfaction; AUT = autonomy; RES = job resources; DEM = job demands. Cont. next page.

Cont. In this higher-order factor analysis, multiple indicators are used to define each of the first-order factors.. The two higher-order factors (job demands and job resources) are defined in relation to these first order factors. The two outcomes (burnout and job satisfaction) are first-order factors. For job autonomy (a resource) there are four components that are modelled as first-order factors, which are used to define a higher-order autonomy factor, that is a component of the higher-order resources factor.

Table 4.3
Correlation Matrix of First and Higher Order Factors

	QD	CD	ED	HE	DEM	AUTD	AUTS	AUTR	AUTC	AUT	PD	SC	SE	RES	BO	JS
QD	1.000															
CD	.397	1.000														
ED	.473	.712	1.000													
HE	.351	.527	.628	1.000												
DEM	.514	.773	.921	.682	1.000											
AUTD	-.007	-.011	-.013	-.009	-.014	1.000										
AUTS	-.007	-.011	-.013	-.010	-.014	.662	1.000									
AUTR	-.007	-.011	-.013	-.010	-.014	.661	.684	1.000								
AUTC	-.007	-.011	-.013	-.010	-.014	.648	.670	.670	1.000							
AUT	-.009	-.013	-.016	-.012	-.017	.800	.827	.827	.810	1.000						
PD	-.012	-.021	-.021	-.016	-.023	.294	.304	.304	.298	.368	1.000					
SC	-.008	-.012	-.014	-.010	-.015	.199	.206	.206	.202	.249	.329	1.000				
SE	-.008	-.012	-.015	-.011	-.016	.209	.216	.216	.212	.261	.346	.234	1.000			
RES	-.017	-.025	-.030	-.022	-.033	.422	.436	.436	.427	.527	.698	.472	.495	1.000		
BO	.299	.449	.535	.397	.581	-.132	-.137	-.136	-.134	-.165	-.219	-.148	-.155	-.313	1.000	
JS	-.169	-.254	-.303	-.224	-.329	.330	.341	.341	.334	.413	.546	.369	.388	.783	-.416	1.000

Note. Above reflects the correlation statistics between all latent variables I used within this study. AUTD = Decision Making Autonomy; AUTS = Managing Staff Autonomy; AUTR = Managing Resources Autonomy; AUTC = Working with Communities Autonomy; PD = possibilities for development; SC = social support from colleagues; SE = self-efficacy; QD = quantitative demands; CD = cognitive demands; ED = emotional demands; HE = demand for hiding emotions; BO = burnout; JS = job satisfaction; AUT = autonomy; RES = job resources; DEM = job demands. Presented is the estimated correlation matrix for all latent variables, noting that in the actual higher-order model correlations among the first-order factors were explained in terms of their relation to the higher-order factors (see Figure 4.1 and Table 4.2)

Hypothesis 1

In both the higher-order and first-order models, the health impairment processes of job demands will result in increased burnout, and decreased job satisfaction. The motivational processes of job resources will lead to increased job satisfaction, and decreased burnout the buffering effect (Bakker & Demerouti, 2007).

First Order Model

The results from my first order model predominately supports Hypothesis 1. The paths from quantitative demands, emotional demands, and the demand for hiding emotions to burnout were all positive and significant (see Table 4.4). The paths from these job demands to job satisfaction were all negative and significant.

Regarding job resources, the paths from possibilities for development, social support from colleagues, and self-efficacy to burnout were all negative and significant, and the paths from these job resources, in addition to autonomy, to job satisfaction were positive and significant.

In contrast to my predictions, the paths from cognitive demands to burnout and job satisfaction, and the path from autonomy to burnout, were not significant. Although the non-significant paths contradict hypothesis one, these results need to be interpreted with caution. In particular, consistent with predictions, cognitive demands had a significantly (all $p < .01$) positive correlation with burnout ($r = .449$; see Table 4.3) and a significantly negative correlation with job satisfaction (-.254). Similarly, consistent with predictions, autonomy was significantly positively correlated with job satisfaction (.413) and negatively correlated with burnout (-.165). As such, it is evident cognitive demands and autonomy were related to outcomes in a manner expected by a typical job demand and job resource respectively. This indicates that the lack of significance in the three paths found in the first order model may be due to multicollinearity issues in which the variance explained by these two variables were

also explained by other variables in the model. Thus, for example, cognitive demands were highly correlated with emotional demands (as well as the other demands) whereas autonomy was moderately correlated with possibilities for development (as well as the other resources).

In summary, these results mostly support Hypothesis 1; most paths leading from job demands to burnout were positive, and to job satisfaction negative; and the paths leading from job resources to burnout were negative, and to job satisfaction positive.

Table 4.4
First Order Model Results

Variable	Estimate	Std. Error	*z*-value	*p*-value
		Burnout		
QD	.282	.013	21.109	**.000**
CD	-.034	.023	-1.489	.136
ED	.340	.026	13.283	**.000**
HE	.108	.017	6.238	**.000**
AUT	-.005	.013	-.394	.694
PD	-.049	.013	-3.835	**.000**
SC	-.071	.012	-6.023	**.000**
SE	-.119	.013	-9.503	**.000**
		Job Satisfaction		
QD	-.126	.013	-9.823	**.000**
CD	-.008	.020	-.407	.684
ED	-.168	.022	-7.508	**.000**
HE	-.068	.016	-4.348	**.000**
AUT	.173	.012	13.988	**.000**
PD	.344	.012	27.716	**.000**
SC	.186	.013	14.836	**.000**
SE	.130	.013	10.346	**.000**

Note. QD = quantitative demands; CD = cognitive demands; ED = emotional demands; HE = demand for hiding emotions; AUT = autonomy; PD = possibilities for development; SC = social support from colleagues; SE = self-efficacy; Significant results ($p < .05$) are in bold.

Higher Order Model

The results from the higher order model support hypothesis 1 (Table 4.5). The path from higher order job demands to burnout was positive and significant, whereas the path to job satisfaction was negative and significant. The path from job resources to burnout was negative and significant, with the path to job satisfaction being positive and significant.

Therefore, the results from both the first order and higher order models largely support Hypothesis 1.

Table 4.5
Higher Order Model Results

Variable	Estimate	Std. Error	*t*-score	*p*-value
		Burnout		
DEM	.571	.019	29.845	**.000**
RES	-.296	.019	-15.728	**.000**
INT	.039	.010	3.729	**.000**
		Job Satisfaction		
DEM	-.303	.017	-18.233	**.000**
RES	.775	.031	25.004	**.000**
INT	.108	.013	8.408	**.000**

Note. DEM = job demands; RES = job resources; INT = interaction term between job demands and job resources; Significant results ($p < .05$) are in bold.

Hypothesis 2

Job demands and job resources will interact (Bakker, Demerouti, & Chen, 2017). More specifically, the negative effects of high job demands on job satisfaction will be smaller when job resources are high than when job resources are low. Similarly, the positive effects of high job demands on burnout will be smaller when job resources are high than when job resources are low. In this respect, job resources plays a protective role in buffering some of the undesirable effects of high job demands.

Job Demands and Job Resources Interaction Terms

The interaction effects of job demands and job resources on burnout and job satisfaction were statistically significant and in the predicted direction. School leaders reporting the lowest burnout and highest job satisfaction were those who reported high job resources and low job demands (Table 4.6). Conversely, those with high job demands and low job resources reported the reported the highest levels of burnout and low levels of job satisfaction. Nevertheless, the sizes of the interaction effects were substantially smaller than the large effects of the first order ("Main") effects (Table 4.5). This is reflected distinctly in

the two-way interaction plots. In the burnout interaction plot (Figure 4.2), the two lines reflecting the effect of job resources on burnout when job demands are high and low are nearly parallel (i.e., indicating a lack of a substantial interaction effect. However, although the interaction is small in size, the gradient of the line with high resources is steeper, not less steep as would be expected on the basis of JD-R theory. Thus, there is no evidence that resources buffer the effects of demands on burnout. For the job satisfaction plot (Figure 4.3). the gradient is steeper for the high demands line, indicating that the negative effects of low resources is greater when demands are high. As such, this interaction is consistent with JD-R theory.

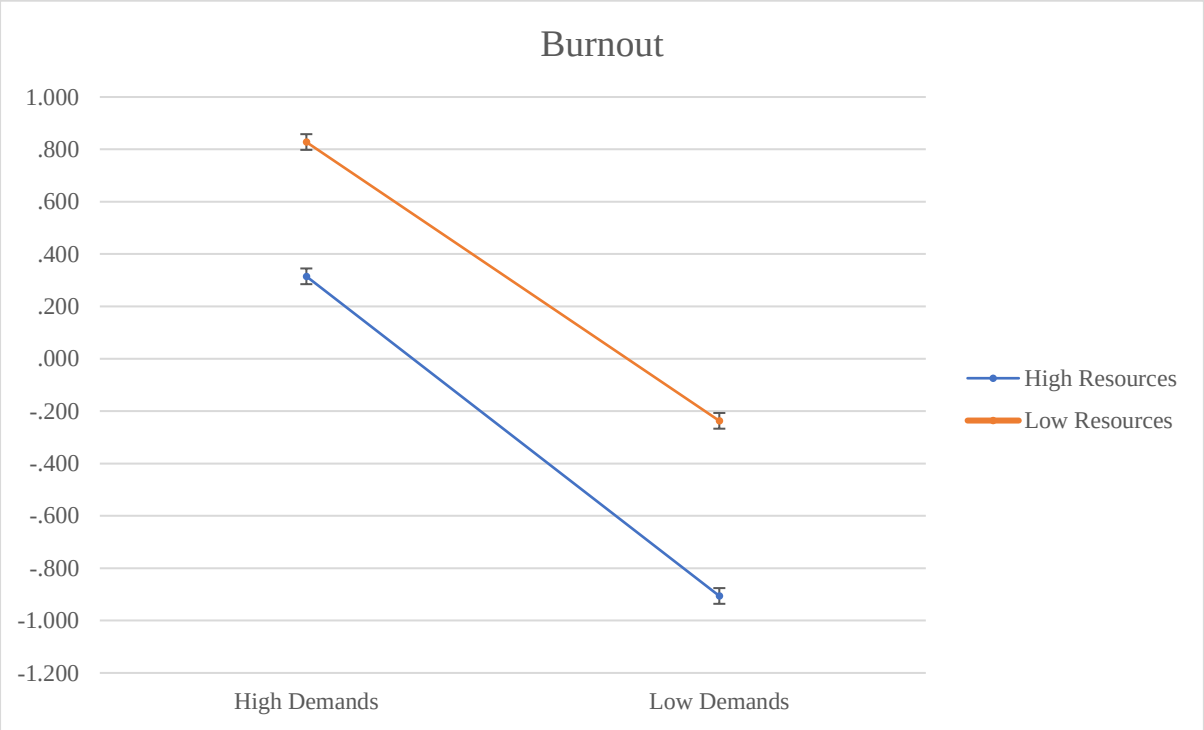
Table 4.6
School Leader Job Demands and Resources Results

Variable	Estimate	Std. Error	*t*-value	*p*-value
		Burnout		
HRHD	.315	.028	11.362	**.000**
HRLD	-.906	.031	-29.364	**.000**
LRHD	.828	.027	30.722	**.000**
LRLD	-.237	.030	-8.007	**.000**
		Job Satisfaction		
HRHD	.580	.039	14.830	**.000**
LRHD	-1.187	.043	-27.573	**.000**
HRLD	.970	.032	30.174	**.000**
LRLD	-.363	.035	-10.484	**.000**

Note. High job demands/resources are one standard deviation above the mean, and low job demands/resources are one standard deviation below the mean. HRHD = high job resources and high demands; HRLD = high job resources and low job demands; LRHD = low job resources and high job demands; LRLD = low job resources and low job demands.

Figure 4.2

Interaction between job demands and job resources on school leader burnout



Note. The red line represents school leader reporting lower job resources on average than other school leaders. The blue line represents school leaders reporting higher job resources on average than other school leaders. The points on the left reflect how the difference in reported job resources impacts reported levels of burnout for school leaders reporting high job demands. The points on the right reflect how the difference in reported job resources impact reported burnout for school leaders experiencing low job demands. High job demands/resources are one standard deviation above the mean, and low job demands/resources are one standard deviation below the mean.

Figure 4.3

Interaction between job demands and job resources on school leader job satisfaction

Note. The red line represents school leader reporting lower job demands on average than other school leaders. The blue line represents school leaders reporting higher job demands on average than other school leaders. The points on the left reflect how the difference in reported job demands impacts reported levels of job satisfaction for school leaders reporting high job resources. The points on the right reflect how the difference in reported job demands impact reported job satisfaction for school leaders with low job resources. High job demands/resources are one standard deviation above the mean, and low job demands/resources are one standard deviation below the mean.

Discussion

The aim of Study 1 was to understand how the school leader role affects the high levels of reported burnout and job satisfaction of Australian school leaders. I aimed to determine the impact of job demands and job resources most common to school leaders. This also provided insight into the extent job demands hinder the positive effects from job resources on job satisfaction, and the extent job resources buffer the negative effect from job demands on burnout.

Based on the JD-R theory, employee burnout results from an imbalance of an employee's job demands and available job resources (Bakker, Demerouti, & Chen, 2017). Job demands are components of one's job that leads to strain and job dissatisfaction, whereas job resources are components which support an employee which mitigate strain associated with job demands, and promote job satisfaction. However, my results indicate the substantial effects of job demands on burnout were only moderated by job resources to a small extent. Further, it was school leaders that experienced considerably lower levels of job demands compared to their available resources that experienced the ideal scenario of lower levels of burnout and higher levels of job satisfaction. Focussing on just lowering levels of job demands may reduce school leader burnout, but unless it is accompanied with higher levels of job resources, school leaders will likely report lower levels of job satisfaction.

Conversely, even with high job resources, the school leaders experienced higher burnout if they had high job demands. Therefore it appears necessary to adopt a strategy of both reducing job demands and increasing job resources if policy makers wish to reduce school leader burnout without reducing their job satisfaction.

Interestingly, school leaders with both high levels of job demands and job resources reported higher than average levels of burnout, yet also reported higher than average levels of job satisfaction, when compared with other school leaders. School leaders with both low

levels of job demands and job resources reported lower than average levels of burnout, and also reported lower than average levels of job satisfaction. Considering the results from my higher order model this was to be expected (Table 4.5). The positive effect of higher order job demands on school leader burnout is almost double the negative effect of higher order job resources on burnout. On the other hand, the positive effect of higher order job resources on job satisfaction is more than double the negative effect of job demands on job satisfaction.

Although not directly explored via the current study's hypotheses, the significant difference of effect the first order factors have on burnout and job satisfaction may be a consideration needed to inform policy decisions. As such, the specific nature of a job demand or job resource may have large differences in impact on school leader outcomes. For example, although multicollinearity associated with the multiple demands may be the reason why cognitive demands did not significantly impact burnout or job satisfaction in my first order model, previous research also suggests mixed results based on this demand. In particular, Jimmieson, Tucker, and Walsh (2017) found cognitive demands decreased burnout amongst healthcare workers, acting the opposite as they understandably hypothesised. However, Meyer and Hünefeld (2018) found that cognitive demands do led to greater levels of reported burnout (Meyer & Hünefeld, 2018), but also led to increased job satisfaction.

In addition, my results indicate that, although the majority of demands and resources had a material impact on school leader burnout and job satisfaction, the size of the impact differed significantly. For example, as similarly found by Friedman (2002), emotional demands impacted school leader burnout the greatest when compared with other job demands. This also highlights the variability of how job demands and resources impact employee outcomes. As such, both the type of job demand or resource, and the extent of an employee experiencing such a specific job demand or resource, may need to be considered in

order to best approach the current high burnout high job satisfaction phenomenon facing our school leaders.

Of note, the differences in effect sizes associated with particular demands and resources seems to contradict the application of a higher order model, but this is not necessarily the case. For example, based on the first-order model, the demand with the largest impact was emotional demands. Consistent with this finding, the first-order demand with clearly the largest loading on the high-order demand factor was also emotional demands. In this way the more nuanced first order and more parsimonious higher order models are consistent. Nevertheless, there is potentially important information available in the individual demands and resources and this is not clearly reflected in the higher-order model.

However, regardless of the uncovered nuances from my first order model, my higher order model overall supports the JD-R theory with regards to how job demands and resources impact employee outcomes. School leaders with low demands and high resources had the lowest reported burnout and highest job satisfaction, and vice versa. That being said, my results appear to contradict Bakker and Demerouti's (2017) proposition 4 of the JD-R theory. They posited that employees who experienced the combination of high job demands and high job resources were involved in "active jobs". Such jobs involve frequent challenges where employees need to learn new things and use new behaviours. Consequently, employees with active jobs (i.e., both high job demands and high job resources) should experience high levels of motivation. My results, however, indicate that is not the case with Australian school leaders. Indeed, school leaders who reported high job demands and high job resources reported above average job satisfaction, yet school leaders with low job demands and high job resources reported the highest job satisfaction.

Policy Implications

My findings imply that addressing this high burnout crisis facing our school leaders is complicated, likely explaining its persistence for decades (Friedman, 1995). First, the interconnection of demands of school leaders would greatly prohibit the ability for policy makers to target and reduce those most harmful without fundamentally changing the core nature of the school leader role. As such, policy makers would likely need to resort to promoting greater school leader resources, whilst simultaneously reducing school leader job demands in a uniform manner. Second, the typical education reform has historically focussed on increasing the possibilities for development, and autonomy of school leaders. Recent education reform, such as the *Empowering Local Schools Initiative and Local Schools Local Decisions* within Australia (see Chapter 5 for more details) are examples of the numerous education policies aimed at increasing school leader responsibilities via increased autonomy and training. Although my results indicate these resources significantly increase school leader job satisfaction, they have minimal, if any, impact on reducing school leader burnout. This focus likely also partially explains the current high burnout/high job satisfaction phenomenon, where the current policy focus promotes higher school leader job satisfaction, whereas it doesn't sufficiently mitigate the negative impacts of high school leader demands.

Although the research on the promotion of school leader self-efficacy is limited (Conley, 2015), it has been reported that school teacher and school leader self-efficacy is influenced by the amount of autonomy and support, and the type of relationships they have with leaders on the district level (Tschannen-Moran & Gareis, 2004; Ware & Kitsantas, 2011). Further, Pas, Bradshaw, and Hershfeldt (2012) found that teacher preparedness was positively associated with self-efficacy. Arguably education reform increasing school leader autonomy, support, district leadership relationships, and preparedness may be an effective

strategy in reducing school leader burnout via increases to their self-efficacy. This suggestion, however, needs to be tested amongst school leaders to determine its viability.

Although my findings imply policy makers should consider, even target, specific demands and resources to address, in practice this may not be a realistic approach. Arguably the higher order model represents the pragmatic reality of the Australian school leader role when considering their collective responsibilities and expectations. It is unlikely the specific job demands and resources neatly and exclusively align to each job responsibility or support mechanism associated with school leaders. For example, emotional demands have the biggest impact on school leader burnout, yet they are associated with the majority of the responsibilities of school leaders. School leaders manage numerous stakeholders, and their emotionally straining issues, daily (Maxwell and Riley, 2017). They frequently are required to play the role of mediator for conflicts between teachers, students, and parents (Ediger, 2016), and are confronted with troubling situations such as students experiencing homelessness, abuse, and mental illness, to which they have a duty of care (Ediger, 1996). Such responsibilities too would require high levels of quantitative and cognitive demands, in addition to school leaders needing to temper their own emotions. Thus, the interconnected nature of school leader job demands and job resources imply targeting the most theoretically relevant job demands/resources, may not be practically feasible.

Limitations and Areas for Further Research

Study 1 used data sourced from Australian school leaders. As such, the typical nature of the school leader role, and its associated job demands and job resources, may be specific to the Australian context. Additional research on school leaders sourced from other countries should be conducted to ascertain whether these findings reflect school leaders more broadly.

A potentially important limitation of the present investigation is the cross-sectional nature of the data. However, I note that a longitudinal approach with these data is used in Study 2 that follows from Study 1.

It is likely a large number of components associated with school leaders would be classified as being either a job demand or a job resource within the realm of JD-R theory. Indeed, pursuant to my literature review the job demands and resources I included within my models appear to be the most relevant to school leaders, there is the possibility other key job demands or resources have not been considered. As such, further research into other potential key job demands and resources associated with school leaders needs to be conducted in order to ensure policy makers are best informed when tackling the current school leader crisis.

Additional research into the promotion of self-efficacy among school leaders is needed, considering the significant impact it has on mitigating the impact of job demands on burnout. Indeed promotion of self-efficacy was found to be effective with school educators (Pas, Bradshaw, and Hershfeldt 2012), yet this has not been tested with school leaders. Specifically, the connection between the promotion of school leader preparedness via education reform, and increases in self-efficacy, should be researched to determine its viability as a strategy in reducing school leader burnout. Further, strategies to reduce the emotional demands of school leaders that are from a practical standpoint (i.e., those that do not require fundamental changes to the school leader role) need to be explored.

Conclusion

School leaders have varied and highly complex job responsibilities. The impact of their job demands on reported burnout far exceeds the mitigating influence the job resources afforded to them have. Further, job resources have a far greater impact on job satisfaction compared with that of job demands. This may be a key reason as to why school leaders are currently experiencing a combination of high burnout and high job satisfaction. Although

specific job demands and job resources have varying levels of impact on burnout and job satisfaction, it may not be possible to specifically target first order job demands or resources without fundamentally changing the school leader role. Further, although significant, the extent job resources mitigate school leader burnout is comparatively minimal to the direct effects of job demands and job resources. It therefore appears necessary to simultaneously reduce job demands whilst promoting job resources to successful reduce the current high levels of school leader burnout, whilst maintain their current high levels of job satisfaction.

Chapter 5: Study 2 – The Impact of Australian Education Reform on School Leader Outcomes

Abstract

It has been claimed by education union representatives that current education reforms have led to the high levels of reported school leader burnout. To explore this claim, over a period of six years I explored the impact two Australian education reforms – *Empowering Local Schools National Partnership*, and *Local Schools Local Decisions*, had on Australian school leader reported burnout and job satisfaction. Both policies successfully increased reported school leader autonomy, their primary foci, and also increased reported job satisfaction. The reforms, however, had minimal, if any, effect on other job resources or job demands. The reforms also did not impact school leader reported burnout. Therefore it appears the claims being made that current education reforms have led to the high levels of reported school leader burnout are not supported. That said, the minimal impact these policies have on addressing the current levels of burnout, and minimal impact on school leader job demands and job resources generally, imply policy makers need to reconsider whether the current approach of education reform is the most efficient use of limited government resources. Indeed, the fundamental aim of education policy makers is to promote better student outcomes, yet policy makers should seek education reform that address both student and staff outcomes universally.

Keywords. *Education reform, education policy, controlled autonomy, school principals, school leaders, burnout, job satisfaction, job demands, job resources.*

In this Chapter I explored the impact two recent education reforms have had on Australian school leader outcomes. This study delves into the current international push for increasing controlled autonomy of school leaders within the Australian environment. My findings provide insight into the legitimacy of the seemingly oxymoronic notion of controlled autonomy, and whether it is the panacea touted by education policy makers (Weiner & Woulfin, 2017), or whether it is responsible for the significant increases to Australian school leader job demands and burnout (Australian Education Union, 2019). My results also indicate how the current education policy environment is contributing to the high burnout/high job satisfaction phenomenon being faced by Australian school leaders.

International Context

Since the 1990s, the Global Education Reform Movement has resulted in standardisation-oriented reforms being implemented worldwide, especially within OECD nations (Sahlberg, 2015; Mundy et al., 2016; See Chapter 2 for more information). In an effort to best serve individual community and student needs, education systems have also progressively become decentralised (Checchi, 2006). Consequently, over the last decade education reform has been focussed on increasing school leader autonomy, yet still framed within standardised accountability metrics and national guidelines. This seemingly oxymoronic strategy of standardised decentralisation has been referred to providing school leaders with "controlled autonomy" (Weiner & Woulfin, 2017). Differing forms of education reform reflecting this strategy is evident in numerous countries, such as the US (Steinberg & Cox, 2017), Finland (Saarivirta & Kumpulainen, 2016), the UK (Weiner & Woulfin, 2017), China (Hamilton, 2014), and Australia (Hingston, 2018).

Whether the promotion of "controlled autonomy" leads to legitimate increases in school leader autonomy, is questionable. Although a rather recent phenomenon within our education systems, controlled autonomy has been well explored and enacted within the

context of corporate culture. Ekman (2012) too identified the contradictory aspects of controlled autonomy, posing the question as to whether a controlled autonomy culture "may be liberating and oppressive at the same time; or whether it may represent opportunities and bindings simultaneously" (p. 17). Of concern, empirical studies on such corporate structures has led Critical Management Studies scholars to conclude they are anything but beneficial to employees. Barker (2006), for example, found that that the self-managing teams analysed inevitably reproduced the majority of control mechanisms that existed when the company had a hierarchical structure, yet via peer pressure compared to definitive rules. However, the employees felt the process was more natural and self-driven, leading to a greater willingness to adhere to controls which they place onto themselves. Ironically, Barker concluded the employees ended up having less autonomy, saying "The iron cage becomes stronger. The powerful combination of peer pressure and rational rules…creates a new iron cage whose bars are almost invisible to the workers it incarcerates" (p. 207, 2006).

Further, it has been claimed such education reforms have instead been detrimental to school leaders (Australian Education Union, 2019). Indeed, the extent of reported school leader job demands has been steadily rising over the last decade, in addition to school leaders reporting significantly greater levels of burnout when compared with the average population (Riley, 2018). Organisations advocating on behalf of school teachers and leaders have blamed education reforms promoting controlled autonomy for the these concerning trends (Australian Education Union, 2019). A lack of empirical evidence tying controlled autonomy education reform to increases in school leader job demands and burnout, however, places this claim in question. Further, based on the findings from Study 1, school leader autonomy had little impact on reported burnout, but rather is beneficial to school leaders regarding its positive relationship with job satisfaction (see Chapter 4, Table 4.6). As such, the impact that controlled autonomy education reform has had on school leaders needs to be examined.

Australian Education Reform

The majority of Australian education departments, both federal and state, have progressively been implementing controlled autonomy education reform over the last decade. The transparency of policy documentation and timelines, in addition to a plethora of publicly available data associated with Australian education systems and populations in general, makes Australian school leaders an excellent demographic to study in order to explore the impact of these reforms on their role and wellbeing.

Two key examples of education reform in Australia that reflect the international push for increased controlled autonomy for school leaders are the *Empowering Local Schools National Partnership* (ELS), and *Local Schools Local Decisions* (LSLD). Specifically, the LSLD policy was used as an example of controlled autonomy reforms that are responsible for the increases in school leader demands and burnout by the New South Wales (NSW) Teachers Federation (Australian Education Union, 2019). These two education reforms have been well documented, both in nature and implementation progression. As such, I explored the impact these education reforms had on school leader outcomes. Below I have outlined the nature of each.

Empowering Local Schools National Partnership

The *Empowering Local Schools National Partnership* (ELS) was an Australian Federal Government initiative with the aim of increasing the decision making of school leaders in three areas of governance: funding, infrastructure, and workforce (Department of Education, Employment and Workplace Relations, 2013). Upon its implementation in 2012, a total of 926 government, Catholic, and independent schools across Australia participated. Between 2012-2014 was “Phase One” of the initiative, where the participating schools were provided with start-up grants of between $40,000 and $50,000, in addition to school leaders being provided with training and professional development opportunities (worth up to

$3,500), equating to $69 million being spent nationally. Phase Two was intended to then follow for 5 years, with the government having committed an additional $406 million. As described by the government, the ELS was designed to help "create an enabling environment in which schools can make decisions about how best to improve teaching and learning" (Department of Education, Employment and Workplace Relations, 2013, para 9).

In 2014 as part of the newly elected government's budget the ELS was abolished, meaning that the initially planned Phase Two of the initiative was never implemented. Although not definitely stated, this choice may have been made in response to the considerable criticism this policy, and others of its nature, received by the "Save Our Schools" representative body during a prior Australian Senate Education Committee Inquiry (Save Our Schools, 2013). This also provides an ideal natural experiment, as a dramatic increase in controlled autonomy was implemented and then removed in a short span of time.

Local Schools Local Decisions

Local Schools Local Decisions (LSLD) encompasses a range of education policy reforms which began being implemented from 2012 within NSW. The overarching aim of LSLD was to give "principals and their school communities a greater say over how they allocate and use their available resources to best meet the needs of their students" (NSW Department of Education, 2017). Effectively, policy makers argued the reforms gave significantly greater autonomy to school leaders, in addition to access to and control of resources. They posited this increased autonomy would result in better student outcomes. The LSLD reforms had five distinct areas of focus; managing resources, staff in our schools, working locally, reducing red tape, and making decisions. The distinct changes led to school leaders deciding on how to fill approximately 60% of staff vacancies; limitations being removed on how school budgets would be allocated; and the ability for school leaders to engage and work with vendors and entities within their local communities (see Appendix 3

for the LSLD Report Card which reflects the specific changes and associated timelines). A number of models were also designed to assist school leaders with their new responsibilities, in addition to new courses being made available for professional development. The LSLD is still enacted at the time of writing. Again this provides a useful natural experiment to explore the impact of policies intended to increase school leader autonomy.

The Present Investigation

With this current study I explored whether education reform promoting controlled autonomy, a seemingly oxymoronic strategy of decentralisation framed with accountability metrics and national guidelines, led to actual increases in school leader autonomy. Due to the claims of such reform leading to increases in school leader job demands and burnout, I too explored the impact of such reform on school leader job demands, in addition to reported burnout. It is conceivable that, given the aims of the ELS and LSLD policies that school leaders received additional resources commensurate with the increased autonomy of their role but that this came at the cost of increased demands from their expanded role. As such, I also examined the impact these polices had on school leader job resources. Finally, due to the findings from Study 1 regarding the positive impact autonomy has on job satisfaction, I also explored the impact these reforms had on school leader job satisfaction.

Using the data from the Principal Survey between years 2011 and 2016 (See Chapter 3 for more information on the survey), I had the unique opportunity to analyse the impact the two education reforms had on school leader outcomes using a quasi-experimental design. In 2012 the Federal government implemented the *Empowering Local Schools National Partnership* (ELS), and the NSW State government implemented the *Local Schools local Decisions* (LSLD) frameworks, both aimed at increasing school leader controlled autonomy. Although this study measures the impact of Australian education policies on school leader

outcomes, these education reforms reflect the international education form focus on increasing school leader controlled autonomy.

I drew upon the Job Demands-Resources (JD-R) model that I tested in my first study to measure school leader outcomes (Chapter 4). First, I tested whether the education reforms aimed at increasing controlled autonomy led to legitimate increases in school leader autonomy. Second, based on the associations I found between school leader autonomy and burnout and job satisfaction in Study 1 (see Chapter 4, Table 4.6), I hypothesised that the policies led to no significant changes in reported school leader burnout (given the non-significant effect I found between autonomy and burnout in my previous study), but led to increases in reported school leader job satisfaction as a result of greater school leader autonomy (again per the findings from Study 1). Finally, I tested the impact the policies had on the other school leader outcomes used in Study 1 regarding school leader job demands and job resources. As such, for this Study I had the following hypotheses and research question:

Hypothesis 1. School leaders experienced significantly greater levels of autonomy as a result of the education reforms.

Hypothesis 2. Greater school leader autonomy led to no significant change in reported burnout, but led to significant increases in reported job satisfaction.

Research Question 1. What impact did the education reforms have on school leader job demands and resources?

Measures

School leader job demands (quantitative demands, cognitive demands, emotional demands, and the demand for hiding emotions), job resources (possibilities for development, social support from colleagues, and self-efficacy), burnout, and job satisfaction were measured using the Copenhagen Psychosocial Questionnaire II. School leader autonomy was represented by four distinct facets of autonomy identified in the LSLD policy (managing

resources, staff in our schools, working locally, and making decisions), each determined by two items ranking the extent of autonomy school leaders believed they had over these facets of autonomy. These facets were then aggregated to represent holistic school leader autonomy, by modelling the facets as the indicators of an aggregated autonomy variable, then extracting the factor score to ascertain a single value (see Chapter 3, and Appendix 1 for more information). School leader job demands and job resources (including autonomy) were also aggregated to represent holistic school leader job demands and job resources using the same method. Similarly to Study 1, factor scores of the latent variables were used to provide more accurate results when compared with the use of unweighted average scale scores. For specific information regarding these measures and associated psychometric qualities, please refer to my Methodology chapter (Chapter 3) and Study 1 (Chapter 4).

Methodology

Due to the complex nature of policy analysis, numerous considerations must be made in order to ensure an appropriate methodology is adopted. I drew from the same sample used in Study 1 for the current study (also see Chapter 3), however, specific groups were designated/excluded, pursuant to the considerations I have detailed below.

Sampling Issues

In order to provide as close to an all-else-being-equal comparison between principals exposed to the ELS and LSLD policies and those not exposed, I used the following strategies.

Control Group. Although important, controlling for covariates is unable to account for the influence of unobserved variables. To address this issue, I designated a control group and a treatment group. The control group experienced similar conditions during the period of analyses when compared with the treatment group (i.e., were similar on unmeasured covariates), except for not being impacted by the policy of interest. The aim was to provide a comparison between a group that received an intervention and a group that did not. This was

simple to do regarding the ELS policy, where the control group was made up of the schools not involved in the ELS initiative, but could be compared to similar schools that did receive ELS funding, controlling for covariates. This, however, was not as simple for my LSLD analyses, since the treatment group was determined by schools being located within New South Wales. Since every state and territory has its own education policies and associated education departments, I would be unable to attribute changes in outcome variables to the LSLD policy if I simply designated schools outside of New South Wales as being the control group (i.e., any other state or territory specific education policy changes may have influenced the outcome variables). In order to address this, I adopted the same method used by Angrist and Krueger (1999) – I identified a comparable group, all else equal, which experienced no material change to the phenomenon of interest. As my analysis is regarding the impact of education policy, I needed to designate a control group consisting of school leaders that did not experience any significant changes to state or territory specific education policy. Upon review of each state and territory's education policy documentation between 2011 to 2016, I determined schools located within South Australia would be an appropriate control group, due to SA not implementing any state specific education reform during the period of analysis (South Australia Department of Education, 2019), and also having an adequate number of participants for each time point. Therefore, in order to analyse the impact of LSLD on school leader outcomes, I designated schools located within New South Wales as the treatment group, and schools located within South Australia as the control group.

Controlling for Covariates. Due to the natural experiment design of this study, school leaders were not evenly be represented with regards to demographic and situational information, nor randomised. If these discrepancies are not considered, changes in outcome variables may be inaccurately tied to the policy changes rather than being due to the influence

of demographic or situational data. I therefore controlled for the following variables to address this issue:

Socio-Economic Indexes of Areas (SEIFA). The SEIFA (commonly known as socio-economic status) is a measure developed by the Australian Bureau of Statistics (ABS; Australian Bureau of Statistics, 2019). The measure attributes a rank to areas within Australia (1 – 10, 1 being the lowest) reflecting its relative socio-economic advantage and disadvantage. The ranking is based on four indexes also designed by the ABS; The Index of Relative Socio-Economic Disadvantage; The Index of Relative Socio-Economic Advantage and Disadvantage; The Index of Education and Occupation; and The Index of Economic Resources. The indexes are drawn from the five-yearly national Census.

School Type. The categorisation of the school in which the school leader worked, either being Primary (Kindergarten to Year 6), Secondary (Year 7 to Year 12), or Combined (Kindergarten to Year 12).

Locality. The designation by the ABS as to whether the school leader's school is located within a Major City, Outer Regional, Remote, or Very Remote area.

Gender. Whether the school leader was male or female.

State/Territory. In what Australian state or territory the school was located. This was only controlled for with the ELS analyses (LSLD analyses compared the New South Wales state with the South Australia state – justified above in the "Control Group" section).

Participant ID. A unique identifier for each participant. This is to account for historic responses if a participant has completed the survey more than once. This was included as a fixed effect factor as part of the analyses to account for school leaders that may have changed schools during the period of analysis.

Due to a lack of policy documentation associated with Catholic and independent schools (i.e., they had the freedom and implemented the education policies differently to the

government education departments), such schools were not included in my analyses. Further, schools involved in the ELS initiative simultaneously with LSLD were also excluded from the LSLD policy analyses.

Time-varying Qualifications. Another issue common to longitudinal quasi-experimental designs is accounting for when a participant's situation changes that leads to them either no longer qualifying to be included in the treatment or control group, or now qualifying for the other group to that they were initially designated (Lee, 2016). For example, if I was using a panel data approach looking at the impact of LSLD on school leaders, and a number of school leaders changed employment to a different state or territory during the period of analysis, these participants' data would confound my results since some participants would still be classified as being affected by LSLD per the analysis (treatment group), yet in reality they no longer were within New South Wales (control or excluded). To address this issue I converted the dataset's cases from being based on participant ID, to school ACARA ID (i.e., a unique identifier assigned to every school within Australia). This converted all cases to being time-constant (i.e., schools are unable to change state or territory). This process, however, led to missing data for multiple time points (in addition to the already missing data from school leaders who did not complete the survey for every year). I therefore adopted a repeated cross-sections approach to my analyses, which relied on comparing the difference in the average score of all relevant participants per time point, rather than comparing the difference in scores associated with the same participants per time point (Lee, 2016). This prevented the need to only include participants that remained employed at the same school and that had completed the survey every year (very few would meet these qualifications), or conduct data imputation for the missing data.

Analysis – Difference-in-Differences

A common issue associated with quasi-experimental designs is that the allocated treatment and control groups have significant differences in outcome variable levels prior to the treatment effect. As such, conducting between group t-tests in these designs is a poor approach to determine the impact of outcome variables. The econometric difference-in-differences (DID) method, however, measures the difference between the before-after treatment period differences of the "treatment" and "control" group. This method therefore prevents prior differences in outcome variables between the treatment and control group biasing the results (Lee, 2016). I therefore applied a difference-in-differences methodology to my policy analyses (later referred to as Overall DID). Further, to determine where the impact on the school leader outcomes was immediate versus gradual, I also conducted difference-in-difference analyses between the year prior, and the year of the policy implementation (immediate effect).

Retrospective Cross-Section Confirmation. In instances where a treatment effect is expected to be temporary, using retrospective cross-section confirmation allows one to 'double check' the impact of the treatment (i.e., provide more support for the analysis results; Lee, 2016). This process involves conducting two difference-in-differences analyses, one comparing the pre-treatment period with the treatment period, the other comparing the treatment period with the post treatment period (prospective). This method is only relevant to the ELS policy, as it was abruptly abolished.

Results

Hypothesis 1. My results regarding both the ELS and LSLD policy analyses support Hypothesis 1 that policy interventions aimed at giving school leaders greater controlled autonomy increased their perceptions of the autonomy they have in their job. Please note, the estimates in the table reflect the standard deviation difference in results when comparing

those who experienced the policy with those that did not. For example, school leaders which experienced the ELS reported global autonomy levels .097 of a standard deviation higher than those who did not experience the ELS. With regards to the ELS, the overall difference-in-differences analysis indicated that the ELS significantly increased reported school leader global autonomy (see Table 5.1).

Further, both the prospective and retrospective analyses too yielded significant results, indicating that the significant increases in global autonomy were limited to when the ELS was active. Finally, the ELS coincided with an increase school leader global autonomy within the year it was implemented. The majority of all the difference-in-differences analyses were also significant when considering different facets of autonomy, with only the retrospective analyses not being significant for Managing Staff, Managing Resources, and Working with the Community. There was no immediate change evident regarding the managing resources variable (see Table 5.1).

Table 5.1
ELS Autonomy – Summarised Difference-in-Differences Analyses Results

Autonomy	Analysis	Estimate	Std. Error	*t*-value	*p*-value
Global	Overall DID	.097	.031	3.149	**.002**
	Prospective	.149	.046	3.208	**.001**
	Retrospective	-.070	.036	-1.965	**.049**
	Immediate effect	.158	.006	2.690	**.007**
Decision Making	Overall DID	.119	.042	2.866	**.004**
	Prospective	.175	.061	2.851	**.004**
	Retrospective	-.102	.048	-2.105	**.035**
	Immediate effect	.160	.077	2.093	**.037**
Managing Staff	Overall DID	.139	.046	3.012	**.003**
	Prospective	.202	.070	2.899	**.004**
	Retrospective	-.100	.054	-1.841	.066
	Immediate effect	.262	.084	3.128	**.002**
Managing Resources	Overall DID	.098	.039	2.525	**.012**
	Prospective	.137	.059	2.315	**.021**
	Retrospective	-.074	.046	-1.614	.107
	Immediate effect	.141	.075	1.877	.061
Working with the Community	Overall DID	.081	.035	2.310	**.021**
	Prospective	.146	.052	2.794	**.005**
	Retrospective	-.049	.041	-1.206	.228
	Immediate effect	.128	.064	2.016	**.044**

Note. Results of the full models can be found in Appendix 4. Overall = treated versus not treated difference in differences analysis. Prospective = Prospective difference in differences analysis. Retrospective = Retrospective difference in differences analysis. Immediate effect = difference in difference analysis comparing the year directly before with the year of the policy implementation. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant *p* values (below .05) are in bold.

The LSLD appears to have affected school leader autonomy similarly to that of the ELS. Global autonomy significantly increased as a result of the LSLD, in addition to an immediate effect being evident the year of the LSLD implementation (see Table 5.2). Although all overall difference-in-differences results were significant associated with each autonomy facet, the LSLD only resulted in an immediate effect on managing staff upon its implementation. This makes sense considering the progressive implementation of the LSLD,

when compared to the mostly immediate implementation of the ELS (i.e., the changes associated with LSLD were predominately gradual in nature).

Table 5.2
LSLD Autonomy – Summarised Difference-in-Differences Analyses Results

Autonomy	Analysis	Estimate	Std. Error	*t*-value	*p*-value
Global	Overall DID	.231	.074	3.098	**.002**
	Immediate effect	.210	.102	2.056	**.042**
Decision Making	Overall DID	.302	.102	2.958	**.003**
	Immediate effect	.216	.135	1.599	.112
Managing Staff	Overall DID	.386	.117	3.306	**.001**
	Immediate effect	.456	.150	3.046	**.003**
Managing Resources	Overall DID	.198	.092	2.161	**.031**
	Immediate effect	.185	.129	1.429	.155
Working with the Community	Overall DID	.172	.084	2.042	**.041**
	Immediate effect	.120	.107	1.125	.262

Note. Results of the full models can be found in Appendix 4. Overall = treated versus not treated difference in differences analysis. Immediate effect = difference in difference analysis comparing the year directly before with the year of the policy implementation. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant *p* values (below .05) are in bold.

Hypothesis 2. My results support Hypothesis 2 that neither of the policies coincided with changes in school leader burnout, however both lead to increases in reported job satisfaction. The ELS appears to have had no impact of reported school leader burnout, with none of the difference-in-differences analyses results being significant (see Table 5.3). Yet, the overall and retrospective difference-in-differences analyses indicated that the ELS significantly increased reported school leader job satisfaction. This support, however, is not as strong as the support for Hypothesis 1, as neither the prospective nor immediate effect difference-in-differences analyses yielded a significant result.

Table 5.3
ELS Impact on Burnout and Job Satisfaction – Summarised Results

Outcome	Analysis	Estimate	Std. Error	*t*-value	*p*-value
Burnout	Overall DID	.013	.042	.304	.761
	Prospective	-.041	.061	-.676	.499
	Retrospective	-.041	.049	-.842	.400
	Immediate effect	-.082	.076	-1.078	.281
Job Satisfaction	Overall DID	.069	.034	2.015	**.044**
	Prospective	.038	.049	.780	.435
	Retrospective	-.095	.040	-2.350	**.019**
	Immediate effect	.109	.060	1.823	.069

Note. Results of the full models can be found in Appendix 4. Overall = treated versus not treated difference in differences analysis. Prospective = Prospective difference in differences analysis. Retrospective = Retrospective difference in differences analysis. Immediate effect = difference in difference analysis comparing the year directly before with the year of the policy implementation. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

The LSLD also had no significant impact on reported school leader burnout with reference to the overall and immediate effect difference-in-differences analyses results (see Table 5.4). The LSLD appears to have, however, significantly increase reported school leader job satisfaction (estimate .207, *p* value = .008) yet the impact was gradual rather than immediate.

Table 5.4
LSLD Impact on Burnout and Job Satisfaction – Summarised Results

Outcome	Analysis	Estimate	Std. Error	*t*-value	*p*-value
Burnout	Overall DID	-.054	.100	-.546	.585
	Immediate effect	-.119	.123	-.962	.338
Job Satisfaction	Overall DID	.207	.077	2.677	**.008**
	Immediate effect	.190	.101	1.885	.062

Note. Results of the full models can be found in Appendix 4. Overall = treated versus not treated difference in differences analysis. Immediate effect = difference in difference analysis comparing the year directly before with the year of the policy implementation. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant *p* values (below .05) are in bold.

Research Question 1. My results indicate that neither the ELS, nor the LSLD coincided with significant changes in school leader job demands and resources, with just a few exceptions. First, only school leader cognitive demands appear to have been impacted by

the ELS, with a significant decrease in reported school leader cognitive demands immediately upon the ELS implementation (see Table 5.5). The other difference-in-differences analyses, however were not significant, thus implying the increase in cognitive demands was a temporary response to the introduction of the ELS.

Table 5.5
ELS Job Demands – Summarised Difference-in-Differences Analyses Results

Demands	Analysis	Estimate	Std. Error	*t*-value	*p*-value
Global	Overall DID	.003	.014	.222	.824
	Prospective	-.029	.020	-1.395	.163
	Retrospective	-.015	.016	-.906	.365
	Immediate effect	-.043	.026	-1.655	.098
Quantitative Demands	Overall DID	.020	.030	.675	.500
	Prospective	-.013	.043	-.290	.771
	Retrospective	-.031	.035	-.871	.384
	Immediate effect	.006	.052	.120	.904
Cognitive Demands	Overall DID	.008	.027	.301	.764
	Prospective	-.063	.040	-1.592	.112
	Retrospective	-.034	.031	-1.091	.275
	Immediate effect	-.103	.051	-2.000	**.046**
Emotional Demands	Overall DID	.012	.031	.367	.713
	Prospective	-.056	.046	-1.210	.226
	Retrospective	-.036	.037	-.973	.330
	Immediate effect	-.080	.059	-1.351	.177
Demand for Hiding Emotions	Overall DID	-.008	.022	-.365	.715
	Prospective	-.052	.034	-1.558	.119
	Retrospective	-.012	.026	-.449	.653
	Immediate effect	-.077	.040	-1.926	.054

Note. Results of the full models can be found in Appendix 4. Overall = treated versus not treated difference in differences analysis. Prospective = Prospective difference in differences analysis. Retrospective = Retrospective difference in differences analysis. Immediate effect = difference in difference analysis comparing the year directly before with the year of the policy implementation. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant *p* values (below .05) are in bold.

Regarding job resources, the prospective and immediate effect difference-in-differences analyses yielded significant results for global resources (see Table 5.6). That said, this is likely due to the significant impact the ELS had on global autonomy – one of the four

component variables of global resources. The only other significant change in job resources was with regards to a significant increase in social support from colleagues, with both the overall and prospective analyses yielding significant results (estimate .097, *p* value = .008 and estimate .113, *p* value = .041). As such, the significant increase in global resources does not reflect a universal increase in all school leader resources.

Table 5.6
ELS Job Resources – Summarised Difference-in-Differences Analyses Results

Resources	Analysis	Estimate	Std. Error	*t*-value	*p*-value
Global	Overall DID	.026	.014	1.920	.055
	Prospective	.046	.020	2.308	**.021**
	Retrospective	-.018	.016	-1.097	.273
	Immediate effect	.054	.025	2.169	**.030**
Autonomy	Overall DID	.097	.031	3.149	**.002**
	Prospective	.149	.046	3.208	**.001**
	Retrospective	-.070	.036	-1.965	**.049**
	Immediate effect	.158	.006	2.690	**.007**
Possibilities for Development	Overall DID	.008	.022	.375	.708
	Prospective	.037	.032	1.144	.253
	Retrospective	.000	.026	.001	.999
	Immediate effect	.047	.039	1.206	.228
Social Support from Colleagues	Overall DID	.097	.036	2.661	**.008**
	Prospective	.113	.055	2.045	**.041**
	Retrospective	-.075	.042	-1.782	.075
	Immediate effect	.126	.071	1.790	.074
Self-Efficacy	Overall DID	-.002	.031	-.076	.939
	Prospective	.008	.047	.171	.865
	Retrospective	.005	.037	.140	.889
	Immediate effect	.013	.055	.238	.812

Note. Results of the full models can be found in Appendix 4. Overall = treated versus not treated difference in differences analysis. Prospective = Prospective difference in differences analysis. Retrospective = Retrospective difference in differences analysis. Immediate effect = difference in difference analysis comparing the year directly before with the year of the policy implementation. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant *p* values (below .05) are in bold.

The LSLD appears also not to have had any impact on reported school leader job demands, with none of the difference-in-differences analyses yielding significant results (see Table 5.7).

Table 5.7
LSLD Job Demands – Summarised Difference-in-Differences Analyses Results

Demands	Analysis	Estimate	Std. Error	t-value	p-value
Global	Overall DID	-.003	.032	-.087	.930
	Immediate effect	-.009	.040	-.238	.812
Quantitative Demands	Overall DID	.025	.072	.344	.731
	Immediate effect	.068	.088	.771	.442
Cognitive Demands	Overall DID	-.021	.063	-.335	.738
	Immediate effect	-.031	.083	-.377	.707
Emotional Demands	Overall DID	.004	.073	.054	.957
	Immediate effect	-.013	.085	-.142	.887
Demand for Hiding Emotions	Overall DID	-.045	.054	-.836	.403
	Immediate effect	-.062	.059	-1.065	.289

Note. Results of the full models can be found in Appendix 4. Overall = treated versus not treated difference in differences analysis. Immediate effect = difference in difference analysis comparing the year directly before with the year of the policy implementation. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

Besides increasing global autonomy, the LSLD also appears to have had no significant impact on reported school leader job resources (see Table 5.8).

Table 5.8
LSLD Job Resources – Summarised Difference-in-Differences Analyses Results

Resources	Analysis	Estimate	Std. Error	t-value	p-value
Global	Overall DID	.070	.032	2.163	**.031**
	Immediate effect	.039	.040	.974	.332
Autonomy	Overall DID	.231	.074	3.098	**.002**
	Immediate effect	.210	.102	2.056	**.042**
Possibilities for Development	Overall DID	.087	.052	1.669	.095
	Immediate effect	.045	.062	.733	.465
Social Support from Colleagues	Overall DID	-.030	.085	-.350	.726
	Immediate effect	-.041	.103	-.392	.696
Self-Efficacy	Overall DID	.033	.076	.436	.663
	Immediate effect	-.056	.095	-.596	.553

Note. Results of the full models can be found in Appendix 4. Overall = treated versus not treated difference in differences analysis. Immediate effect = difference in difference analysis comparing the year directly before with the year of the policy implementation. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

Discussion

The aim of this study was to determine whether the current international education reform agenda focused on increasing controlled school leader autonomy leads to actual increases in school leader autonomy. Further, with this study I aimed to determine the role this type of education reform plays in the current Australian school leader high burnout high job satisfaction phenomenon, and how it impacts the school leader role in general. With such education forms being implemented worldwide, in addition to the important role school leaders play in society, the findings of this study are of international interest and importance.

The notion of "controlled autonomy" - placing more responsibility onto school leaders via decentralisation yet still being framed within standardised accountability metrics and national guidelines – is being embraced by education industries globally (Weiner & Woulfin, 2017). The very nature of these education reforms, however, seems oxymoronic, and whether such policies lead to real increases to school leader autonomy is questionable.

Further, education reform focussed on controlled autonomy promotion has been blamed for the significantly high levels of school leader job demands and burnout (Australian Education Union, 2019).

This notion of peer pressure citied from Barker (2002) is arguably present within the education reforms I analysed. The numerous ‘tools’ and ‘guidelines’ developed as part of the ELS and LSLD to assist school leaders with their new responsibilities would likely act as a method of controlling school leader behaviour without the use of explicit rules. Although school leaders were/are not required to use the provided tools and guidelines to conduct their responsibilities, an underlying standard approach has been established that is public knowledge to the department, school leaders, teachers, and parents. As such, it is likely school leaders felt pressured to adhere to the guidelines, and use the tools provided by the education departments as such methods are implied to be best practice. Yet, school leaders likely were more willing to conduct their responsibilities in such a manner, as they believe they have chosen this with their own volition.

The results from my research, however, support the efficacy of a controlled autonomy centric education reform strategy, where the two analysed education reforms focused on increasing school leader-controlled autonomy did coincide with significant increases in reported school leader autonomy. That being said, whether this increased school leader autonomy led to better student outcomes, the fundamental aim of education policy makers, was not explored as part of my study. As such, the impact of controlled autonomy on student outcomes still need to be explored as a viable method for bettering student and staff outcomes collectively.

My findings appear to refute the association between this education reform strategy and increases in reported school leader job demands and burnout (Australian Education

Union, 2019), where my analyses indicate neither the ELS nor the LSLD led to material changes in these outcomes.

Policy Implications

Policy makers should be relieved to know the recent push toward greater school leader controlled autonomy is indeed leading to greater school leader autonomy, and does not appear to be responsible for the progressive increases in school leader demands and high levels of reported burnout of which it is being accused. Yet with a lack of impact on school leader demands, resources, and burnout, the ability these policies have on allowing school leaders to meet the specific needs of their students is in doubt. For instance, both policies analysed distinctly provided funding and training opportunities for school leaders, yet neither policy changed the reported levels of possibilities for development amongst school leaders. Further, with an ability to meet individual students' needs, one would assume a decline in emotional demands, yet this too did not occur. With the entire emphasis of the controlled autonomy reforms being on the role of school leaders, should one not expect a greater impact on their reported job demands and resources? Policy makers need to consider whether the substantial investment associated with such reforms truly is the best allocation of their finite resources.

Limitations and Areas for Further Research

This study focused on Australian education reforms and school leaders, it may be possible the results only pertain to the Australian context. As such, these results may not accurately reflect the impact of controlled autonomy education reform on school leaders within different countries. The outcomes of interest were measured using self-report measures. This was appropriate because most of the outcomes of interest were related to the subjective experiences of principals. Nevertheless, it is difficult to account for issues like participant malingering or social desirability.

As to be expected, I recommend analyses of other controlled autonomy focussed education reform, ideally outside of Australia, to ascertain a better understanding of such policies, and ideally reconfirm/validate the findings of Study 2. Other education reform with different foci would also be quite important to analyse to inform policy makers to design reform to tackle the current high levels of school leader burnout and attrition.

Finally, policy makers should compare the impact of alternative strategies to address specific student and school needs, with that of controlled autonomy education reform, to ensure the most appropriate strategies are adopted. With such research, so too should the impact on school leaders' outcomes, similar if not the same to those measured in the current study, be analysed. This will ensure that the most appropriate education policies to meet the needs of both school leaders and their students are being adopted.

Conclusion

The current international education reform agenda does appear to be successfully increasing the autonomy of school leaders. Further, this agenda does not appear to be contributing to the high burnout issue, but rather increase the extent of job satisfaction reported by school leaders. With that said, the minimal impact such policies had on reported school leader job demands and resources calls into question the effectiveness of these policies in general, especially considering the nature of the reform is focussed around the school leader role itself. Research into the efficacy of these reforms on increasing student outcomes is thus needed. Policy makers should weigh up the effectiveness of alternative policy approaches to ensure they are best using their resources to support their school staff and students.

Chapter 6: Study 3 – The Role of Passion on School Leader Burnout and Job Satisfaction

This chapter is written in the form of a journal article that is currently under revise and resubmit for a highly ranked educational psychology journal. As such, there may be some repetition regarding the literature review around the concept of passion and its relevance within the workplace.

With this current study I explored the role the high levels of school leader work passion (Riley, 2015-2019) play in the high burnout/high job satisfaction phenomenon facing Australian school leaders. I analysed how work passion, and how it is manifested (harmoniously or obsessively; Vallerand et al., 2003) impacted school leader burnout and job satisfaction. My findings indicate that school leader passion indeed play a role in the current high burnout/high job satisfaction phenomenon.

Abstract

School leaders are, on average, reporting high burnout *and* high job satisfaction. We aimed to resolve this conundrum using a longitudinal sample of 2,702 school leaders. Extending the Dualistic Model of Passion, we examined the relationships between general (GP), harmonious (HP), and obsessive (OP) passion, burnout, and job satisfaction. GP predicted increases in job satisfaction and HP predicted declines in burnout. OP was moderated by GP such that when GP was high, OP predicted increases in burnout and declines in job satisfaction. High GP promoted job satisfaction but not when manifested in its obsessive form. School leaders' work passion may help them avoid burnout and maintain high job satisfaction, however, such passion must be manifested harmoniously.

Keywords. *Passion, school leaders, school principals, burnout, job satisfaction.*

School leaders are vital to the life of our schools and communities. A good school leader can foster student motivation and lift academic success (Riley, 2013; Leithwood & Louis, 2012; Day, 2011). Engaged leaders help create school climates where both teachers and students flourish (Arens & Morin, 2016; Klusmann, Richter, & Lüdtke, 2016; Koh, Steers, & Terborg, 1995). However, schools are increasingly facing a crisis as aging school leaders retire early due to burnout, with suitable candidates reluctant to take their place (Riley, 2019).

With such a vital role to play, reports of workplace burnout and unsustainable attrition among principals are concerning (Darmody & Smyth, 2016; Dewa et al., 2009; Grissom, Loeb, Mitani, 2015; Riley, 2013). School leaders report disproportionately high levels of burnout when compared with the general working population but this does not appear to negatively impact their job satisfaction (Riley, 2019).

School leaders report greater job satisfaction compared with the general population (Riley, 2019). A yet to be tested explanation of this high-burnout-high-job-satisfaction conundrum is the passion school leaders express about their roles (Gurr, Drysdale, & Mulford, 2007). Riley (2019) found that almost 90% of principals reported being passionate about their work. In contrast, Gallup (2013) found only 13% of the general working population are engaged with their work. Deloitte found that only 11% of typical employees were passionate about their work (Hagel, Brown, & Samoylova, 2013). Yet not all passion is created equal. Whether school leaders experience burnout or remain satisfied with their job may depend on how their passion is manifested. Using the Vallerand et al, (2003) Dualistic Model of Passion as a theoretical basis, we test the role of passion, and its harmonious or obsessive manifestations, in explaining changes in burnout and job satisfaction over two years in a sample of over 2000 Australian school leaders.

Theoretical Framework of Passion

Vallerand et al. (2003) argue that individuals are passionate about activities they enjoy, find important and meaningful, and in which they invest considerable time and energy. Passion can manifest as either harmonious (HP) or obsessive (OP), dependent on how they integrate the activity into their lives.

HP individuals freely choose to participate in the activity and authentically endorse their participation; but can reduce their investment when required. They integrate the activity well in their lives, so it does not infect every aspect of their lives (e.g., relationships with friends and family). OP individuals are contingently motivated to pursue the activity to gain valued outcomes, such as social acceptance or self-esteem. This manifestation of passion has destructive effects on the individual, on how they perform in the activity itself, and on other life domains.

Vallerand et al.'s (2003) Dualistic Model of Passion (Passion Scale) is well supported in the workplace (Bushardt et al., 2016), particularly in the area of employee burnout and job satisfaction, but our study is apparently the first research focused on school leaders. Extant research also rarely uses longitudinal samples that can help disentangle temporal ordering among passion and its supposed outcomes.

Passion: Relations with Burnout and Job Satisfaction

Freudenberger (1975) argued that you must first be on fire before you can burnout. Freudenberger's pioneering research argued that burnout was an affliction of the passionate worker who would disregard their own health and wellbeing, substituting all aspects of their lives in service to their jobs; prioritising their careers over everything else. Initially healthy, positive, and motivated workers would become irritable, antisocial, frustrated, and condescending toward their co-workers and clients. Overtime they would become more exhausted and cynical, and their work performance would decline (Freudenberger, 1975).

While these later stages of burnout are important, emotional exhaustion is still seen as the initial and most critical component (Malach-Pines & Carlson, 2005).

There is a paucity of research and conflicting results on the relationship between burnout and passion. Consistent with theory and a priori predictions, studies have found that burnout and negative affect are negatively related to HP and positively related to OP (Birkeland & Buch, 2015; Trépanier et al., 2014), but other studies have found these relations to be non-significant (e.g., Fernet et al., 2014).

Job satisfaction too has been considered an important employee outcomes. Job satisfaction research has a long history, typically defined as a self-reported, evaluative judgement of either particular and/or holistic work attitudes (Kornhauser & Sharp, 1932; Judge, et al., 2017). Job satisfaction is consistently found to be positive related to HP, whereas it typically is not significantly correlated with OP (Houlfort et al., 2014; Moe, 2016; Burke et al., 2015; Vallerand et al., 2010)

Measuring Passion in the Workplace

HP and OP measures in the Passion Scale have been shown to be psychometrically sound and invariant over time, gender, age, and activities (Marsh et al., 2013). Historically, the Passion Scale has included items on general passion (GP; e.g., “the activity is a passion for me”) that have been used to exclude individuals deemed not to be sufficiently passionate enough to manifest either OP or HP (e.g., Vallerand et al., 2003). This exclusion strategy is problematic. It is based on an implicit model of an interaction of GP (dichotomized in relation to an apparently arbitrary threshold along the GP continuum) with HP and OP. Dichotomizing continuous scores is problematic because it attenuates relationships with other variables. The exclusion strategy is also based on the untested assumption that HP and OP are unrelated to outcomes when GP is low. This strategy also excludes from analysis a number of participants is many settings (e.g., workplaces where GP are not high), and may explain in

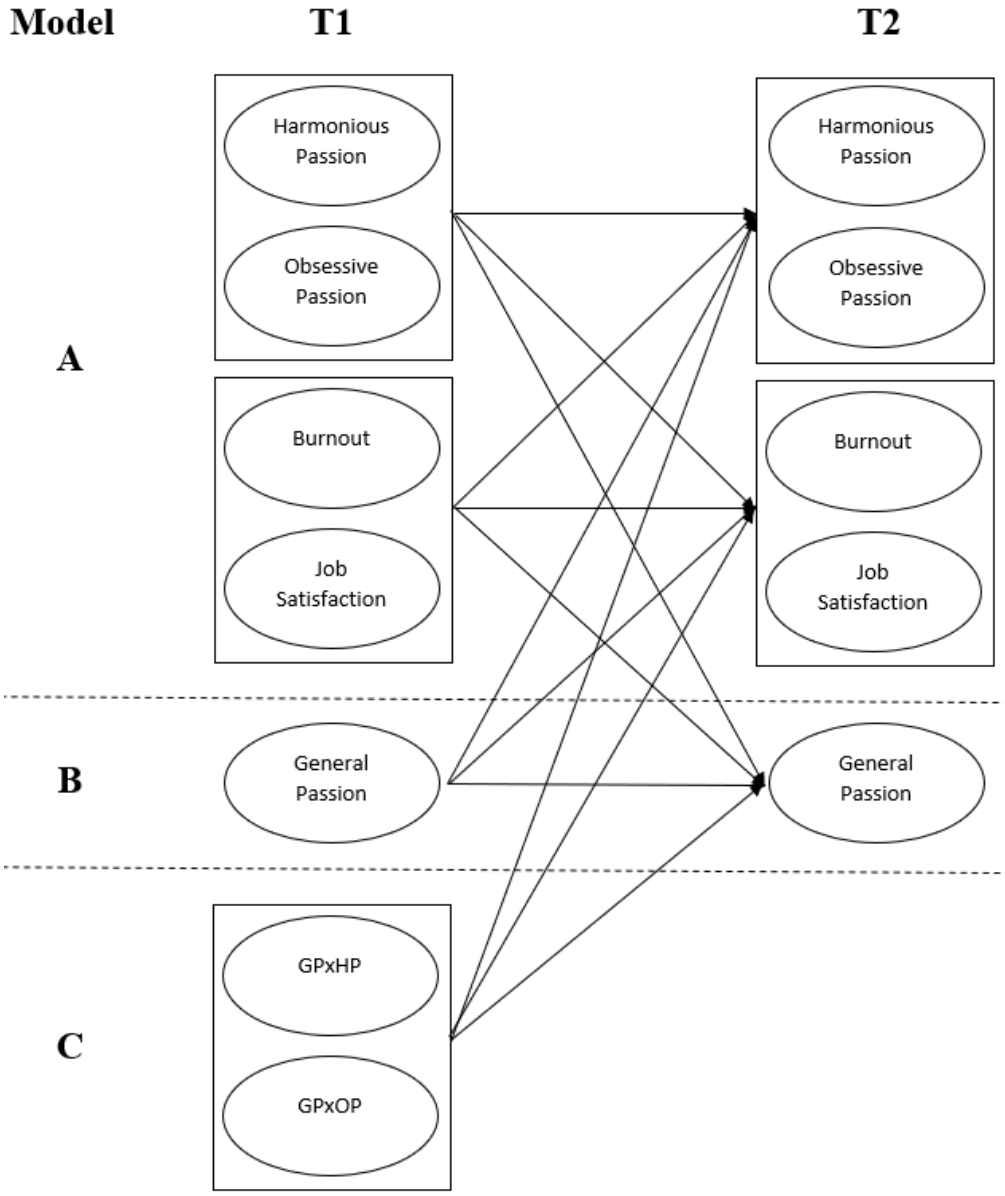
part the inconsistent findings of relations between HP, OP, job satisfaction and burnout (few studies report on whether participants have been participants based on this metric). This methodology also does not allow analysis of the influence of HP and OP beyond the cut-off threshold. In contrast to this approach, we use GP as a substantive variable, thereby including all participants, and allowing us to explicitly test the implicit interaction between GP and harmonious and obsessive passion.

Passion Scale studies are typically cross-sectional, precluding tests of longitudinal relations between GP, OP, HP and outcomes such of burnout and job satisfaction. Implicit in these cross-sectional models are the assumptions that GP (as an exclusion variable) precedes OP and HP, and that GP, OP, and HP (the predictor variables) precede outcome variables. In the present investigation we evaluate these implicit assumptions about causal ordering (e.g., job satisfaction and passion might be reciprocally related such that changes in one lead to changes in the other) with longitudinal panel models.

The Present Investigation

We have three key research aims: test the impact of prior HP and OP on burnout and job satisfaction for school leaders; extend the Dualistic Model of Passion by testing the implicit interactions between HP and OP with GP; and exploring longitudinal path models of the causal ordering of GP, OP, HP, burnout, and job satisfaction. A simplified version of our final model can be found in Figure 6.1, model C. We contrast this model with the two other models that exclude GP from analysis, or include GP but ignore the interaction between GP and HP or OP (Models A and B respectively).

Figure 6.1
Workplace Passion Longitudinal Models



Note: T1 = Time One, T2 = Time Two, GPxOP = interaction term of general and obsessive passion, GPxHP = interaction term of general and harmonious passion.

We apply these models to longitudinal data to test the following hypotheses and research questions:

Hypothesis 1. HP predicts positive changes in job satisfaction and negative changes in burnout.

Hypothesis 2. OP predicts negative changes in job satisfaction and positive changes in burnout.

Hypothesis 3. Greater GP magnifies the beneficial effects of HP and the harmful effects of OP on both job satisfaction and burnout.

Research Question 1. As GP is a new addition to the Passion Scale, we will explore how GP directly influences burnout, and job satisfaction.

Research Question 2. We also pose as a research question whether there are reciprocal effects among these variables such that, for example, OP or HP predicts changes in GP, or whether burnout or job satisfaction predict changes in HP, OP or GP. As mentioned before, because the Passion Scale is typically based on cross-sectional data, the causal ordering among these variables has not been formally tested.

Methodology

Sample

Participants were a large (N = 2,702) representative sample of Australian school leaders (70.3% principals, 29.7% deputy principals and other school leaders) surveyed in 2015 and 2016 (44.4% male; mean age = 57.61,SD = 7.29). 64% of leaders worked in primary schools, 22% in secondary schools, and 13.9% in Kindergarten -Year 12 schools. Average tenure in the current position was 5.2 years (SD = 4.32) and 12.5 years in leadership roles generally (SD = 7.27). Data on these school leaders were collected as part of a larger research project on principal health and wellbeing (Riley, 2019), where principals filled in a survey annually. Only participants that completed the survey in both T1 and T2 were included. As such, 94% of T1 participants were included (2,863 participants completed the survey in T1), and 89% of T2 participants (3,034 participants completed the survey in T2). Missing data were assumed to be missing at random and handled using the full information maximum likelihood approach (Enders, 2010).

Measures

GP, HP, and OP were each based on responses to 4, 7 and 7 items respectively from the Passion Scale (Vallerand et al., 2003) that were amended slightly to reflect passion for work (e.g., replacing the word "activity" with "work'). Burnout and job satisfaction measures were from the Copenhagen Psychosocial Questionnaire that has been validated with school principals (see Dicke et al., 2018). Coefficient alpha estimates of reliability for the five factors over two occasions varied from .783 to .919 (Md = .746; see Appendix 6 – Chapter 6 for wording of items and reliability estimates).

Statistical Analyses

To represent the latent passion factors and the latent job satisfaction and burnout factors we used Set-Exploratory Structural Equation Models (set-ESEM) shown to be appropriate for the Passion scale (Marsh et al., 2014). Extending the Marsh et al. study, we evaluated factor structure based on five latent factors (GP, OP, HP, job satisfaction, and burnout). Consistently with Marsh et al., we found that the set-ESEM solution provided a better fit than did traditional confirmatory factors analyses (CFAs). Furthermore, tests of invariance showed that the set-ESEM factor structure (factor loadings and intercepts) was invariant over time, providing a strong basis for evaluating relations longitudinally (see Appendix 6 – Chapter 6 for a more detailed rationale for the models and the results based on data used here).

Results

Hypothesis 1. Supporting hypothesis 1, in Model A initial HP (at Time 1, T1) predicted a significant increase in job satisfaction over time and a significant decline in burnout (see Table 6.1). However, when GP was introduced in Model B, T1HP still predicted decreased burnout but was no longer a significant predictor of changes in job satisfaction.

Table 6.1
***Results from Set-SEM Cross-lag Model* (see Figure 6.1 for Models)**

T2 ⇒	GP			OP			HP			BO			JS		
T1 ⇓	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
GP	-	.58*	.54*	-	.02	.06	-	.06	.05	-	.02	.05	-	.08*	.07*
	-	(.04)	(.04)	-	(.03)	(.03)	-	(.03)	(.03)	-	(.03)	(.03)	-	(.03)	(.03)
OP	-	.11*	.19*	.73*	.74*	.70*	-.01	-.03	-.00	.02	.02	-.01	.01	-.04	-.02
	-	(.03)	(.04)	(.02)	(.02)	(.03)	(.02)	(.03)	(.03)	(.02)	(.03)	(.03)	(.02)	(.03)	(.03)
HP	-	.04	.06	-.04	-.04	-.05	.61*	.57*	.57*	-.08*	-.08*	-.09*	.10*	.06	.06
	-	(.03)	(.04)	(.04)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.04)	(.03)	(.04)
GPxOP	-	-	-.14*	-	-	.07*	-	-	-.05*	-	-	.07*	-	-	-.05*
	-	-	(.03)	-	-	(.02)	-	-	(.02)	-	-	(.02)	-	-	(.02)
GPxHP	-	-	-.03	-	-	.07*	-	-	.00	-	-	.04	-	-	.02
	-	-	(.03)	-	-	(.02)	-	-	(.02)	-	-	(.02)	-	-	(.02)
BO	-	.01	.01	.03	.02	.02	-.07*	-.09*	-.10*	.65*	.65*	.65*	-.02	-.03	-.03
	-	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)
JS	-	.11*	.11*	.05	.04	.03	.07*	.08*	.08*	.03	.03	.03	.59*	.56*	.57*
	-	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.03)	(.04)	(.04)	(.04)

Note: A,B,C = Model A, Model B, and Model C respectively; BO, JS = Burnout and Job Satisfaction respectively; * = $p < 0.05$; Standard errors in brackets.

Hypothesis 2. In Models A and B, T1OP was not a significant predictor of change in either job satisfaction or burnout. However, this relationship was dependent on GP (see Hypothesis 3 below).

Hypothesis 3. In support of hypothesis 3, T1GP magnified the negative influence of OP on change in job satisfaction and change in burnout. Thus, there was support for the predicted effect of OP (consistent with Hypothesis 2) when levels of T1GP were high. Although HP remained a significant negative predictor of change in burnout, T1GP did not moderate the influence of T1HP on either subsequent job satisfaction or burnout.

Research Question 1. In Models B and C that included GP, T1GP did significantly predicted increases in job satisfaction, but had no effect on changes in burnout.

Research Question 2. It is plausible to conclude that the Dualistic Model of Passion posits GP (as an exclusion variable) is a precursor to OP and HP, and that effects flow from OP and HP (the independent variables) to job satisfaction and burnout outcomes. Based on our longitudinal path model (Figure 6.1) we tested the implicit assumptions (or, at least, untested relations) that OP and HP do not predicts changes in GP, and that burnout and job satisfaction do not predict changes in HP, OP or GP. Our results show that both job satisfaction and burnout at T1 predicted changes in HP, as well as T1 HP predicted changes in burnout (i.e., HP and burnout are reciprocally related). Job satisfaction and GP were also related. T1 burnout had an effect on T2GP. As shown above T1GP only predicted T2 when OP was high.

Discussion

Our aim was to determine if different manifestations of passion could explain the paradoxical situation where school leaders are, on average, both highly satisfied with their job but also burnout. Based on the Dualistic Model of Passion, we expected particularly HP would be generally protective, and OP would result in higher burnout. Our longitudinal

results suggest that HP is protective against burnout one year later but does not necessarily predict change in job satisfaction. GP was, however, a significant positive predictor of change in job satisfaction. Taken together it appears that GP and its harmonious manifestation are additive and positive in explaining high job satisfaction and low burnout.

However, our results suggest that OP and GP are multiplicative. On its own, OP predicted neither change in job satisfaction nor burnout. Rather, its deleterious effects only emerge when GP was high. School leaders are generally passionate about their job. Indeed, much more passionate than the average worker. Our results suggest that this high passion when coupled with a harmonious manifestation typically leads to high job satisfaction and low burnout. Yet, high GP may be dangerous when manifest obsessively. Consequently, school leaders high job satisfaction may be maintained, while their burnout levels too are elevated from the influence of OP. Thus, we argue that passion manifestation maybe part of the key to understanding the paradoxical situation where the principal profession is characterised by high job satisfaction and high burnout.

A unique feature of our research is our use of the GP scale in Vallerand et al.'s Passion Scale (2003) as a substantive factor in our longitudinal study. We suggest that previous researchers who have used the general scale as a filter variable may be missing a potentially powerful explanatory variable. First, we found GP had direct effects on job satisfaction in its own right. More generally, educational and other social science researchers have long been warned about the dangers of dichotomizing reasonably continuous variables in terms of attenuated and potentially distorted effects so that "dichotomization is rarely defensible and often will yield misleading results" (MacCallum, et al., 2002, p. 19). Second, we found that the deleterious effects of OP depended on the participants reported level of GP. Previous research has used a crude approximation of our interaction by selecting only participants who report some level of passion on the GP scale. However, the implicit

assumption that OP and HP only influence outcomes beyond a particular threshold of GP has several limitations. First, this threshold appears to be chosen arbitrarily, and researchers sometimes use different thresholds without empirical or theoretical rationale. Second, depending on the level of the threshold and the workplace setting, a potentially large number of participants are excluded inappropriately. Third, the crude "interaction" between GP and passion manifestation introduced by using GP as a threshold is not actually tested and is insensitive to dose-response effects we found in this research. These limitations in the use of GP may explain the inconsistent findings of the effect of passion manifestation in the literature. Finally, results of our longitudinal latent path model showed that GP and job satisfaction were reciprocally related, suggesting that each is a cause and an effect of the other.

The Dualistic Model of Passion is theory with important policy-practice implications. Our set-ESEM results replicated the well-defined factor structure underpinning the Passion Scale used in studies of this model. However, results based on our longitudinal path models suggest that the model and the typical cross-sectional data used to test it needs to be extended to more fully evaluate the causal ordering underlying the GP, HP, OP, and a variety of different outcome variables. This was clearly evident with GP that has been a major focus of the present investigation. However, the reciprocal effect between HP and burnout also suggests that the model based on unidirectional effects is too simplistic. In this sense, passion is apparently both a cause and an effect of burnout.

Our research focused on harmonious and obsessive manifestations of passion in school leadership. We did not however, explore why school leaders may manifest passion in a particular way. Future research should consider contextual factors whereby OP is imposed on school leaders. This may include placing unsustainable job demands on employees that are passionate about their work. This can be particularly understood when passion is framed

within a self-determination theory framework (Carbonneau, Vallerand, Fernet, & Guay, 2008). Policy and regulatory requirements of school leadership may result in school leaders who entered their position "on fire" to burnout by imposing extrinsic rather than intrinsic reasons for doing well on the job; essentially cultivating obsessive passion in school leaders. Thus, the effect of educational policy and other contextual factors should be considered in future research. It would also be of interest whether the amount of time spent at work per week, in addition to the length of time spent in the specific position, are relevant to the development of the different passion types.

Strengths and Limitations

This research combined new and evolving statistics (e.g., set-ESEM and latent interactions) with a theoretical innovation of arguing that the effects of passion manifestation depend on the level of GP exhibited by a school leader. Further, our research was based on large (particularly for principal research) longitudinal data. This allowed us to determine temporal precedence between passion and burnout and job satisfaction. Despite these strengths there are some limitations. First, all findings have been based on self-reported data. Second, while our research design can determine temporal precedence, we cannot rule out the influence of third variables; that is our research may still suffer from omitted variable bias.

Conclusion

School leaders play a crucial role in our society. They significantly influence the academic success and wellbeing of our children well beyond graduation. With the increasingly high levels of reported burnout and attrition of our school leaders, policymakers must act to reverse this imminent crisis to ensure our schools, and thus, our society, flourish rather than flounder. Our analysis on the paradox of reported high levels of both burnout and job satisfaction provide insight into how we may tackle this issue. Understanding school leaders are passionate about their work, in addition to the detriments associated with such

passion being manifested obsessively, policy should seek to develop a work environment conducive to promoting harmonious passion. Initiatives that promote work-life balance, a key component of harmonious passion, may well allow school leader passion to manifest harmoniously and thus, act as a buffer against burnout. Conversely, high job demands, greater between school competition, and metrics promoting extrinsic rather than intrinsic outcomes may result in obsessively passionate leaders, furthering increasing the already alarming high levels of burnout and attrition. To ensure our education system is of the highest quality and sustainable, greater focus should be given how school climate end educational policy impact school leaders' complex psychosocial traits such as passion.

Chapter 7: General Discussion and Conclusion

Introduction

Few people would question the importance of Australia's school leaders. They are integral to the motivation, success, and wellbeing of our students and teachers (Brinks & William, 2012; Riley, 2013; Leithwood & Louis, 2012; Day, 2011). Moulding our future leaders, they indirectly influence our economy, our culture, and thus, the holistic development of our society. It is therefore in the best interests of everyone to ensure our school leaders are able to perform to the best of their abilities. Yet, Australia's school leaders are currently facing a crisis; consistently reporting high levels of burnout when compared to the general population (Darmody & Smyth, 2016; Dewa et al., 2009; Grissom, Loeb, Mitani, 2015; Riley, 2013-19). Consequently, concerning levels of attrition and self-harm are becoming evident amongst school leaders across Australia (Riley, 2019).

Regardless of this crisis, Australia school leaders are also reporting far higher levels of job satisfaction than the general population (Riley, 2013-2019). This unusual pairing arguably appears paradoxical; what phenomena could be causing to this? How can we reduce school leader burnout, whilst still maintaining their high job satisfaction?

The issue of high school leader burnout is sadly nothing new, with studies indicating this concern persisting for over a decade (Friedman, 1995). Experts in the area have theorised the high levels of burnout are a result of two key components: the role and responsibilities of school leaders, and the consequences of the Global Education Reform Movement. Yet, the justification behind the high levels of reported school leader job satisfaction within the context of reported high burnout, was yet to be explored.

A phenomenon that is quite unique to school leaders is their significantly greater levels of work passion when compared with the general population (Riley, 2015-19). With an understanding that passion has been found to impact both burnout and job satisfaction

(Birkeland & Buch, 2015; Trépanier et al., 2014, Houlfort et al., 2014; Moe, 2016; Burke et al., 2015; Vallerand et al., 2010), arguably school leader work passion needed to be considered to better understand the current high burnout high job satisfaction phenomenon.

I aimed to gain a greater understanding of the Australian school leader high burnout high job satisfaction phenomenon to provide insight into how we can reduce the high levels of school leader burnout, whilst maintaining their high levels of job satisfaction. To gain a holistic understanding, each one of my studies focussed on a different level of analysis, macro-,meso-, and micro-focussed, as described by Hubert (1979). A macro-focus level of analysis reflects a component impacting a large population; such as on a national or societal level. Study 2 had a macro-focus, analysing the impact of state and federal education reform on Australian school leaders. A meso-focus reflects an aspect of size between the macro and micro levels, and usually is used to tie both together, such as a community or certain demographic. Study 1 had a meso-focus, analysing the typical school leader role itself with regards to their job demands and job resources, and how it impacts reported burnout and job satisfaction. A micro-focus reflects a focus of the individual within a particular social setting. Study 3 had a micro-focus, analysing how personal passion and how it is manifested impacts their reported burnout and job satisfaction.

For Study 1 I developed and tested tailored school leader Job Demands-Resources Models to determine the impact of first order, and higher order, school leader job demands and resources have on job satisfaction and burnout (meso). For Study 2, I analysed the impact the Australian education reforms *Empowering Local Schools Partnership* (ELS) and *Local Schools Local Decisions* (LSLD), both being reflections of the current international focus of promoting education decentralisation and greater school leader autonomy, had on school leader burnout and job satisfaction (macro). Finally, for Study 3 I extended the Dualistic

Model of Passion to better understand the impact of school leader passion, and its associated harmonious and obsessive manifestations, have on their burnout and job satisfaction.

Below I have summarised the findings of each of these studies. From these summaries, I then concluded how each component is impacting school leader burnout and job satisfaction, and what strategies may best promote the reduction of school leader burnout and maintenance of school leader job satisfaction.

Summary of Findings

Study 1

For Study 1 I tested two models tailored to reflect the typical school leader role; one higher order model of school leader job demands and job resources to reflect the overall school leader role, the other a first order model reflecting the impact of the different key job demands and job resources of school leaders. The specific demands were quantitative, cognitive, emotional, and the demand for hiding emotions. The specific resources were autonomy, possibilities for development, social support from colleagues, and self-efficacy. My results indicated that:

(a) the majority of job demands were positively associated with burnout and negatively associated with job satisfaction, with only cognitive demands having no effect on burnout, and no effect on job satisfaction;

(b) all job resources but autonomy were negatively associated burnout. All job resources were positively associated with job satisfaction;

(c) emotional demands had the greatest positive impact on burnout, and self-efficacy had the greatest negative impact;

(d) emotional demands had the greatest negative impact on job satisfaction, and possibilities for development had the greatest positive impact;

(e) the impact of job demands on burnout far exceeded the impact of job resources on job satisfaction, whereas the impact of job resources on job satisfaction far exceeded the impact of job demands on burnout; and

(f) the interaction terms between job demands and job resources were significant and positive with both burnout and job satisfaction, yet comparatively small when compared with the direct effects.

Study 2

Study 2 consisted of a number of difference-in-differences analyses, measuring the impact of education reforms promoting the increase of controlled autonomy with school leaders. I analysed the *Empowering Local Schools Partnership* (ELS) and *Local Schools Local Decisions* (LSLD) education reforms on Australian school leader outcomes stipulated in Study 1. With this study I intended to determine how the current international education reform focus on controlled autonomy is influencing the Australian school leader high burnout high job satisfaction phenomenon, and whether the notion of controlled autonomy indeed increases actual school leader autonomy. My results indicated that:

(a) both education reforms did led to significant increases in school leader autonomy;

(b) besides its impact on autonomy, neither of the reforms significantly impacted school leader job demands nor job resources (except for increases in social support from colleagues regarding the ELS); and

(c) both of the reforms significantly increased school leader job satisfaction, yet neither impacted school leader burnout.

Study 3

For Study 3 I extended the Dualistic Model of Passion to be able to ascertain the impact passion, and its manifestations, have on school leader burnout and job satisfaction. To reflect the underlying a priori theory, I adopted a set-ESEM approach. To confirm the model's validity, I conducted rigorous psychometric testing. I used this model to conduct a reciprocal effects analysis on general, harmonious, and obsessive passion, in addition to burnout, and job satisfaction between timepoints 2015 and 2016. To reflect the typical high levels of passion amongst school leaders, I also analysed the interaction between general passion and both of its manifestations on burnout and job satisfaction. My results indicated that:

(a) harmonious passion led to reduced school leader burnout, but had no impact on job satisfaction, general passion, or obsessive passion;

(b) the interaction between general passion and harmonious passion led to higher reported obsessive passion over time;

(c) obsessive passion had no impact on reported burnout or job satisfaction, but led to increases in general passion;

(d) the interaction between general and obsessive passion led to increases in obsessive passion and increases in burnout, but decreases in general passion, harmonious passion, and job satisfaction; and

(e) general passion led to increases in job satisfaction, but had no impact on burnout, harmonious passion, or obsessive passion.

The Macro-, Meso-, and Micro-focused Influences on School Leader Outcomes

The three studies I conducted as part of my thesis provided insight into how Australian school leaders are influenced on the macro-, meso-, and micro-focused levels. Below I have provided insight into the different types of influences, based on the findings of my studies.

The Macro-Level Influence – Current Focus and Impact of Australian Education Policy

The Global Education Reform Movement has led to the adoption of numerus standardisation-oriented forms in Australia since the 1990s (Sahlberg, 2015; Mundy et al., 2016). Inspired by neoliberalist tenets (e.g., significant transition between publicly to privately owned entities), Australia's education systems have progressively become decentralised to best serve community and student needs (Checchi, 2006). Consequently, over the last decade education reform has been focussed on increasing school leader autonomy, yet still framed within standardised accountability metrics and national guidelines. This seemingly oxymoronic strategy of standardised decentralisation has been referred to providing school leaders with "controlled autonomy" (Weiner & Woulfin, 2017). My analyses on two key controlled autonomy centric Australian education reforms indicate they played a role in high burnout/high job satisfaction phenomenon experienced by Australian school leaders. Further, my results call into question a number of claims made for and against the efficacy of "controlled autonomy" based education reform.

Both the *Empowering Local Schools Initiative* (ELS) and *Local Schools Local Decisions* (LSLD), policies aimed at increasing school leader controlled autonomy, led to significantly higher levels of reported levels of job satisfaction amongst Australian school leaders. Yet, contrary to what Australian representative bodies have claimed (Australian Education Union, 2019), neither of the policies had any significant impact on school leader burnout levels.

Due to the seemingly oxymoronic nature of the "controlled autonomy" concept, whether controlled autonomy translates into actual autonomy has been questioned (Ekman, 2012). Barker (2006), for example, concluded that controlled autonomy instead decreased the actual autonomy of employees involved. My results contradict these claims within the context of Australian school leaders. Both the ELS and LSLD led to increases in reported school leader autonomy. That said, besides autonomy, and social support from colleagues regarding the ELS, neither the ELS nor the LSLD had any impact on school leader job demands or job resources. In summary, the significant increase in job satisfaction as a result of these policies, yet lack of decrease in burnout, has likely contributed to the high burnout/high job satisfaction phenomenon experienced by Australian school leaders.

The Meso-Level Influence – The School Leader Role and Responsibilities

The Job Demands/Resources Theory (Bakker, Demerouti, & Chen, 2017) is one of many theories founded on the well documented relationship between occupational psychosocial aspects and employee wellbeing (Bailey et al., 2015). It posits job characteristics can be categorised into two distinct facets, job demands or job resources (Bakker, Demerouti, & Chen, 2017). A job demand is any sustained physical, social, or organisational responsibility which results in physiological and/or psychological burden (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Job demands are theorised to hinder an employee's ability to effectively recover from their job responsibilities, leading to employee strain, such as burnout. Job resources, on the other hand, are components that assist employees with meeting their responsibilities, theorised to mitigate, or "buffer", the negative impact of job demands and increase employee job satisfaction (Bakker and Demerouti, 2007). Considering the nature of the school leader role, it is of little wonder Australian school leaders have consistently reported higher levels of demands and burnout than the average population (Riley, 2013-2019). My results indicate that the demands most strongly associated

with burnout are those most prevalent in the school leader role. School leaders are frequently engaged in emotionally demanding situations, such as managing numerous stakeholders (Maxwell and Riley, 2017), acting as mediator between teachers, students, and parents (Ediger, 2016), and catering to, and being responsible for, students in physically and mentally abusive situations (Ediger, 1996). Unfortunately, my results, along with those of Friedman (2002) and Poirel et al. (2012) indicate emotional demands are the most impactful towards school leader burnout. Further, my results indicate the job resources predominately provided to Australian school leaders via current education policy, autonomy and possibilities for development, had the smallest negative association with burnout. Conversely, these resources had the greatest influence on school leader job satisfaction. Of note, my results on autonomy appear to conflict with other research that has found autonomy being vital for employees to manage their demands, and reduce their burnout levels (Hu, Schaufeli, & Taris, 2016; Kim, 2016; Shih, Jiang, Klein, & Wang, 2011) whereas my results indicate autonomy had no impact on school leader burnout, even though its impact on job satisfaction was positive. Therefore it appears Australian school leaders frequently experience job demands strongest associated with burnout, yet are afforded resources weakest associated with burnout and strongest associated with job satisfaction. This combination logically justifies the current high burnout high job satisfaction phenomenon Australian school leaders experience.

Based on the JD-R theory, employee strain results from an imbalance between employee job demands and available job resources (Bakker, Demerouti, & Chen, 2017). My higher order model implies finding the correct balance is complex. The impact of higher order demands on burnout far exceeded that of the higher order job resources. Conversely, the impact of higher order job resources on job satisfaction far exceeded that of the higher order job demands

In summary, the nature of the school leader role justifies the current high burnout/high job satisfaction phenomenon school leader are experiencing. The interconnectedness of the emotionally demanding components of the school leader position imply it is unlikely feasible to significantly reduce their job demands without fundamentally changing their role. As such, the promotion of job resources appears most practical to address their high burnout. Policy makers must aim to have a level of job resources available to school leaders which is comparatively greater than their job demands to reduce their burnout whilst promoting job satisfaction.

The Micro-Level Influence – School Leader Work Passion

When considering the high levels of work passion amongst school leaders, my results show the micro-level influence of work passion and its manifestations play a role in the high burnout/high job satisfaction phenomenon. My results indicate that harmonious passion did lead to reductions in school leader burnout, thus mirroring the relationship citied in the majority of work passion literature (e.g., Birkeland & Buch, 2015; Trépanier et al., 2014). However, contrary to such passion literature, my results indicate that harmonious passion was not associated with job satisfaction (although see Fernet et al., 2014 that too did not find this expected association). Distinctly, the comparison between the results of my first model and my third model, where the significance between harmonious passion and job satisfaction disappears, highlights the need to expand the Passion Scale (Vallerand et al., 2003). My results indicate that it is general passion that is positively associated with job satisfaction, rather than harmonious passion. As such, considering that approximately 90% of Australian school leaders are deemed generally passionate about their work (Riley, 2015-2019), it appears passion plays a defining role in the high burnout/high job satisfaction phenomenon Australian school leaders are experiencing.

My findings on obsessive passion further support the distinct relevance of school leaders being a highly passionate population. Although previous literature has found obsessive passion was positively associated with burnout and negatively associated with job satisfaction (Birkeland & Buch, 2015; Trépanier et al., 2014), I found no such relationship. Only when the interaction between high general and obsession passion was considered did these relationships become evident in my findings. As such, the highly passionate school leaders are at risk of suffering high burnout if their passion manifests obsessively. Although this interaction too led to reduction in job satisfaction, such an impact is far smaller than the direct positive impact of having high general passion on job satisfaction. Therefore school leaders who are obsessively passionate would likely experience the combination of high burnout and high job satisfaction. Of concern, even those school leaders manifesting their passion harmoniously, the interaction between high general and harmonious passion led to increases in obsessive passion over time. This was in addition to the interaction between obsessive and general passion also leading to greater levels of obsessive passion, in addition to lower harmonious passion. As such, my results imply school leaders are at a significant risk of developing an obsessive manifestation of passion, regardless of how their passion is currently manifested.

Interconnection of the Foci

My studies make it clear that macro-, meso-, and micro-focused levels are all having distinct impacts of Australian school leader reported outcomes, thus holistically contributing to the current school leader high burnout high job satisfaction phenomenon. The current education reforms focusing on promoting controlled autonomy are having no impact on the levels of reported burnout, yet are increasing their reported autonomy. Although autonomy does increase school leader job satisfaction, my JD-R model indicated it is the only resource that has no negative association with school leader burnout. With knowledge of reported

school leader burnout being high for decades (Friedman, 2002; Riley, 2013-19), naturally education reform having no impact of reported school leader burnout results in a lack of change from the current crisis levels. With emotional demands having the greatest negative impact on school leader burnout, and so many responsibilities associated with the school leader role being emotionally demanding (e.g., Maxwell & Riley, 2017), it is of no surprise they are reporting high levels of burnout. Further, the disproportionate number of school leaders deemed passionate about their work when considering the average population too is playing a role in this phenomenon. Regardless of how Australian school leader's passion is manifested, ceteris paribus school leaders' passion becomes obsessive over time, thus resulting in higher levels of burnout, yet having no negative impact on reported job satisfaction.

Although these conclusions present an unchanged, if not grim picture for the future of Australian school leaders regarding their high levels of reported burnout, my findings do provide considerable insight into how we may tackle the high levels of reported burnout whilst maintaining their high levels of job satisfaction. As such, were fundamental changes made grounded in the understanding of macro-, meso-, and micro-focused level influences, the future of our school leaders may be bright.

Implications and Recommendations

From an education reform perspective, the current investment of finite government resources toward promoting controlled autonomy has minimal, if any, impact on the current Australian school leader burnout crisis. Policy makers must divert their efforts to the most pressing issue at hand; reducing Australian school leader burnout. Reform leading to significant reductions in job demands, especially emotional and quantitative demands, will likely be the most efficient method of reducing burnout. The extent by which school leaders demands can be reduced, however, is likely quite limited considering the inevitable demands

associated with their role (Riley, 2013-2019). As such, increasing job resources, specifically those which promote school leader self-efficacy and social support from colleagues, too are necessary to tackle the issue of high school leader burnout. That being said, research is needed into the promotion of school leader self-efficacy. Indeed increases in self-efficacy have been found with teachers when they have opportunities for development to increase their teacher preparedness (Pas, Bradshaw, & Hershfeldt, 2012), yet it is unclear whether this would be as effective with school leaders. Further, although it has been reported that greater levels of support and autonomy leads to higher school leader self-efficacy (Tschannen-Moran & Gareis, 2004; Ware & Kitantas, 2011), the findings from my second study indicate such education reforms promoting school leader autonomy had no immediate or longitudinal impact on school leader reported self-efficacy. Without a greater understanding on the promotion of school leader autonomy, policy makers would be uninformed and likely create ineffective interventions associated with such promotion.

The extent of job resources provided to school leaders must be to a far greater extent when compared to the level of their demands, in order to ensure the job resources mitigate the negative impact job demands have of school leader burnout (i.e., find the correct balance; Bakker, Demerouti, & Chen, 2017). As such, it is imperative for policy makers to closely monitor the progress of any reforms with this aim, ensuring the correct balance is ascertained. Policy makers must also consider the impact and trends associated with the high levels of work passion amongst Australian school leaders. Education reform, and/or education department stipulations ensuring harmonious over obsessive passion manifestations are promoted are too necessary to tackle the current levels of burnout and consequent attrition and self-harm. Policies promoting work-life balance, such as limits on allowable work hours, forced leave based on accrued balances, and family friendly policies such as flexible working conditions may promote school leader passion to manifest harmoniously, and most

importantly, remain harmoniously manifested. This is based on requiring school leaders to work in a manner that goes against the actions typically followed by those considered obsessive passionate (Vallerand et al., 2003). Whether artificially creating how one has their passion manifest, however, is yet to be tested, thus further research is required.

Although the above education reform recommendations will best address the issues facing our school leaders, it must be acknowledged that the disproportionate, albeit understandable, focus of education reform is on the promotion of better student outcomes. As such, to ensure the longevity, and most efficient use of the finite government resources, policy makers need to ensure such education reform also directly leads to better student outcomes when considering the intended design and implementation. In addition to closely monitoring the impact the education reform is having on school leader burnout and job satisfaction, so too must the impact such policies are having on student outcomes be measured.

Strengths, Limitations, and Directions for Future Research

The holistic and complex nature of the studies I conducted as part of my thesis give rise to a number of distinct strengths, but also limitations that must be taken into consideration.

Strengths

My thesis makes a number of important theoretical contributions. Overall, a greater understanding of school leaders, specifically the understanding that macro-, meso-, and micro-focused components holistically impact school leader job demands and job resources, in addition to their reported burnout and job satisfaction. With reference to Study 1, the higher order model informs the JD-R theory that the needed “balance” (Bakker, Demerouti, & Chen, 2017) between demands and resources may ironically be an imbalance between the extent of demands experienced and resources offered (i.e., for school leaders they require a

greater extent of job resources comparative to their job demands to successfully mitigate burnout). This indeed may too be the case regarding other industries, positions etc. and thus implies analysis of the interaction between high order job demands and resources should be conducted with JD-R studies.

Study 2 calls into question the seemingly consistent hype of the benefits associated with greater autonomy amongst school leaders, if not employees in general. With the considerable global focus on the promotion of greater employee autonomy, and the associated investment to make such autonomy possible, policy makers, employers, and other entities should further explore whether increasing autonomy is the most beneficial use of their resources when compared with other policy strategies.

With regards to my Study 3, my extended Passion Scale suggests the inconsistent findings within the current literature associated with work passion may be a result of researchers inaccurately tying significant influences to one of the passion manifestations, when in reality the impact arose from the underlying general passion itself. Further, the significance of impact on burnout from harmonious passion with the absence of general passion imply that harmonious passion may not necessarily be measuring a passion specific variable, but rather reflecting an extent of work-life balance an employee enjoys. Thus, the extension of the Passion Scale may lead to a considerably greater, and more consistent, understanding of passion within the workplace.

Limitations

A number of limitations also need to be considered when interpreting my studies' results and associated conclusions. First, all of my studies relied on data reported by Australian school leaders, and the analysis of Australian based education reform. As such, it is unclear as to whether my findings are limited to the Australian context, or may be applied internationally.

Second, the outcomes of interest were measured using self-report measures. Particularly in research focussed on stress, the limitations of relying on self-reported data have been identified (Dewe & Trenberth, 2004; Lazarus, 2000; Schmitt, 1994). Nevertheless, it is difficult to account for issues like participant malingering or social desirability. As such, additional research that ties together these subjective outcomes with objective outcomes is suggested, as it would provide insight in the validity of the measures I have used in my thesis.

Finally, it is fair to say that the key aims of education policy makers are more tied to the outcomes of students rather than school leaders (Save Our Schools, 2013). Were the recommendations from my findings to be expressly followed, indeed it is likely material changes to reported burnout would become evident, yet the implications of such recommendations on student outcomes was not considered. As such, policy makers may be less motivated to adopt these recommendations without understanding the impact they have on student outcomes.

Areas for Further Research

My thesis does highlight a number of keys areas in need of additional research. First, the current controlled autonomy education reforms should be researched using the methodology similar to that which I adopted, yet with a focus on student outcomes. Further, other education reforms should be researched in order to ascertain the underlying impact that are having, or have had, on school leaders job demands, job resources, burnout, and job satisfaction.

Second, my findings indicate that self-efficacy is the most effective resource in mitigating the impact job demands have on school leader burnout. As such, more research is needed regarding the promotion of self-efficacy among school leaders, and notably how such promotion can be done in a cost effective and practical manner within the context of education reform. Considering the effectiveness of improving self-efficacy amongst teachers

regarding increased training (Pas, Bradshaw, & Hershfeldt, 2012), training of school leaders should be explored as a viable option for its promotion.

Third, my research should be replicated among school leaders outside of the Australian context. Such research would indicate whether the provided recommendations are relevant internationally, or whether policy makers in other countries need to adopt alternative strategies. Although internationally the problem with high burnout among school leaders appears uniform, the underlying causes, and therefore strategies to reduce, may indeed be materially different.

Fourth, further research may too involve analysing those in professions also experiencing both high burnout and high job satisfaction, such as chief executive officers and physicians (Sokanu Interactive Inc, 2016; Shanefelt et al., 2012; Mcconnell, 2018). Research in these areas my provide additional insight into how to address the current situation experienced by school leaders, and vice versa.

Conclusion

My thesis provides a comprehensive exploration of how marco-,meso-, and micro-focused components together are prompting the current high burnout/high job satisfaction phenomenon being experienced by Australia's school leaders. Notably, the interconnection between these components indicate the most effective manner in which they can all be addressed – via education policy reform. My findings highlight the importance of considering all levels of influence when addressing school leader wellbeing. The complexity and breadth of influence thus likely explains why the issue of school leader burnout and attrition has persisted for decades.

Reference List

Albrecht, S. L., & Marty, A. (2017). Personality, self-efficacy and job resources and their associations with employee engagement, affective commitment and turnover intentions. *The International Journal of Human Resource Management*, DOI: 10.1080/09585192.2017.1362660

Andersen, D. R., Andersen, L. P., Gadegaard, C. A., Høgh, A. P., Annick., & Lund, T. (2017). Burnout among Danish prison personnel: A question of quantitative and emotional demands. *Scandinavian Journal of Public Health, 45*(8), 824-830.

Angrist, J.D. and A.B. Krueger, A.B. (1999). Empirical strategies in labor economics. *Handbook of Labor Economics* 3A. North–Holland.

Ariëns, G. A., Bongers, P. M., Hoogendoorn, W. E., Houtman, I. L., Van der Wal, G., & Van Mechelen, W. (2001). High Quantitative Job Demands and Low Coworker Support As Risk Factors for Neck Pain: Results of a Prospective Cohort Study. *Spine, 26*(17), 1896-1901.

Arens, A., & Morin, A. (2016). Relations Between Teachers' Emotional Exhaustion and Students' Educational Outcomes. *Journal of Educational Psychology, 108*(6), 800-813.

Australian Bureau of Statistics. (2016). *Australian Demographic Statistics, Jun 2016*. Canberra: Australian Bureau of Statistics. Retrieved 12 September 2020 from https://www.abs.gov.au/ausstats/abs@.nsf/lookup/3101.0Media%20Release1Jun%202016

Australian Bureau of Statistics. (2017). *What is the AQF?*. Canberra: Australian Bureau of Statistics. Retrieved 22 August 2017 from https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4221.0main+features22017.

Australian Bureau of Statistics. (2019). *Socio-Economic Indexes for Areas*. Retrieved from

https://www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001

Australian Bureau of Statistics. (2017). *What is the AQF?*. Canberra: Australian Bureau of Statistics. Retrieved 22 August 2017 from https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4221.0main+features22017.

Australian Education Union.(2019, August 21). Workloads: the urgent need for change. Retrieved from http://www.aeufederal.org.au/news-media/news/2019/workloads-urgent-need-change

Australian Government. (2001). *Corporations Act 2001*. Canberra: Australian Government.

Australian Government. (2018). *What is the AQF?*. Canberra: Australian Government Department of Education. Retrieved 13 January 2018 from https://www.aqf.edu.au/what-is-the-aqf.

Australian Government Department of Education. (2018). *Education costs in Australia*. Canberra: Australian Government. Retrieved 13 January 2018 from https://www.studyinaustralia.gov.au/english/australian-education/education-costs.

Bailey, T., Dollard, M., & Richards, P. (2015). A National Standard for Psychosocial Safety Climate (PSC): PSC 41 as the Benchmark for Low Risk of Job Strain and Depressive Symptoms. *Journal of Occupational Health Psychology, 20*(1), 15-26.

Bakker, A., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309-328.

Bakker, A., & Demerouti, E. (2014) *Job Demands-Resources Theory*. In: Chen, P.Y. and Cooper, C.L., Eds., Work and Wellbeing: A complete Reference Guide, John Wiley & Sons, New York, 1-28. http://dx.doi.org/10.1002/9781118539415.wbwell019.

Bakker, A., & Demerouti, E. (2017). Job Demands–Resources Theory: Taking Stock and Looking Forward. *Journal of Occupational Health Psychology, 22*(3), 273-285.

Bakker, A., Demerouti, E., & Chen, P. (2017). Job Demands–Resources Theory: Taking Stock and Looking Forward. *Journal of Occupational Health Psychology, 22*(3), 273-285.

Barker, R. (2002). An Examination of Organizational Ethics. *Human Relations, 55*(9), 1097-1116.

Beatty, B. (2000). The emotions of educational leadership: Breaking the silence. *International Journal of Leadership in Education, 3*(4), 331-357.

Bélanger, J., Pierro, A., Kruglanski, A., Vallerand, R., De Carlo, N., & Falco, A. (2015). On feeling good at work: The role of regulatory mode and passion in psychological adjustment. *Journal of Applied Social Psychology, 45*(6), 319-329.

Berkovich, I., & Eyal, O. (2015). Educational Leaders and Emotions: An International Review of Empirical Evidence 1992–2012. *Review of Educational Research, 85*(1), 129-167.

Bentler, P. M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin, 107*(2), 238-246. doi:10.1037/0033-2909.107.2.238

Bernhard-Oettel, C., Stengård, J., Leineweber, C., Westerlund, H., Peristera, P., & Östergren, P. (2018). Stuck at a workplace: What's work control, demands and learning got to do with it? A longitudinal multilevel study on Swedish permanent employees in situations of 'workplace locked-in'. *The International Journal of Human Resource Management,* 1-22.

Birkeland, I., & Buch, K. (2015). The dualistic model of passion for work: Discriminate and predictive validity with work engagement and workaholism. *Motivation and Emotion, 39*(3), 392-408.

Bogaert, P., Clarke, S., Willems, R., & Mondelaers, M. (2013). Nurse practice environment,

workload, burnout, job outcomes, and quality of care in psychiatric hospitals: A structural equation model approach. *Journal of Advanced Nursing, 69*(7), 1515-1524.

Bono, J., Foldes, H., Vinson, G., & Muros, J. (2007). Workplace Emotions: The Role of Supervision and Leadership. *Journal of Applied Psychology, 92*(5), 1357-1367.

Brinks, L., & Marshall, William J. A. (2012). *Principal-Leaders in Schools for Secondary Level Deaf Students: Perceived Effects on Principal-Leadership Behaviors Influencing School Performance and Student Success*, ProQuest Dissertations and Theses.

Browne, M., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods and Research, 21*(2), 230-258.

Burke, R., Astakhova, J., & Hang, M. (2015). Work Passion Through the Lens of Culture: Harmonious Work Passion, Obsessive Work Passion, and Work Outcomes in Russia and China. *Journal of Business and Psychology, 30*(3), 457-471.

Bushardt, S. C., Beal, B. D., Young, M., & Khosla, S. (2016). Professional nurses and the dark side of work passion. *Nursing Management (Springhouse), 47*(1), 48-52.

Carbonneau, N., Vallerand, R., Fernet, C., Guay, F., & Harris, Karen R. (2008). The Role of Passion for Teaching in Intrapersonal and Interpersonal Outcomes. *Journal of Educational Psychology, 100*(4), 977-987.

Champoux, J., & Peters, W. (1987). Form, effect size and power in moderated regression analysis. *Journal of Occupational Psychology, 60*, 243-255.

Checchi, D (2006). The Economics of Education. *Cambridge University Press*. DOI: 10.1017/CBO9780511492280

Chen, F. F. (2007). Sensitivity of goodness of fit indices to lack of measurement invariance. Structural Equation Modeling, 14, 464–504.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating Goodness-of-Fit Indexes for Testing Measurement Invariance. *Structural Equation Modeling, 9*(2), 233-255.

Christensen, J. O., & Knardahl, S. (2012). Work and headache: A prospective study of psychological, social, and mechanical predictors of headache severity. *Pain, 153*(10), 2119-2132.

Cho, S., Park, M., Jeon, S., Chang, H., & Hong, H. (2014). Average Hospital Length of Stay, Nurses' Work Demands, and Their Health and Job Outcomes. *Journal of Nursing Scholarship, 46*(3), 199-206.

Clausen, T., Nielsen, K., Carneiro, I., & Borg, V. (2012). Job demands, job resources and long-term sickness absence in the Danish eldercare services: A prospective analysis of register-based outcomes. *Journal of Advanced Nursing, 68*(1), 127-136.

Cohen, M., & Gagin., R. (2005) Can Skill-Development Training Alleviate Burnout in Hospital Social Workers?. *Social Work in Health Care, 40*(4), 83-97.

Collie, R. J., Shapka, J. D., Perry, N. E., & Martin, A. J. (2016). Teachers' psychological functioning in the workplace: Exploring the roles of contextual beliefs, need satisfaction, and personal characteristics. *Journal of Educational Psychology, 108*(6), 788-799.

Conley, T. (2015). *Teacher and Principals' Beliefs about Self-Efficacy and the Effects on Student Learning During School Improvement: Perspectives from the Field,* ProQuest Dissertations and Theses.

Cooper, C., & Farber, B. (1985). Stress and Burnout in the Human Service Professions. *The International Journal of Sociology and Social Policy, 5*(1), 97-98.

Costen, W., & Salazar, J. (2011). The Impact of Training and Development on Employee Job Satisfaction, Loyalty, and Intent to Stay in the Lodging Industry. *Journal of Human Resources in Hospitality & Tourism, 10*(3), 273-284.

Crawford, M. (2007). Emotional Coherence in Primary School Headship. *Educational Management Administration & Leadership, 35*(4), 521-534.

Curran, T., Appleton, P., Hill, A., & Hall, H. (2011). Passion and burnout in elite junior soccer players: the mediating role of self-determined motivation. *Psychology of Sport and Exercise, 12* (6), pp. 655-661.

Dadaczynski, K., & Paulus, P. (2015). Healthy principals–healthy schools? A neglected perspective to school health promotion. In *Schools for Health and Sustainability* (pp. 253–273). Springer Netherlands.

Darmody, M., & Smyth, E. (2016). Primary school principals ' job satisfaction and occupational stress. *International Journal of Educational Management, 30*(1), 115-128.

Dawson, J.F. (2014). Moderation in Management Research: What, Why, When, and How. *J Bus Psychol* 29**,** 1–19. https://doi.org/10.1007/s10869-013-9308-7

Day, D. (2011). Leadership development. In A. Byrman, D Collinson, K. Grint, B Jackson and m. Uhil-Bien (eds), *The SAGE Handbook of Leadership,* (pp. 37–50). Thousand Oaks/London: SAGE.

Department of Education, Employment and Workplace Relations. (2013). Empowering Local Schools Initiative. Retrieved from http://deewr.gov.au/empowering-local-schools

Department of Education and Training. (2018). *Through Growth to Achievement: Report of the Review to Achieve Educational Excellence in Australian Schools.* Canberra: Department of Education and Training.

De Jonge., Le Blanc., Peeters., & Noordam. (2008). Emotional job demands and the role of matching job resources: A cross-sectional survey study among health care workers. *International Journal of Nursing Studies, 45*(10), 1460-1469.

Deloitte Australia. (2017). *Principal workload and time use study.* Deloitte Touche Tohmatsu.

Demerouti, E., Bakker, A., Nachreiner, F., & Schaufeli, W. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499-512.

Department of Education and Training. (2018). *Through Growth to Achievement: Report of the Review to Achieve Educational Excellence in Australian Schools.* Canberra: Department of Education and Training.

Dewa, C. S., Dermer, S. W., Chau, N., Lowrey, S., Mawson, S., & Bell, J. (2009). Examination of factors associated with the mental health status of principals. *Work, 33*(4), 439–448.

Dewe, P. (2004). Work stress and coping: Theory, research and practice. *British Journal of Guidance and Counselling*, *32,* 139–142. doi:10.1080/03069880410001693138

Dicke, T., Marsh, H., Riley, P., Parker, P., Guo, J., & Horwood, M. (2018). Validating the Copenhagen Psychosocial Questionnaire (COPSOQ-II) Using Set-ESEM: Identifying Psychosocial Risk Factors in a Sample of School Principals. *Frontiers in Psychology, 9*, 584.

Dicke, T., Marsh, H. W., Parker, P., Guo, J., Riley, P., & Waldeyer, J. Job Satisfaction of Teachers and their Principals in Relation to Climate and Student Achievement. *Journal of Education Psychology*. In press. DOI: 10.1037/edu0000409

Dicke, T., Parker, P., Marsh, H., Kunter., Mareike., Schmeck., Annett., & Leutner, D. (2014). Self-Efficacy in Classroom Management, Classroom Disturbances, and Emotional Exhaustion: A Moderated Mediation Analysis of Teacher Candidates. *Journal of Educational Psychology, 106*(2), 569-583.

Dicke, T., Parker, P., Holzberger, D., Kunina-Habenicht, O., Kunter, M., & Leutner, D. (2015). Beginning teachers' efficacy and emotional exhaustion: Latent changes, reciprocity, and the influence of professional knowledge. *Contemporary Educational Psychology, 41*(C), 62-72.

Dicke, T., Stebner, F., Linninger, C., Kunter, M., & Leutner, D. (2017). A Longitudinal Study

of Teachers' Occupational Well-Being: Applying the Job Demands-Resources Model. Journal of Occupational Health Psychology. In press.

Ediger, M. (2016). The principal as supervisor in the school setting. *Education, 136*(3), 323.

Ediger, M. (1996). The school principal with new responsibilities. *Education, 116*(3), 381.

Ekman, S. (2012). *Authority and Autonomy, Paradoxes in Modern Knowledge Work*. Palgrave Macmillan.

Elfering, A., Grebner, S., Leitner, M., Hirschmüller, A., Kubosch, E., & Baur, H. (2017). Quantitative work demands, emotional demands, and cognitive stress symptoms in surgery nurses. *Psychology, Health & Medicine, 22*(5), 604-610.

Enders, C. K. (2010) *Applied Missing Data Analysis*. New York, NY; London: Guilford Press.

Fernet, C., Lavigne, G., Vallerand, R., & Austin, S. (2014). Fired up with passion: Investigating how job autonomy and passion predict burnout at career start in teachers. *Work & Stress*, 1-19.

Fragoso, Z., Holcombe, K., Mccluney, C., Fisher, G., Mcgonagle, A., & Friebe, S. (2016). Burnout and Engagement: Relative Importance of Predictors and Outcomes in Two Health Care Worker Samples. *Workplace health & safety, 64* (10), 479-487.

Freudenberger, H. J. (1975). *The staff burnout syndrome*. Washington, DC: Drug Abuse Council.

Friedman, I. (1995). Measuring School Principal-Experienced Burnout. *Educational and Psychological Measurement, 55*(4), 641-651.

Friedman, I. (2002). Burnout in School Principals: Role Related Antecedents. *Social Psychology of Education, 5*(3), 229-251.

Gallup. (2013). *State of the Global Workplace*. Gallup Inc.

Gerrig., Richard, J., & Zimbardo, P. (2002) Glossary of Psychological Terms. *Psychology and*

Life. Allyn and Bacon, Boston, MA. Pearson Education.

Gist, M., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review, 17*, 183-211.

Gmelch, W., & Swent, B. (1984). Management Team Stressors and their Impact on Administrators' Health. *Journal of Educational Administration, 22*(2), 192-205.

Gonski, D. (2011). *Review of Funding for Schooling – Final Report*. Canberra: Australian Government Department of Education.

Grissom, J. A., Loeb, S., & Mitani, H. (2015). Principal time management skills: Explaining patterns in principals' time use, job stress, and perceived effectiveness. *Journal of Educational Administration, 53*, 773–793.

Gurr, D., Drysdale, L., & Mulford, B. (2007). Models of successful principal leadership. *School Leadership & Management, Vol.26*(4), p.371-395

Gustafsson, H, Hassmen, P, & Hassmen, N. (2011). Are athletes burning out with passion? *European Journal Of Sport Science, 11*(6), 387-395.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior & Human Performance, 16*(2), 250–279. https://doi.org/10.1016/0030-5073(76)90016-7

Hackman, J. R., & Oldham, G. R. (1980). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance, 16*(2), 250-279.

Hagel, J., Brown, J.S. and Samoylova, T. (2013) *Unlocking the passion of the Explorer*, Deloitte University Press.

Hakanen, J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43*, 495–513.

Hamilton, D. (2014). Making Educational Reform Work: Stories of School Improvement in Urban China. *Journal of International Education and Leadership, 4*(1), 1-16.

Hanaysha., & Tahir. (2016). Examining the Effects of Employee Empowerment, Teamwork, and Employee Training on Job Satisfaction. *Procedia - Social and Behavioral Sciences, 219*, 272-282.

Hargreaves, A. (2003). *Teaching in the knowledge society: Education in the age of insecurity* (Professional learning). New York: Teachers College Press.

Hingston, J (2018). Faculty of Education & Arts, School of Education. *The Impact of School Autonomy Reform on Secondary Principals*.

Hinz, A., Zenger, M., Brähler, E., Spitzer, S., Scheuch, K., & Seibt, R. (2016). Effort–Reward Imbalance and Mental Health Problems in 1074 German Teachers, Compared with Those in the General Population. *Stress and Health, 32*(3), 224-230.

Hochschild, A. (2003). *The managed heart : Commercialization of human feeling*. Berkeley: University of California Press.

Horwood, M. S., Riley, P., Marsh, H., & Parker, P. (2019). One in three principals are seriously stressed, here's what we need to do about it. *The Conversation*. Retrieved from https://theconversation.com/one-in-three-principals-are-seriously-stressed-heres-what-we-need-to-do-about-it-110774.

Houlfort, N., L. Philippe, F., J. Vallerand, R., & Ménard, J. (2013). On passion and heavy work investment: Personal and organizational outcomes. *Journal of Managerial Psychology*, *29*(1), 25-45.

House, J. S. (1981). *Work stress and social support*. Reading, MA: Addison-Wesley.

Hubert, B. (1979). *Social Statistics*. McGraw-Hill.

Hu, L., & Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives. *Structural Equation Modeling, 6*(1), 1-55.

Hu, Q., Schaufeli, W., & Taris, T. (2016). Extending the job demands-resources model with

guanxi exchange. *Journal of Managerial Psychology, 31*(1), 127-140.

Independent Schools Council of Australia. (2016). Autonomy and Accountability. Deakin ACT: Independent Schools Council of Australia. Retrieved 13 January 2018 from http://isca.edu.au/about-independent-schools/autonomy-and-accountability/.

Institute for Quality and Efficiency in Healthcare. (2017, January 12). *Depression: What is burnout?* PubMed Health. Retried from https://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0072470/

Jawahar, I. M. (2012). Mediating Role of Satisfaction with Growth Opportunities on the Relationship Between Employee Development Opportunities and Citizenship Behaviors and Burnout. *Journal of Applied Social Psychology, 42(*9), 2257-2284.

Jimmieson, N. L., Tucker, M. K., & Walsh, A. J. (2017). Interaction effects among multiple job demands: an examination of healthcare workers across different contexts. *Anxiety, stress, and coping*, *30*(3), 317–332. https://doi.org/10.1080/10615806.2016.1229471

Judge, T. A., Weiss, H. M., Kammeyer-Mueller, J. D., & Hulin, C. L. (2017). Job attitudes, job satisfaction, and job affect: A century of continuity and of change. *Journal of Applied Psychology*, *102*(3), 356-374. http://dx.doi.org/10.1037/apl0000181

Karger, H.J. (1981.) Burnout as alienation. *Social Service Review*, *55*, 270-283.

Karasek, R. (1979). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly, 24*(2), 285-308.

Kay-Eccles, R. (2012). Meta-Analysis of the Relationship Between Coworker Social Support and Burnout Using a Two-Level Hierarchical Linear Model. *Western Journal of Nursing Research, 34*(8), 1062-1063.

Kim, Y. (2016). Music therapists' job demands, job autonomy, social support, and their relationship with burnout and turnover intention. *The Arts in Psychotherapy, 51*, 17-23.

Kirkeleit, J., Riise, T., Bjørge, T., & Christiani, D. (2013). The Healthy Worker Effect in

Cancer Incidence Studies. *American Journal of Epidemiology, 177*(11), 1218-1224.

Klein, A., & Moosbrugger, H. (2000). Maximum likelihood estimation of latent interaction effects with the LMS method. *Psychometrika, 65*(4), 457-474.

Klusmann, U., Richter, D., & Lüdtke, O. (2016). Teachers' emotional exhaustion is negatively related to students' achievement: Evidence from a large-scale assessment study. *Journal of Educational Psychology, 108*(8), 1193-1203.

Koh, W. L., Steers, R. M., & Terborg, J. R. (1995). The effects of transformational leadership on teacher attitudes and student performance in Singapore. *Journal of Organizational Behavior, 16*(4), 319–333.

Kornhauser, A.W., Sharp, A.A. (1932). Employee attitudes; suggestions from a study in a factory. *Personnel Journal* (10), 393–404.

Kristensen, T., Bjorner, J., Christensen, K., & Borg, V. (2004). The distinction between work pace and working hours in the measurement of quantitative demands at work. *Work & Stress, 18*(4), 305-322.

Lavigne, G., Forest, J., & Crevier-Braud, L. (2012). Passion at work and burnout: A two-study test of the mediating role of flow experiences. *European Journal of Work and Organizational Psychology, 21*(4), 518-546.

Lazarus, R. S. (2000). Toward better research on stress and coping. *American Psychologist, 55*, 665–673. doi:10.1037/0003-066X.55.6.665

Le Blanc, P., Bakker, A., Peeters, M., Van Heesch, N., & Schaufeli, W. (2001). Emotional job demands and burnout among oncology care providers. *Anxiety, Stress & Coping, 14*(3), 243-263.

Lee, B. (2016). Relationship Between Hiding Emotions and Health Outcomes Among South Korean Interactive Service Workers. *Workplace Health & Safety, 64*(5), 187-194.

Lee, M. (2016). Matching, Regression Discontinuity, Difference in Differences, and Beyond.

Oxford University Press. DOI:10.1093.9780190258733.001.0001

Leithwood, K. (1994). Leadership for School Restructuring. *Educational Administration Quarterly, 30*(4), 498-518.

Leithwood, K. & Louis, K.S. (2012). *Linking Leadership to Student Learning*. San Francisco: Jossey-Bass.

Leiter, M., Hakanen, J., Ahola, K., Toppinen-Tanner, S., Koskinen, A., & Väänänen, A. (2013). Organizational predictors and health consequences of changes in burnout: A 12-year cohort study. *Journal of Organizational Behavior, 34*(7), 959-973.

Letter, M. P., Bakker, A. B., and Maslach, C. (2014). *Burnout at Work: A Psychological Perspective.* New York, NY: Taylor & Francis Group.

Loi, Liu, Lam, & Xu. (2016). Buffering emotional job demands: The interplay between proactive personality and team potency. *Journal of Vocational Behavior, 95-96,* 128-137.

Lynch, J. (2012). Responsibilities of Today's Principal: Implications for Principal Preparation Programs and Principal Certification Policies. *Rural Special Education Quarterly, 31*(2), 40-47.

Malach-Pines, A., & Carlson, John G. (2005). The Burnout Measure, Short Version. *International Journal of Stress Management, 12*(1), 78-88.

MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological methods, 7*(1), 19-40.

Marsh, H. W. (1994). Confirmatory factor analysis models of factorial invariance: A multifaceted approach. *Structural Equation Modeling: A Multidisciplinary Journal, 1*(1), 5-34. doi:10.1080/10705519409539960

Marsh, H. W., Guo, J., Dicke, T., Parker, P. D., Craven, R. G. (in press). Confirmatory factor analysis (CFA), exploratory structural equation modeling (ESEM) & Set-ESEM:

Optimal balance between goodness of fit and parsimony. *Multivariate Behavioral Research*

Marsh, H., Wen, Z., & Hau, K. (2004). Structural Equation Models of Latent Interactions: Evaluation of Alternative Estimation Strategies and Indicator Construction. *Psychological Methods, 9*(3), 275-300.

Marsh, H., & Hau, K. (1996). Assessing Goodness of Fit: Is Parsimony Always Desirable? *The Journal of Experimental Education, 64*(4), 364-390.

Marsh, H. W., Hau, K. T., & Grayson, D. (2005). Goodness of fit in structural equation models. In A. Maydeu-Olivares & J. J. McArdle (Eds.), *Contemporary Psychometrics* (pp. 225-340). Mahwah, NJ: Lawrence Erlbaum Associates.

Marsh, H W. , Hau, K T. & Wen, Z. , (2004). In search of golden rules: Comment on hypothesis testing approaches to setting cutoff values for fit indexes and dangers in overgeneralising Hu & Bentler's (1999) findings. *Structural Equation Modelling*, 11, 320-341. http://dx doi org/10 1207/s15328007sem1103_2.

Marsh, H.W., Morin, A.J.S., Parker, P., & Kaur, G. (2014). Exploratory Structural Equation Modeling: An Integration of the best Features of Exploratory and Confirmatory Factor Analysis. Annual Review of Clinical Psychology, 10. 85-110

Marsh, H. W., & Scalas, L. F. (2018). Individually weighted-average models: Testing a taxonomic SEM approach across different multidimensional/global constructs because the weights "don't make no nevermind". *Structural Equation Modeling, 25*(1), 137-159. doi:10.1080/10705511.2017.1370377

Marsh, H., Vallerand, R., Lafrenière, M., Parker, P., Morin, A., Carbonneau, N., . . . Reynolds, Cecil R. (2013). Passion: Does One Scale Fit All? Construct Validity of Two-Factor Passion Scale and Psychometric Invariance Over Different Activities and Languages. *Psychological Assessment, 25*(3), 796-809.

Marsh, H. W., & Yeung, A. S. (1998). Top-down, bottom-up, and horizontal models: The direction of causality in multidimensional, hierarchical self-concept models. *Journal of Personality and Social Psychology, 75,* 509-527.

Maxwell, A., & Riley, P. (2017). Emotional demands, emotional labour and occupational outcomes in school principals: Modelling the relationships. *Educational Management Administration & Leadership, 45*(3), 484-502.

Maydeu-Olivares, A. (2017). Maximum Likelihood Estimation of Structural Equation Models for Continuous Data: Standard Errors and Goodness of Fit. *Structural equation Modeling: A Multidisciplinary Journal*, *24*(3), 383-394, DOI: 10.1080/10705511.2016.1269606

Mcconnell, I. (2018). *C-Level Burnout: A Problem No One Talks About.* TLNT. https://www.tlnt.com/c-level-burnout-a-problem-no-one-talks-about/

Messias, E., Gathright, M., Freeman, E., Flynn, V., Atkinson, T., Thrush, C., . . . Thapa, P. (2019). Differences in burnout prevalence between clinical professionals and biomedical scientists in an academic medical centre: A cross-sectional survey. *BMJ Open, 9*(2), E023506.

Mette, J., Velasco Garrido, M., Preisser, A., Harth, V., & Mache, S. (2018). Linking quantitative demands to offshore wind workers' stress: Do personal and job resources matter? A structural equation modelling approach. *BMC Public Health, 18*(1), 1-15.

Meyer, S., & Hünefeld, L. (2018). Challenging Cognitive Demands at Work, Related Working Conditions, and Employee Well-Being. *International Journal of Environmental Research and Public Health, 15*(12), International journal of environmental research and public health, December 19, 2018, Vol.15(12).

Moè, A. (2016). Harmonious passion and its relationship with teacher well-being. *Teaching and Teacher Education, 59,* 431-437.

NSW Department of Education. (2017). *Local School, Local Decisions*. Sydney: NSW Department of Education. Retrieved 20 January 2018 from https://education.nsw.gov.au/our-priorities/work-more-effectively/local-schools-local-decisions.

Mundy, K., Green, A., Lingard, B., & Verger, A. (Eds.). (2016). *Handbook of global education policy*. Retrieved from https://ebookcentral-proquest-com.ezproxy1.acu.edu.au

Nübling, M., Burr, H., Moncada, S., & Kristensen, T. S. (2014). COPSOQ International Network: Co-operation for research and assessment of psychosocial factors at work. *Public Health Forum, 22,* A1–3.

Oldham, G., & Gordon, B. (1999). Job complexity and employee substance use: The moderating effects of cognitive ability. *Journal of Health and Social Behavior, 40*(3), 290-306.

Panatik, S., O'Driscoll, M., & Anderson, M. (2011). Job demands and work-related psychological responses among Malaysian technical workers: The moderating effects of self-efficacy. *Work & Stress, 25*(4), 355-370.

Pas, E., Bradshaw, C., & Hershfeldt, P. (2012). Teacher- and school-level predictors of teacher efficacy and burnout: Identifying potential areas for support. *Journal of School Psychology, 50*(1), 129-145.

Perrewé, P., Hochwarter, W., Ferris, G., McAllister, C., & Harris, J. (2013). Developing a passion for work passion: Future directions on an emerging construct. *Journal of Organizational Behavior, 35*(1), 145-150.

Poirel, E., Lapointe, P., & Yvon, F. (2012). Coping with Administrative Constraints by Quebec School Principals. *Canadian Journal of School Psychology, 27*(4), 302-318.

Porter, A., Polikoff, M., Goldring, E., Murphy, J., Elliott, S., & May, H. (2010). Investigating

the Validity and Reliability of the Vanderbilt Assessment of Leadership in Education. *The Elementary School Journal, 111*(2), 282-313.

Proctor, H., & Aitchison, C. (2015). Markets in education: 'School choice' and family capital. *Markets in Education: 'School Choice' and Family Capital.*

Quinones., & Griffiths. (2017). The impact of daily emotional demands, job resources and emotional effort on intensive internet use during and after work. *Computers in Human Behavior, 76*(C), 561-575.

Rhodes, C., & Greenway, C. (2010). Dramatis personae: Enactment and performance in primary school headship. *Management in Education, 24*(4), 149-153.

Riley, P. (2013). The complexities of school leadership: Many boundaries to cross. In J.Langan-Fox & C. L. Cooper (Eds.), *Boundary-Spanning in Organizations: Network, Influence, and Conflict* (pp. 187-205). London: Routledge.

Riley, P. (2014). *The Australian principal occupational health, safety & well-being survey: 2014 data*. Melbourne: ACU. Retrieved 08 January 2018 from www.principalhealth.org/au/reports.php.

Riley, P. (2015). *The Australian principal occupational health, safety & well-being survey: 2015 data*. Melbourne: ACU. Retrieved 08 January 2018 from www.principalhealth.org/au/reports.php.

Riley, P. (2016). *The Australian principal occupational health, safety & well-being survey: 2016 data*. Melbourne: ACU. Retrieved 08 January 2018 from www.principalhealth.org/au/reports.php.

Riley, P. (2017). *The Australian principal occupational health, safety & well-being survey: 2017 data*. Melbourne: ACU. Retrieved 08 January 2018 from www.principalhealth.org/au/reports.php.

Riley, P. (2018). *The Australian principal occupational health, safety & well-being survey:*

2018 data. Melbourne: ACU. Retrieved 08 January 2018 from www.principalhealth.org/au/reports.php.

Riley, P. (2019). *The Australian principal occupational health, safety & well-being survey: 2018 data*. Melbourne: ACU. Retrieved 5 April 2019 from https://www.healthandwellbeing.org/assets/reports/AU/2018_AU_Final_Report.pdf.

Saarivirta, T., & Kumpulainen, K. (2016). School autonomy, leadership and student achievement: Reflections from Finland. *International Journal of Educational Management, 30*(7), 1268-1278.

Sahlberg, P. (2004). Teaching and globalization. *Managing Global Transitions, 2*(1), 65-83. Retrieved from https://search-proquest-com.ezproxy2.acu.edu.au/docview/902707207?accountid=8194

Sahlberg, P. (2015). A Model Lesson. Finland Shows that Equity and Excellence Can Co-exist in Education. *Pensamiento Educativo: Revista De Investigación Educacional Latinoamericana, 52*(1), 136-145.

Save Our Schools, 2013. *School Autonomy Fails to Increase Student Achievement and Undermines Collaboration between Schools.* Australian Parliamentary Committee, Canberra: Australia.

Schmitt, N. (1994). Method bias: The importance of theory and measurement. *Journal of Organizational Behavior*, *15*, 393–398. doi:10.1002/job.4030150504

Schnake, M. (1991). Organizational Citizenship: A Review, Proposed Model, and Research Agenda. *Human Relations, 44*(7), 735-759.

Shanafelt, T., Boone, S., Tan, L., Dyrbye, L., Sotile, W., Satele, D., . . . Oreskovich, M. (2012). Burnout and Satisfaction With Work-Life Balance Among US Physicians Relative to the General US Population. *Archives of Internal Medicine (1960), 172*(18), 1377-1385.

Sharp, R. (2016). Work Addiction Risk Test. *Occupational Medicine, 66*(4), 341-342.

Shih, S., Jiang, J., Klein, F., & Wang, E. (2011). Learning demand and job autonomy of IT personnel: Impact on turner intention. *Computers in Human Behavior, 27*(6), 2301-2307.

Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology, 1*(1), 27–41. https://doi.org/10.1037/1076-8998.1.1.27

Sokanu Interactive INC. (2020). *Career Satisfaction.* CareerExplorer by sokanu. https://www.careerexplorer.com/analytics/career-satisfaction/

South Australia Department of Education. (2019). Education legislation. Retrieved from http://www.education.sa.gov.au/department/policies/education-legislation

Spector, P.E. (1997). *Job Satisfaction: Application, Assessment, Causes, and Consequences* (Advanced Topics in Organizational Behavior). Thousand Oaks, Calif.: Sage Publications.

Steiger, J. H. (1989). *EzPATH: Causal modeling*. Evanston, IL: SYSTAT.

Steinberg, M., & Cox, A. (2017). School Autonomy and District Support: How Principals Respond to a Tiered Autonomy Initiative in Philadelphia Public Schools. *Leadership and Policy in Schools, 16*(1), 130-165.

Stenfors, C., Magnusson Hanson, L., Oxenstierna, G., Theorell, T., Nilsson, L., & Coyne, J. (2013). Psychosocial Working Conditions and Cognitive Complaints among Swedish Employees. *PLoS ONE,8*(4), E60637.

Taormina, R. J. 1999. Predicting employee commitment and satisfaction: The relative effects of socialization and demographics. *International Journal of Human Resource Management*, 10(6): 1060–1076.

Taris, T., & Schreurs, P. (2009). Explaining worker strain and learning: How important are

emotional job demands? *Anxiety, Stress & Coping, 22*(3), 245-262.

Torff, B., & Sessions, D. (2005). Principals' Perceptions of the Causes of Teacher Ineffectiveness. *Journal of Educational Psychology, 97*(4), 530-537.

Trepanier, S., Fernet, C., Austin, S., Forest, J., & Vallerand, R. (2014). Linking job demands and resources to burnout and work engagement: Does passion underlie these differential relationships? *Motivation and Emotion, 38*(3), 353-366.

Tröhler, D., & Barbu, R. (2011). *Education Systems in Historical, Cultural, and Sociological Perspectives* (The Future of Education Research ; 1).

Tschannen-Moran, M., & Gareis, C. R. (2004). Principal's sense of efficacy: Assessing a promising construct. *Journal of Educational Administration, 42*, 573-585.

Tucker, L., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38*(1), 1-10. doi:10.1007/BF02291170

Tuxford, L., & Bradley, G. (2015). Emotional job demands and emotional exhaustion in teachers. *Educational Psychology, 35*(8), 1-19.

United Nations. (1948). *The Universal Declaration of Human Rights*. Paris: United Nations.

Vallerand, R., Blanchard, C., Mageau, G., Koestner, R., Ratelle, C., Léonard, M., Gagne, M., & Marsolais, J, Ed. (2003). Les Passions de l'Âme: On Obsessive and Harmonious Passion. *Journal of Personality and Social Psychology, 85*(4), 756-767.

Vallerand, R., Paquet, Y., Philippe, F., & Charest, J. (2010). On the Role of Passion for Work in Burnout: A Process Model. *Journal of Personality, 78*(1), 289-312.

Vallerand, Templin, Hasenau, & Riley-Doucet. (2007). Factors that affect functional status in patients with cancer-related pain. *Pain, 132*(1), 82-90.

Victoria Government. (2020, June 15). *Principal Health and Wellbeing*. Victoria Government. https://www2.education.vic.gov.au/pal/principal-health-and-wellbeing/advice

Ware, H., & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *Journal of Educational Research, 7*, 303-310.

Warr, P. (1994). *Age and employment.* In H. C. Triandis, M. D. Dunnette, & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (p. 485–550). Consulting Psychologists Press.

Wayne, S. J., Shore, L. M. and Liden, R. C. (1997). Perceived organizational support and leader-member exchange: A social exchange perspective. *Academy of Management Journal*, 40: 82–111.

Weiner, J., & Woulfin, S. (2017). Controlled autonomy: Novice principals' schema for district control and school autonomy. *Journal of Educational Administration, 55*(3), 334-350.

Weiss, H., & Merio, K. (2015). *Job Satisfaction.* Georgia Institute of Technology, Atlanta, GA. USA.

Whitener, E. M. (2001). Do "high commitment" human resource practices affect employee commitment? A cross-level analysis using hierarchical linear modeling. *Journal of Management*, 27: 515–535.

Yin, H. (2015). The effect of teachers' emotional labour on teaching satisfaction: Moderation of emotional intelligence. *Teachers and Teaching, 21*(7), 1-22.

Yin., Huang., & Lee. (2017). Choose your strategy wisely: Examining the relationships between emotional labor in teaching and teacher efficacy in Hong Kong primary schools. *Teaching and Teacher Education, 66*, 127-136.

Zábrodská., Mudrák., Šolcová., Květon., Blatný., & Machovcová. (2018). Burnout among university faculty: The central role of work – family conflict. *Educational Psychology, 38*(6), 800-819.

Zapf, D. (2002). Emotion work and psychological well-being: A review of the literature and

some conceptual considerations. *Human Resource Management Review, 12*(2), 237-268.

Appendix 1

School Leader Autonomy Latent Variables and Items

Sub Latent Variable	Item
Staff in our Schools	- Managing teaching staff
	- Managing other staff
Managing Resources	- Managing school budgets
	- Managing school resources
Making Decisions	- Providing strategic focus and direction to colleagues
	- Leading the development of teaching and learning
Working Locally	- Building relationships with community agencies
	- Working with parents

Note: The sub latent autonomy variables reflect the key areas of expanded autonomy identified in the Local Schools Local Decisions Initiative (NSW Department of Education, 2017). Survey respondents were asked to what extent they had autonomy over each responsibility on a 1 (no autonomy) to 10 (complete autonomy) Likert scale.

School Leader Autonomy Latent Variable SEM Psychometric Fit Indices

χ^2	*df*	CFI	TLI	RMSEA	SRMR
119.07	16	0.991	0.984	0.050	0.016

Note: These fit indices were derived using the 2015 Principal Survey data.

Appendix 2

Amended Passion Scale Items

Passion Criteria/General Passion	Harmonious Passion	Obsessive Passion
I spend a lot of time doing my work.	My work is in harmony with the other activities in my life.	I have difficulties controlling my urges to do my work.
I like my work.	The new things that I discover with my work allow me to appreciate it even more.	I have almost an obsessive feeling for my work.
My work is important to me.	My work reflects the qualities I like about myself.	My work is the only thing that really captivates me.
My work is a passion for me.	My work allows me to live a variety of experiences.	If I could, I would only do my work.
My work is part of who I am.	My work is well integrated into my life.	My work is so exciting that I sometimes lose control over it.
	My work is in harmony with other things that are part of me.	I have the impression that my work controls me.

Source: Vallerand et al., 2003

Appendix 3

NSW GOVERNMENT Education & Communities

Local Schools, Local Decisions

Report card 2012-2016

26467_RC_270217

Reform area	What we promised	What's being delivered	Achieved
Making decisions	**What:** Schools make most decisions with the move to greater local decision-making authority. **When:** 2013–14	New model of support for local decision making.	2013 ✓
		School support strategy to strengthen community consultation and school financial management successfully delivered.	2014 ✓
Staff in our schools	**What:** Schools choose how they fill at least every second vacancy once incentive transfers and Aboriginal employment applicants are placed. **When:** 2012	Staffing Agreement was negotiated providing all NSW public schools with the opportunity to recruit every second classroom teacher vacancy once incentive transfers and Aboriginal applicants are placed. Schools have greater flexibility to create temporary positions that target whole of school programs. School principals now choose how to fill around 60% of all vacancies.	2012 ✓
	What: Schools choose the number and roles of staff and the mix of permanent and temporary staff within their budgets to best meet local needs. **When:** 2012–16	First group of schools (229)* have greater flexibility to make decisions about the best mix of staff to meet the needs of students but continue to operate within guidelines and industrial agreements.	2012 ✓
		First group of schools (229)* have the flexibility to vary the mix of staff.	2013 ✓
		All schools will have greater flexibility to make decisions about the best mix of staff to meet the needs of students.	2016 ✓
	What: Strengthened performance management and professional development for all staff linked to the school plan and professional standards. **When:** 2015	Agreement reached with NSW Teachers Federation in Term 4, 2013. Strengthened and streamlined processes for performance and development are in place for principals, executive teachers and teachers aligned with the national standards.	2013 ✓
		New teacher, executive teacher and principal improvement procedures were published on the Department's website on 14 July 2014 following consultation with key stakeholders.	2014 ✓

Reform area	What we promised	What's being delivered	Achieved
Staff in our schools	**What:** Salary progression is based on attainment of professional standards, rather than years of service. **When:** 2016	Agreement reached with NSW Teachers Federation in Term 4, 2013 to align teacher salaries to the Australian Professional Standards for Teachers from 2016.	2016 ✓
		A standards-based remuneration structure for classroom teachers forms part of the new Teachers' Award with the NSW Teachers Federation. The award was made in the Industrial Relations Commission on 13 May 2014 with effect from 1 January 2015. Existing teachers will transition to the new pay structure from 2016. Full implementation by 2016.	2016 ✓
	What: Streamlined processes enable school leaders to swiftly identify and respond to underperformance for permanent teachers, executive teachers and principals. **When:** July 2014	Agreement reached with NSW Teachers Federation in Term 3, 2014 to implement a new improvement process for teachers, executive teachers and principals to manage underperformance. The new procedures reduce the previous lengthy process of resolving underperformance from around six months to 10 weeks. It will consist of five weeks support and guidance and a further five week assessment period if required.	2014 ✓
	What: Streamlined processes enable school leaders to swiftly identify and respond to underperformance for probationary and temporary teachers. **When:** January 2015	Agreement reached with NSW Teachers Federation in Term 3, 2014 to implement a new improvement process for probationary teachers. New Probationary Teacher improvement processes were published on 22 August 2014.	2014 ✓
		The new Temporary Teacher improvement processes were published on 31 October 2014.	2014 ✓
		Full implementation by 2015.	2015 ✓
	What: Principal salary and classification are linked to school complexity not just student numbers. **When:** 2016	Agreement reached with NSW Teachers Federation in 2013 for a new principal classification.	2013 ✓
		Principals, including teaching principals or associate principals, will be paid more if they lead more complex schools. Full implementation by 2016.	2016 ✓
	What: School leaders have leadership and management credentials before being eligible for leadership positions. **When:** 2016	The online credential assists leaders to be well supported to meet their accountabilities with regard to departmental policies, documents, processes and procedures.	2016 ✓
	What: Schools can offer local incentives within their budgets. **When:** 2012	All NSW public schools have the capacity to determine appropriate local incentives within their budget to either attract or retain staff.	2012 ✓
	What: Schools manage more than 70% of the total public school education budget under a new Resource Allocation Model (RAM). **When:** 2016	Principals have oversight of their total budget with the 2016 RAM report.	2016 ✓

Reform area	What we promised	What's being delivered	Achieved
Managing resources	**What:** Schools manage a budget that separates staffing and non-staffing funding. **When:** 2014	Progressive implementation with the first group of schools (229)* receiving a total school budget allocation with separate staffing and operational funding.	2014 ✓
		An accredited course has been developed for NSW public school leaders to assist decision making in core school financial management.	2014 ✓
		An accredited course has been developed for NSW public school leaders in strategic financial management. This course enables principals to deliver a comprehensive school plan and annual report connected to student learning outcomes and resources.	2014 ✓
	What: Funding for schools reflects complexity as well as student numbers. **When:** 2014	$300 million has been allocated through two new equity loadings for Aboriginal background and socio-economic background. Targeted (individual student) funding delivered through new Resource Allocation Model (RAM) to NSW public schools.	2014 ✓
		Of this funding, the needs based funding allocation delivered $250 million to all NSW public schools to meet additional learning needs of more than 390,000 students from low socio-economic backgrounds.	2014 ✓
		Of this funding, the needs based funding allocation delivered more that $48 million to NSW public schools to meet additional learning needs of all students with an Aboriginal background. Funding provided to support all 49,000 Aboriginal students in 1,996 schools.	2014 ✓
		The Family Occupation and Education Index (FOEI) developed to measure the socio-economic status of every NSW public school.	2013 ✓
		The new English as an Additional Language or Dialect (EALD) Learning Progression Tool has been used to identify student needs for the English Language Proficiency loading.	2014 ✓
		New equity loadings have been developed for low level adjustment for disability and English language proficiency.	2014 ✓
		Schools are being funded through the RAM for 5 loadings: Aboriginal background, Socio-economic background, low level adjustment for disability, English language proficiency and location loading.	2014 ✓
	What: Funding changes gradually based on student numbers and complexity. **When:** 2016	The base school allocation components are under development as part of the phased implementation of the RAM.	2016 ✓
		New location loading has been developed as the first component of the base school allocation for RAM.	2014 ✓
	What: Schools can manage annual planned maintenance to fit in with educational needs. **When:** 2012	All NSW public school principals have more say over decisions such as painting, replacing carpets and repairing roofs.	2012 ✓
	What: Removal of restrictions for some equity grants. **When:** 2012	Restrictions removed on some specific tied grants worth $5,000.	2012 ✓
	What: Combining some equity grants. **When:** 2012	NSW public schools that received equity tied grants have greater flexibility in the use of funding to support the engagement and learning needs of students in their local context.	2012 ✓

Reform area	What we promised	What's being delivered	Achieved
Reducing red tape	**What:** A comprehensive school plan and annual report connected to student learning outcomes and budget. **When:** 2015	School planning information was released to all NSW public schools in Term 3, 2014.	2014 ✓
		A new online tool is under development for schools to streamline school planning processes.	2015 ✓
	What: Fewer and simpler policies organised around the work of schools. **When:** 2012–14	Under Stage 1, 120 existing policy related documents were deleted, merged or identified for amalgamation or review and a refreshed intranet policy page provided easier access.	2012 ✓
		A procedure has been established to ensure that new policies are approved and there is a regular review process for all policies.	2014 ✓
	What: New information systems and streamlined processes, including finance and human resources transactions. **When:** 2015	New budget planning tool introduced to first group of schools (229)* to support increased authority to manage staffing and finance.	2013 ✓
		Further development underway to provide all NSW public schools with the tools to better manage increased authority over staffing and finances.	2015 ✓
Working locally	**What:** Schools have opportunities to jointly create administrative, management and leadership structures across schools. **When:** 2015	All NSW public schools have some capacity to jointly create administrative, management and leadership structures across schools, depending on their needs and budget.	2013 ✓
		Further enhancements are in development.	2015 ✓
	What: New processes and templates make it easier for schools to share staff and resources. **When:** 2015	Planning is underway to provide all NSW public schools with access to new processes and tools to facilitate sharing of staff and resources.	2015 ✓
	What: Principals free to make more local decisions for purchases up to $5,000. **When:** 2012	Changed procurement rules enable all principals to make decisions for purchases up to $5000.	2012 ✓
	What: Local contractors will have more opportunities to gain work in local schools. **When:** 2012	All NSW public schools can buy locally and build relationships with local businesses and service providers.	2012 ✓
	What: Schools choose from a menu of community consultation strategies to suit their contexts. **When:** 2013–14	All NSW public schools have access to resources to help build stronger family and community partnerships. These include a principal's guide and consultative decision-making resource.	2013 ✓
		An additional resource to strengthen consultative decision making has been developed and is being used by Directors Public Schools NSW to support principals. This resource enhances principals' capacity to develop a comprehensive school plan in consultation with the school community.	2014 ✓

*The 229 schools that participated in the Empowering Local Schools National Partnership.

Appendix 4

ELS Global Autonomy – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.951	1.213	1.608	.108
Treatment Period	.025	.018	1.408	.159
ELS	.477	.488	.977	.329
DID	.097	.031	3.149	**.002**
State - NSW	-.096	.807	-.120	.905
State - NT	.277	.811	.341	.733
State - QLD	-.181	.488	-.370	.711
State - SA	2.703	1.224	2.208	**.027**
State - TAS	-1.370	.853	-1.606	.108
State - VIC	-.297	.419	-.710	.478
State - WA	-.314	.325	-.964	.335
SEIFA 2	-1.651	.915	-1.805	.071
SEIFA 3	-2.699	.739	-3.653	**.000**
SEIFA 4	-1.412	.501	-2.816	**.005**
SEIFA 5	-.964	.530	-1.817	.069
SEIFA 6	-2.490	.855	-2.912	**.004**
SEIFA 7	.372	.791	.471	.638
SEIFA 8	-1.818	.578	-3.145	**.002**
SEIFA 9	-1.029	.578	-1.780	.075
SEIFA 10	-1.481	.757	-1.958	.050
Gender	.258	.488	.528	.597
School type Combined	-1.066	.840	-1.269	.204
School type Primary	.097	.840	.116	.908
School type Secondary	-2.719	.927	-2.932	**.003**
School type Special	1.220	.876	1.392	.164
Remoteness Major Cities	-.460	.478	-.963	.336
Remoteness Outer Regional	-.372	.430	-.865	.387
Remoteness Remote	-1.180	.824	-1.433	.152
Remoteness Very Remote	-.248	.868	-.286	.775

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant *p* values (below .05) are in bold.

ELS Global Autonomy – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.925	1.654	1.164	.245
Treatment Period	.009	.019	.457	.648
ELS	-1.624	.485	-3.346	**.001**
DID	.149	.046	3.208	**.001**
State - NSW	-2.797	1.232	-2.271	**.023**
State - NT	.023	.999	.023	.982
State - QLD	.079	.683	.116	.908
State - SA	1.892	1.199	1.577	.115
State - TAS	.947	1.511	.627	.531
State - VIC	-.377	.664	-.568	.570
State - WA	-.269	.558	-.482	.630
SEIFA 2	.819	.999	.819	.413
SEIFA 3	2.427	1.694	1.433	.152
SEIFA 4	1.340	1.222	1.097	.273
SEIFA 5	1.537	1.304	1.179	.239
SEIFA 6	.140	.875	.161	.872
SEIFA 7	2.574	.980	2.626	**.009**
SEIFA 8	.841	1.304	.645	.519
SEIFA 9	1.469	1.211	1.213	.225
SEIFA 10	1.767	1.221	1.446	.148
Gender	.272	.483	.564	.573
School type Combined	-.606	1.156	-.524	.601
School type Primary	-2.281	.966	-2.361	**.018**
School type Secondary	-2.614	1.063	-2.460	**.014**
School type Special	-1.045	1.074	-.973	.331
Remoteness Major Cities	-.811	.664	-1.222	.222
Remoteness Outer Regional	-.413	.441	-.937	.349
Remoteness Remote	-3.962	1.750	-2.264	**.024**
Remoteness Very Remote	-.453	1.127	-.402	.688

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Global Autonomy – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.766	1.358	.564	.573
Treatment Period	-.028	.018	-1.580	.114
ELS	.612	.550	1.112	.266
DID	.070	.036	1.965	**.049**
State - NSW	1.268	1.001	1.266	.206
State - NT	.843	.855	.986	.324
State - QLD	-.250	.572	-.436	.663
State - SA	2.289	1.373	1.668	.095
State - TAS	-1.405	.860	-1.632	.103
State - VIC	-.370	.414	-.895	.371
State - WA	-.314	.317	-.988	.323
SEIFA 2	-3.126	1.142	-2.737	**.006**
SEIFA 3	-2.796	.758	-3.689	**.000**
SEIFA 4	-1.398	.526	-2.656	**.008**
SEIFA 5	-1.004	.545	-1.841	.066
SEIFA 6	-3.042	.909	-3.347	**.001**
SEIFA 7	.061	.852	.072	.943
SEIFA 8	-1.858	.590	-3.151	**.002**
SEIFA 9	-1.134	.611	-1.856	.063
SEIFA 10	-1.452	.822	-1.766	.077
Gender	.389	.550	.708	.479
School type Combined	.296	1.001	.296	.767
School type Primary	1.460	1.074	1.360	.174
School type Secondary	-1.137	.828	-1.374	.169
School type Special	2.657	1.147	2.318	**.021**
Remoteness Major Cities	-.531	.471	-1.128	.259
Remoteness Outer Regional	-.496	.426	-1.164	.244
Remoteness Remote	-1.318	.867	-1.520	.128
Remoteness Very Remote	-.490	.914	-.536	.592

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Decision Making – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.650	1.164	1.417	.156
Treatment Period	.065	.024	2.718	**.007**
ELS	.656	.660	.994	.320
DID	.119	.042	2.866	**.004**
State - NSW	-1.813	.794	-2.285	**.022**
State - NT	-3.046	.959	-3.175	**.002**
State - QLD	-1.736	.908	-1.912	.056
State - SA	-.833	.696	-1.196	.232
State - TAS	-2.574	1.009	-2.551	**.011**
State - VIC	.104	1.033	.100	.920
State - WA	-1.480	.696	-2.127	**.033**
SEIFA 2	-.950	.730	-1.302	.193
SEIFA 3	1.744	1.033	1.689	.091
SEIFA 4	.183	.661	.277	.782
SEIFA 5	-.922	.824	-1.120	.263
SEIFA 6	.300	.623	.482	.630
SEIFA 7	-2.894	1.009	-2.870	**.004**
SEIFA 8	1.075	.730	1.473	.141
SEIFA 9	-.530	.623	-.852	.394
SEIFA 10	-.599	.582	-1.029	.303
Gender	-1.240	1.123	-1.104	.270
School type Combined	-.291	1.033	-.282	.778
School type Primary	-.021	.122	-.168	.867
School type Secondary	-.124	.122	-1.013	.311
School type Special	.043	.130	.329	.742
Remoteness Major Cities	.026	.020	1.295	.195
Remoteness Outer Regional	-.018	.026	-.698	.485
Remoteness Remote	.014	.046	.310	.756
Remoteness Very Remote	-.066	.057	-1.152	.249

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Decision Making – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	2.657	2.198	1.209	.227
Treatment Period	.047	.025	1.850	.064
ELS	-2.120	.645	-3.287	**.001**
DID	.175	.061	2.851	**.004**
State - NSW	-2.774	1.636	-1.695	.090
State - NT	.314	1.328	.236	.813
State - QLD	.372	.908	.410	.682
State - SA	3.343	1.594	2.098	**.036**
State - TAS	.341	2.007	.170	.865
State - VIC	-.166	.882	-.189	.850
State - WA	-.080	.741	-.108	.914
SEIFA 2	.053	1.328	.040	.968
SEIFA 3	2.825	2.251	1.255	.209
SEIFA 4	.694	1.623	.428	.669
SEIFA 5	.976	1.733	.563	.573
SEIFA 6	-.524	1.162	-.450	.652
SEIFA 7	2.748	1.302	2.111	**.035**
SEIFA 8	1.196	1.733	.690	.490
SEIFA 9	1.224	1.609	.761	.447
SEIFA 10	1.409	1.623	.868	.386
Gender	.107	.642	.166	.868
School type Combined	-.840	1.536	-.547	.585
School type Primary	-2.330	1.284	-1.815	.070
School type Secondary	-3.275	1.412	-2.320	**.020**
School type Special	-1.705	1.427	-1.195	.232
Remoteness Major Cities	-1.451	.882	-1.646	.100
Remoteness Outer Regional	-.736	.586	-1.255	.209
Remoteness Remote	-4.095	2.325	-1.761	.078
Remoteness Very Remote	-.836	1.497	-.558	.577

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Decision Making – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.819	1.829	.448	.654
Treatment Period	-.013	.024	-.545	.586
ELS	.906	.741	1.224	.221
DID	.102	.048	2.105	**.035**
State - NSW	1.230	1.349	.912	.362
State - NT	1.010	1.152	.877	.381
State - QLD	-.159	.771	-.206	.836
State - SA	2.220	1.849	1.201	.230
State - TAS	-1.514	1.159	-1.306	.192
State - VIC	-.271	.557	-.486	.627
State - WA	-.094	.427	-.220	.826
SEIFA 2	-3.460	1.538	-2.249	**.025**
SEIFA 3	-3.371	1.021	-3.301	**.001**
SEIFA 4	-1.913	.709	-2.698	**.007**
SEIFA 5	-.979	.734	-1.332	.183
SEIFA 6	-3.316	1.224	-2.708	**.007**
SEIFA 7	-.516	1.147	-.450	.653
SEIFA 8	-1.626	.794	-2.048	**.041**
SEIFA 9	-1.280	.823	-1.556	.120
SEIFA 10	-1.366	1.107	-1.234	.217
Gender	.339	.741	.458	.647
School type Combined	.402	1.348	.298	.765
School type Primary	1.625	1.447	1.123	.261
School type Secondary	-1.163	1.115	-1.043	.297
School type Special	2.572	1.544	1.665	.096
Remoteness Major Cities	-.707	.634	-1.116	.265
Remoteness Outer Regional	-.744	.574	-1.297	.195
Remoteness Remote	-1.390	1.167	-1.191	.234
Remoteness Very Remote	-.771	1.232	-.626	.531

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Managing Staff – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.318	1.827	.721	.471
Treatment Period	-.023	.027	-.865	.387
ELS	.476	.735	.647	.518
DID	.139	.046	3.012	**.003**
State - NSW	.775	1.216	.638	.524
State - NT	1.118	1.221	.915	.360
State - QLD	.004	.735	.005	.996
State - SA	3.714	1.843	2.015	**.044**
State - TAS	-1.020	1.284	-.794	.427
State - VIC	.216	.630	.342	.732
State - WA	-.202	.490	-.413	.680
SEIFA 2	-2.133	1.378	-1.548	.122
SEIFA 3	-2.595	1.113	-2.332	**.020**
SEIFA 4	-1.513	.755	-2.004	**.045**
SEIFA 5	-1.166	.799	-1.460	.144
SEIFA 6	-3.315	1.288	-2.574	**.010**
SEIFA 7	.698	1.191	.586	.558
SEIFA 8	-1.650	.870	-1.896	.058
SEIFA 9	-.840	.871	-.965	.335
SEIFA 10	-1.871	1.139	-1.642	.101
Gender	.637	.735	.867	.386
School type Combined	-.888	1.264	-.703	.482
School type Primary	.455	1.264	.360	.719
School type Secondary	-2.883	1.397	-2.064	**.039**
School type Special	1.203	1.319	.912	.362
Remoteness Major Cities	-.454	.719	-.631	.528
Remoteness Outer Regional	-.245	.648	-.379	.705
Remoteness Remote	-1.947	1.240	-1.570	.117
Remoteness Very Remote	-.142	1.308	-.109	.914

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Managing Staff – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.939	2.500	.775	.438
Treatment Period	-.062	.029	-2.156	**.031**
ELS	-2.517	.734	-3.431	**.001**
DID	.202	.070	2.899	**.004**
State - NSW	-4.275	1.861	-2.297	**.022**
State - NT	.394	1.511	.261	.794
State - QLD	-.002	1.032	-.002	.998
State - SA	1.720	1.813	.949	.343
State - TAS	2.202	2.283	.965	.335
State - VIC	-.508	1.003	-.506	.613
State - WA	-.413	.843	-.490	.624
SEIFA 2	1.946	1.510	1.289	.198
SEIFA 3	5.163	2.560	2.017	**.044**
SEIFA 4	3.212	1.847	1.740	.082
SEIFA 5	2.989	1.971	1.517	.129
SEIFA 6	.849	1.322	.642	.521
SEIFA 7	4.550	1.481	3.072	**.002**
SEIFA 8	2.457	1.971	1.247	.213
SEIFA 9	3.108	1.830	1.698	.090
SEIFA 10	3.462	1.846	1.875	.061
Gender	.674	.730	.923	.356
School type Combined	-.233	1.748	-.133	.894
School type Primary	-3.558	1.460	-2.437	**.015**
School type Secondary	-2.981	1.606	-1.856	.064
School type Special	-2.296	1.623	-1.414	.157
Remoteness Major Cities	-1.001	1.003	-.998	.318
Remoteness Outer Regional	-.396	.667	-.594	.552
Remoteness Remote	-7.052	2.645	-2.666	**.008**
Remoteness Very Remote	-.741	1.703	-.435	.664

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Managing Staff – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.338	2.055	.165	.869
Treatment Period	-.019	.027	-.690	.490
ELS	.696	.833	.836	.403
DID	.100	.054	1.841	.066
State - NSW	1.966	1.516	1.297	.195
State - NT	1.596	1.294	1.233	.218
State - QLD	-.190	.866	-.219	.826
State - SA	2.867	2.078	1.380	.168
State - TAS	-.937	1.303	-.719	.472
State - VIC	.124	.626	.198	.843
State - WA	-.202	.480	-.421	.674
SEIFA 2	-3.468	1.729	-2.006	**.045**
SEIFA 3	-2.670	1.148	-2.326	**.020**
SEIFA 4	-1.538	.797	-1.930	.054
SEIFA 5	-1.228	.825	-1.488	.137
SEIFA 6	-3.819	1.376	-2.775	**.006**
SEIFA 7	.079	1.289	.061	.951
SEIFA 8	-1.713	.893	-1.919	.055
SEIFA 9	-.926	.925	-1.001	.317
SEIFA 10	-1.736	1.244	-1.395	.163
Gender	.848	.833	1.019	.308
School type Combined	.294	1.515	.194	.846
School type Primary	1.642	1.626	1.010	.312
School type Secondary	-1.253	1.253	-1.000	.317
School type Special	2.464	1.736	1.420	.156
Remoteness Major Cities	-.539	.713	-.757	.449
Remoteness Outer Regional	-.365	.645	-.566	.571
Remoteness Remote	-2.217	1.312	-1.690	.091
Remoteness Very Remote	-.497	1.384	-.359	.719

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Managing Resources – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.693	1.537	1.101	.271
Treatment Period	.062	.023	2.740	**.006**
ELS	.318	.619	.515	.607
DID	.098	.039	2.525	**.012**
State - NSW	.234	1.023	.229	.819
State - NT	.663	1.028	.645	.519
State - QLD	.324	.618	.524	.601
State - SA	3.182	1.551	2.051	**.040**
State - TAS	-1.160	1.081	-1.073	.283
State - VIC	.011	.531	.021	.983
State - WA	-.045	.412	-.108	.914
SEIFA 2	-1.822	1.159	-1.571	.116
SEIFA 3	-2.949	.937	-3.149	**.002**
SEIFA 4	-1.443	.635	-2.272	**.023**
SEIFA 5	-1.053	.672	-1.567	.117
SEIFA 6	-2.554	1.084	-2.357	**.018**
SEIFA 7	-.167	1.002	-.166	.868
SEIFA 8	-2.081	.733	-2.840	**.005**
SEIFA 9	-1.235	.733	-1.686	.092
SEIFA 10	-1.479	.959	-1.542	.123
Gender	.237	.619	.383	.702
School type Combined	-.991	1.064	-.932	.352
School type Primary	.252	1.064	.237	.813
School type Secondary	-2.686	1.175	-2.286	**.022**
School type Special	1.506	1.110	1.357	.175
Remoteness Major Cities	-.565	.605	-.933	.351
Remoteness Outer Regional	-.588	.545	-1.078	.281
Remoteness Remote	-1.135	1.044	-1.088	.277
Remoteness Very Remote	-.365	1.101	-.332	.740

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Managing Resources – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.544	2.112	.258	.797
Treatment Period	.051	.024	2.079	**.038**
ELS	-1.279	.620	-2.065	**.039**
DID	.137	.059	2.315	**.021**
State - NSW	-1.130	1.572	-.718	.473
State - NT	.840	1.276	.658	.510
State - QLD	.941	.872	1.080	.280
State - SA	2.811	1.531	1.836	.066
State - TAS	1.428	1.929	.740	.459
State - VIC	.578	.847	.682	.495
State - WA	.284	.712	.399	.690
SEIFA 2	.248	1.276	.194	.846
SEIFA 3	1.419	2.162	.656	.512
SEIFA 4	.568	1.560	.364	.716
SEIFA 5	1.038	1.665	.624	.533
SEIFA 6	-.233	1.117	-.209	.835
SEIFA 7	1.134	1.251	.907	.365
SEIFA 8	.343	1.665	.206	.837
SEIFA 9	.900	1.546	.582	.561
SEIFA 10	1.247	1.559	.800	.424
Gender	.247	.617	.401	.689
School type Combined	-.304	1.476	-.206	.837
School type Primary	-1.246	1.233	-1.010	.313
School type Secondary	-2.060	1.356	-1.519	.129
School type Special	-.237	1.371	-.173	.863
Remoteness Major Cities	-.670	.847	-.791	.429
Remoteness Outer Regional	-.544	.563	-.967	.334
Remoteness Remote	-2.015	2.234	-.902	.367
Remoteness Very Remote	.040	1.439	.028	.978

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Managing Resources – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.341	1.729	.197	.844
Treatment Period	-.074	.023	-3.239	**.001**
ELS	.548	.700	.782	.434
DID	.074	.046	1.614	.107
State - NSW	1.891	1.275	1.483	.138
State - NT	1.486	1.089	1.365	.172
State - QLD	.234	.729	.321	.748
State - SA	2.881	1.748	1.648	.099
State - TAS	-1.332	1.096	-1.215	.224
State - VIC	-.116	.527	-.221	.825
State - WA	-.045	.404	-.111	.912
SEIFA 2	-3.661	1.455	-2.517	**.012**
SEIFA 3	-3.136	.966	-3.247	**.001**
SEIFA 4	-1.452	.671	-2.166	**.030**
SEIFA 5	-1.108	.694	-1.596	.111
SEIFA 6	-3.384	1.158	-2.923	**.003**
SEIFA 7	-.305	1.085	-.281	.779
SEIFA 8	-2.136	.751	-2.844	**.004**
SEIFA 9	-1.430	.778	-1.838	.066
SEIFA 10	-1.444	1.047	-1.379	.168
Gender	.466	.700	.665	.506
School type Combined	.665	1.275	.522	.602
School type Primary	1.909	1.368	1.395	.163
School type Secondary	-1.040	1.054	-.987	.324
School type Special	3.259	1.460	2.232	**.026**
Remoteness Major Cities	-.692	.600	-1.154	.248
Remoteness Outer Regional	-.762	.542	-1.404	.160
Remoteness Remote	-1.352	1.104	-1.225	.221
Remoteness Very Remote	-.776	1.165	-.667	.505

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Working with the Community – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	3.711	1.382	2.686	**.007**
Treatment Period	-.010	.020	-.503	.615
ELS	.692	.556	1.244	.213
DID	.081	.035	2.310	**.021**
State - NSW	-1.109	.920	-1.206	**.228**
State - NT	-.219	.923	-.237	.813
State - QLD	-1.181	.556	-2.125	**.034**
State - SA	1.586	1.394	1.138	.255
State - TAS	-2.530	.972	-2.604	**.009**
State - VIC	-1.212	.477	-2.541	**.011**
State - WA	-.961	.370	-2.595	**.009**
SEIFA 2	-1.859	1.042	-1.784	.074
SEIFA 3	-3.006	.842	-3.571	**.000**
SEIFA 4	-1.495	.571	-2.618	**.009**
SEIFA 5	-1.162	.604	-1.925	.054
SEIFA 6	-2.829	.974	-2.905	**.004**
SEIFA 7	.673	.901	.748	.455
SEIFA 8	-2.601	.658	-3.950	**.000**
SEIFA 9	-1.155	.658	-1.755	.079
SEIFA 10	-1.325	.862	-1.537	.124
Gender	.329	.556	.591	.555
School type Combined	-1.760	.956	-1.841	.066
School type Primary	-.416	.956	-.435	.663
School type Secondary	-3.256	1.056	-3.082	**.002**
School type Special	1.437	.998	1.440	.150
Remoteness Major Cities	-.707	.544	-1.300	.194
Remoteness Outer Regional	-.592	.490	-1.207	.227
Remoteness Remote	-1.477	.938	-1.574	.116
Remoteness Very Remote	-.505	.989	-.511	.610

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Working with the Community – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	3.407	1.869	1.823	.068
Treatment Period	-.019	.022	-.873	.383
ELS	-1.783	.548	-3.251	**.001**
DID	.146	.052	2.794	**.005**
State - NSW	-4.696	1.391	-3.375	**.001**
State - NT	-.891	1.129	-.789	.430
State - QLD	-1.109	.772	-1.437	.151
State - SA	.592	1.355	.437	.662
State - TAS	.468	1.707	.274	.784
State - VIC	-1.574	.750	-2.099	**.036**
State - WA	-1.078	.630	-1.711	.087
SEIFA 2	1.547	1.129	1.370	.171
SEIFA 3	2.644	1.914	1.381	.167
SEIFA 4	1.871	1.380	1.356	.175
SEIFA 5	2.259	1.473	1.534	.125
SEIFA 6	.716	.988	.725	.469
SEIFA 7	3.326	1.107	3.004	**.003**
SEIFA 8	.330	1.473	.224	.823
SEIFA 9	1.946	1.368	1.422	.155
SEIFA 10	2.245	1.380	1.627	.104
Gender	.336	.546	.615	.539
School type Combined	-.971	1.306	-.743	.458
School type Primary	-3.163	1.091	-2.898	**.004**
School type Secondary	-2.908	1.200	-2.422	**.015**
School type Special	-.761	1.213	-.628	.530
Remoteness Major Cities	-.828	.750	-1.105	.269
Remoteness Outer Regional	-.551	.498	-1.105	.269
Remoteness Remote	-5.045	1.977	-2.552	**.011**
Remoteness Very Remote	-.734	1.273	-.577	.564

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Autonomy Working with the Community – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	2.474	1.549	1.597	.110
Treatment Period	-.030	.020	-1.485	.138
ELS	.685	.627	1.092	.275
DID	.049	.041	1.206	.228
State - NSW	.151	1.142	.133	.895
State - NT	.200	.975	.205	.838
State - QLD	-1.057	.653	-1.619	.106
State - SA	1.619	1.566	1.034	.301
State - TAS	-2.478	.982	-2.524	**.012**
State - VIC	-1.252	.472	-2.652	**.008**
State - WA	-.961	.362	-2.655	**.008**
SEIFA 2	-3.112	1.303	-2.389	**.017**
SEIFA 3	-3.069	.865	-3.548	**.000**
SEIFA 4	-1.351	.601	-2.249	**.025**
SEIFA 5	-1.118	.622	-1.796	.072
SEIFA 6	-3.104	1.037	-2.993	**.003**
SEIFA 7	.667	.972	.687	.492
SEIFA 8	-2.556	.673	-3.799	**.000**
SEIFA 9	-1.227	.697	-1.761	.078
SEIFA 10	-1.404	.938	-1.497	.134
Gender	.319	.627	.508	.611
School type Combined	-.502	1.142	-.439	.660
School type Primary	.844	1.225	.689	.491
School type Secondary	-1.887	.944	-1.999	**.046**
School type Special	2.756	1.308	2.107	**.035**
Remoteness Major Cities	-.746	.537	-1.388	.165
Remoteness Outer Regional	-.728	.486	-1.498	.134
Remoteness Remote	-1.388	.989	-1.404	.160
Remoteness Very Remote	-.488	1.043	-.468	.640

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Global Autonomy – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.561	.797	1.958	.051
Treatment Period	-.026	.058	-.453	.651
LSLD	-.654	.788	-.830	.407
DID	.231	.074	3.098	**.002**
SEIFA 2	-.252	.415	-.607	.544
SEIFA 3	-.323	.678	-.477	.634
SEIFA 4	-.910	.887	-1.026	.305
SEIFA 5	-1.189	.635	-1.873	.061
SEIFA 6	.141	.679	.208	.836
SEIFA 7	-.323	.499	-.647	.518
SEIFA 8	-1.363	.615	-2.217	**.027**
SEIFA 9	-.364	.474	-.768	.443
SEIFA 10	-.041	.320	-.128	.898
Gender	-.918	1.046	-.878	.380
School type Combined	-1.679	.679	-2.475	**.014**
School type Primary	-.494	.554	-.892	.373
School type Secondary	-.704	.919	-.766	.444
Remoteness Major Cities	.576	.554	1.040	.299
Remoteness Outer Regional	.908	.415	2.186	**.029**
Remoteness Remote	-1.463	1.046	-1.399	.162
Remoteness Very Remote	.163	.797	.205	.838

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Autonomy Decision Making – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.805	1.093	1.651	.099
Treatment Period	-.056	.079	-.706	.480
LSLD	-2.116	1.080	-1.959	.050
DID	.302	.102	2.958	**.003**
SEIFA 2	.443	.570	.778	.437
SEIFA 3	-.568	.930	-.611	.541
SEIFA 4	-.601	1.215	-.495	.621
SEIFA 5	-.984	.870	-1.132	.258
SEIFA 6	.792	.930	.851	.395
SEIFA 7	-.894	.685	-1.306	.192
SEIFA 8	-2.024	.843	-2.402	**.016**
SEIFA 9	-.546	.649	-.841	.400
SEIFA 10	-.399	.439	-.908	.364
Gender	-.774	1.433	-.540	.589
School type Combined	-1.414	.930	-1.520	.129
School type Primary	-.148	.759	-.195	.845
School type Secondary	-.361	1.259	-.287	.774
Remoteness Major Cities	1.412	.759	1.860	.063
Remoteness Outer Regional	.703	.570	1.235	.217
Remoteness Remote	-2.819	1.433	-1.966	.050
Remoteness Very Remote	-.330	1.093	-.302	.763

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Autonomy Managing Staff – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	2.071	1.251	1.656	.098
Treatment Period	-.134	.090	-1.484	.138
LSLD	-.893	1.236	-.723	.470
DID	.386	.117	3.306	**.001**
SEIFA 2	-.621	.652	-.953	.341
SEIFA 3	-.686	1.064	-.644	.520
SEIFA 4	-1.110	1.391	-.798	.425
SEIFA 5	-1.607	.996	-1.614	.107
SEIFA 6	.072	1.064	.067	.946
SEIFA 7	-.660	.783	-.842	.400
SEIFA 8	-1.956	.964	-2.028	**.043**
SEIFA 9	-1.172	.743	-1.577	.115
SEIFA 10	-.288	.503	-.573	.566
Gender	-.942	1.640	-.575	.566
School type Combined	-1.716	1.064	-1.613	.107
School type Primary	-.331	.869	-.381	.703
School type Secondary	-.807	1.441	-.560	.576
Remoteness Major Cities	.714	.869	.822	.411
Remoteness Outer Regional	1.283	.652	1.969	**.049**
Remoteness Remote	-1.900	1.640	-1.159	.247
Remoteness Very Remote	-.247	1.250	-.197	.844

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Autonomy Managing Resources – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.602	.983	.612	.540
Treatment Period	.094	.071	1.326	.185
LSLD	.280	.971	.289	.773
DID	.198	.092	2.161	**.031**
SEIFA 2	-.501	.512	-.977	.329
SEIFA 3	-.534	.836	-.639	.523
SEIFA 4	.320	1.093	.293	.770
SEIFA 5	-.460	.782	-.588	.557
SEIFA 6	-.665	.836	-.795	.427
SEIFA 7	.330	.616	.535	.592
SEIFA 8	-.668	.758	-.882	.378
SEIFA 9	.267	.584	.457	.648
SEIFA 10	.304	.395	.769	.442
Gender	.579	1.289	.449	.654
School type Combined	-1.466	.836	-1.753	.080
School type Primary	-.210	.683	-.308	.758
School type Secondary	-1.755	1.132	-1.550	.122
Remoteness Major Cities	-.283	.683	-.415	.679
Remoteness Outer Regional	.653	.512	1.275	.203
Remoteness Remote	.036	1.289	.028	.978
Remoteness Very Remote	.747	.983	.761	.447

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Autonomy Working with the Community – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	2.100	.896	2.342	**.019**
Treatment Period	-.063	.065	-.977	.329
LSLD	-.481	.886	-.543	.587
DID	.172	.084	2.042	**.041**
SEIFA 2	-.345	.467	-.740	.460
SEIFA 3	.212	.763	.277	.782
SEIFA 4	-2.618	.997	-2.627	**.009**
SEIFA 5	-1.745	.714	-2.445	**.015**
SEIFA 6	.430	.763	.564	.573
SEIFA 7	-.149	.562	-.265	.791
SEIFA 8	-1.467	.691	-2.122	**.034**
SEIFA 9	-.084	.533	-.158	.874
SEIFA 10	-.069	.360	-.191	.849
Gender	-2.632	1.176	-2.239	**.025**
School type Combined	-2.393	.763	-3.136	**.002**
School type Primary	-1.041	.623	-1.672	.095
School type Secondary	.278	1.033	.269	.788
Remoteness Major Cities	.779	.623	1.251	.211
Remoteness Outer Regional	1.352	.467	2.894	**.004**
Remoteness Remote	-1.858	1.176	-1.581	.114
Remoteness Very Remote	.506	.896	.564	.573

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Burnout – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-2.007	1.645	-1.220	.222
Treatment Period	-.073	.024	-3.017	**.003**
ELS	.671	.662	1.013	.311
DID	.013	.042	.304	.761
State - NSW	.570	1.095	.521	.603
State - NT	2.218	1.099	2.018	**.044**
State - QLD	-1.403	.662	-2.121	**.034**
State - SA	-4.680	1.660	-2.820	**.005**
State - TAS	1.410	1.157	1.219	.223
State - VIC	.914	.568	1.610	.107
State - WA	-.151	.441	-.342	.732
SEIFA 2	.165	1.241	.133	.894
SEIFA 3	2.749	1.002	2.744	**.006**
SEIFA 4	1.902	.680	2.798	**.005**
SEIFA 5	1.348	.719	1.874	.061
SEIFA 6	.975	1.159	.841	.400
SEIFA 7	-1.248	1.072	-1.164	.244
SEIFA 8	1.765	.784	2.253	**.024**
SEIFA 9	1.790	.784	2.284	**.022**
SEIFA 10	3.487	1.026	3.399	**.001**
Gender	.847	.662	1.280	.201
School type Combined	1.662	1.139	1.460	.144
School type Primary	.662	1.138	.582	.561
School type Secondary	2.727	1.257	2.168	**.030**
School type Special	-1.715	1.188	-1.444	.149
Remoteness Major Cities	.027	.648	.041	.967
Remoteness Outer Regional	-.585	.584	-1.002	.316
Remoteness Remote	-1.446	1.117	-1.295	.195
Remoteness Very Remote	-.204	1.178	-.173	.863

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Burnout – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.079	2.183	.036	**.971**
Treatment Period	-.084	.025	-3.323	**.001**
ELS	.199	.640	.310	.756
DID	-.041	.061	-.676	.499
State - NSW	-1.282	1.625	-.789	.430
State - NT	-.027	1.319	-.021	.983
State - QLD	-1.746	.901	-1.938	.053
State - SA	-2.029	1.583	-1.282	.200
State - TAS	-1.623	1.993	-.814	.415
State - VIC	-1.172	.876	-1.338	.181
State - WA	-.652	.736	-.886	.376
SEIFA 2	-.807	1.318	-.612	.541
SEIFA 3	1.410	2.235	.631	.528
SEIFA 4	2.007	1.612	1.245	.213
SEIFA 5	.400	1.721	.233	.816
SEIFA 6	-.162	1.154	-.141	.888
SEIFA 7	.479	1.293	.371	.711
SEIFA 8	.386	1.721	.224	.822
SEIFA 9	.294	1.598	.184	.854
SEIFA 10	1.604	1.612	.995	.320
Gender	.860	.638	1.349	.177
School type Combined	2.868	1.526	1.880	.060
School type Primary	1.620	1.275	1.271	.204
School type Secondary	2.176	1.402	1.552	.121
School type Special	.691	1.417	.487	.626
Remoteness Major Cities	-1.181	.876	-1.348	.178
Remoteness Outer Regional	-.389	.582	-.669	.503
Remoteness Remote	-3.641	2.309	-1.577	.115
Remoteness Very Remote	-3.806	1.487	-2.559	**.011**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Burnout – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-1.612	1.860	-.867	.386
Treatment Period	.119	.024	4.861	**.000**
ELS	.370	.753	.491	.624
DID	.041	.049	.842	.400
State - NSW	-.371	1.371	-.270	.787
State - NT	1.867	1.171	1.594	.111
State - QLD	-.943	.784	-1.204	.229
State - SA	-3.695	1.880	-1.965	**.049**
State - TAS	1.673	1.179	1.420	.156
State - VIC	1.076	.567	1.898	.058
State - WA	-.151	.435	-.347	.728
SEIFA 2	1.516	1.564	.969	.332
SEIFA 3	2.834	1.038	2.729	**.006**
SEIFA 4	2.207	.721	3.061	**.002**
SEIFA 5	1.601	.747	2.143	**.032**
SEIFA 6	1.636	1.245	1.314	.189
SEIFA 7	-.632	1.167	-.541	.588
SEIFA 8	2.018	.808	2.499	**.012**
SEIFA 9	1.881	.836	2.249	**.025**
SEIFA 10	3.280	1.126	2.913	**.004**
Gender	.551	.753	.732	.464
School type Combined	.724	1.371	.528	.598
School type Primary	-.279	1.471	-.190	.850
School type Secondary	1.551	1.134	1.369	.171
School type Special	-2.759	1.570	-1.757	.079
Remoteness Major Cities	.186	.645	.289	.773
Remoteness Outer Regional	-.480	.583	-.824	.410
Remoteness Remote	-.829	1.187	-.698	.485
Remoteness Very Remote	.503	1.253	.402	.688

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Job Satisfaction – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.532	1.351	-.394	.694
Treatment Period	.018	.020	.905	.365
ELS	-.113	.543	-.209	.835
DID	.069	.034	2.015	**.044**
State - NSW	1.222	.899	1.360	.174
State - NT	.280	.903	.310	.757
State - QLD	-.183	.543	-.337	.736
State - SA	2.349	1.363	1.724	.085
State - TAS	.202	.950	.213	.832
State - VIC	.325	.466	.698	.485
State - WA	-.172	.362	-.474	.635
SEIFA 2	-.271	1.019	-.266	.790
SEIFA 3	-.723	.823	-.878	.380
SEIFA 4	-.737	.558	-1.321	.187
SEIFA 5	-.458	.590	-.775	.438
SEIFA 6	-1.646	.952	-1.729	.084
SEIFA 7	.406	.880	.461	.645
SEIFA 8	-.721	.644	-1.121	.262
SEIFA 9	-.305	.644	-.474	.635
SEIFA 10	-.550	.842	-.653	.514
Gender	-.173	.543	-.318	.751
School type Combined	-.720	.935	-.770	.441
School type Primary	.288	.935	.308	.758
School type Secondary	-1.185	1.032	-1.148	.251
School type Special	1.266	.975	1.298	.194
Remoteness Major Cities	.676	.532	1.270	.204
Remoteness Outer Regional	1.066	.479	2.225	**.026**
Remoteness Remote	.587	.917	.640	.522
Remoteness Very Remote	1.678	.967	1.735	.083

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Job Satisfaction – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.238	1.764	.701	.483
Treatment Period	.004	.020	.206	.837
ELS	.598	.518	1.155	.248
DID	.038	.049	.780	.435
State - NSW	-1.908	1.314	-1.452	.147
State - NT	-.040	1.066	-.037	.970
State - QLD	.004	.729	.006	.996
State - SA	-.755	1.279	-.590	.555
State - TAS	1.378	1.611	.855	.392
State - VIC	-.251	.708	-.355	.723
State - WA	.124	.595	.208	.835
SEIFA 2	1.333	1.066	1.251	.211
SEIFA 3	.645	1.807	.357	.721
SEIFA 4	1.663	1.303	1.276	.202
SEIFA 5	1.173	1.391	.843	.399
SEIFA 6	-.263	.933	-.282	.778
SEIFA 7	.551	1.045	.528	.598
SEIFA 8	1.196	1.391	.860	.390
SEIFA 9	1.448	1.292	1.121	.262
SEIFA 10	1.729	1.303	1.327	.185
Gender	-.160	.515	-.311	.756
School type Combined	-1.011	1.233	-.819	.413
School type Primary	-2.521	1.031	-2.447	**.014**
School type Secondary	-2.252	1.133	-1.987	**.047**
School type Special	-.941	1.146	-.822	.411
Remoteness Major Cities	-.223	.708	-.315	.752
Remoteness Outer Regional	.975	.470	2.073	**.038**
Remoteness Remote	-1.049	1.867	-.562	.574
Remoteness Very Remote	.331	1.202	.275	.783

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Job Satisfaction – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.120	1.526	-.078	.937
Treatment Period	.030	.020	1.484	.138
ELS	-.006	.618	-.010	.992
DID	.095	.040	2.350	**.019**
State - NSW	1.127	1.126	1.001	.317
State - NT	.390	.961	.406	.685
State - QLD	-.384	.643	-.597	.550
State - SA	1.776	1.543	1.151	.250
State - TAS	-.008	.967	-.008	.993
State - VIC	.293	.465	.630	.529
State - WA	-.172	.357	-.481	.630
SEIFA 2	-.458	1.284	-.356	.722
SEIFA 3	-.886	.852	-1.040	.298
SEIFA 4	-.996	.592	-1.682	.093
SEIFA 5	-.707	.613	-1.153	.249
SEIFA 6	-2.016	1.022	-1.972	**.049**
SEIFA 7	-.184	.958	-.192	.848
SEIFA 8	-.970	.663	-1.464	.143
SEIFA 9	-.459	.687	-.669	.504
SEIFA 10	-.599	.924	-.649	.517
Gender	-.067	.618	-.108	.914
School type Combined	-.814	1.125	-.723	.470
School type Primary	.194	1.207	.161	.872
School type Secondary	-1.022	.930	-1.098	.272
School type Special	1.213	1.289	.941	.347
Remoteness Major Cities	.643	.529	1.215	.224
Remoteness Outer Regional	1.044	.479	2.181	**.029**
Remoteness Remote	.352	.974	.361	.718
Remoteness Very Remote	1.290	1.028	1.255	.210

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Burnout – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.873	1.065	-.820	.412
Treatment Period	-.175	.077	-2.274	**.023**
LSLD	2.896	1.053	2.751	**.006**
DID	-.054	.100	-.546	.585
SEIFA 2	-1.880	.555	-3.388	**.001**
SEIFA 3	-2.944	.906	-3.249	**.001**
SEIFA 4	3.412	1.185	2.881	**.004**
SEIFA 5	1.267	.848	1.494	.136
SEIFA 6	-2.983	.907	-3.290	**.001**
SEIFA 7	1.873	.667	2.808	**.005**
SEIFA 8	2.376	.821	2.893	**.004**
SEIFA 9	2.226	.633	3.517	**.000**
SEIFA 10	-1.467	.428	-3.428	**.001**
Gender	4.925	1.397	3.525	**.000**
School type Combined	.311	.906	.343	.732
School type Primary	-.690	.740	-.933	.351
School type Secondary	-3.429	1.227	-2.795	**.005**
Remoteness Major Cities	-3.256	.740	-4.400	**.000**
Remoteness Outer Regional	-.789	.555	-1.422	.155
Remoteness Remote	4.064	1.397	2.909	**.004**
Remoteness Very Remote	-1.118	1.065	-1.049	.294

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Job Satisfaction – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	2.701	.827	3.266	**.001**
Treatment Period	.004	.060	.065	.948
LSLD	-.836	.817	-1.023	.307
DID	.207	.077	2.677	**.008**
SEIFA 2	-.495	.431	-1.149	.251
SEIFA 3	.914	.704	1.299	.194
SEIFA 4	-3.633	.920	-3.950	**.000**
SEIFA 5	-2.586	.658	-3.928	**.000**
SEIFA 6	1.193	.704	1.695	.090
SEIFA 7	-1.468	.518	-2.833	**.005**
SEIFA 8	-2.081	.638	-3.263	**.001**
SEIFA 9	-1.099	.491	-2.236	**.026**
SEIFA 10	.304	.332	.915	.360
Gender	-3.777	1.085	-3.482	**.001**
School type Combined	-1.850	.704	-2.628	**.009**
School type Primary	-.823	.575	-1.432	.152
School type Secondary	.547	.953	.574	.566
Remoteness Major Cities	1.454	.575	2.531	**.012**
Remoteness Outer Regional	.503	.431	1.167	.243
Remoteness Remote	-3.282	1.085	-3.026	**.003**
Remoteness Very Remote	-.197	.827	-.238	.812

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Global Job Demands – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.594	.546	-1.090	.276
Treatment Period	.007	.008	.920	.358
ELS	.218	.220	.993	.321
DID	.003	.014	.222	.824
State - NSW	-.240	.363	-.661	.509
State - NT	.165	.365	.453	.650
State - QLD	-.455	.219	-2.075	**.038**
State - SA	-1.545	.550	-2.806	**.005**
State - TAS	.556	.384	1.449	.147
State - VIC	.165	.188	.878	.380
State - WA	-.286	.146	-1.957	.050
SEIFA 2	.537	.411	1.304	.192
SEIFA 3	.828	.332	2.493	**.013**
SEIFA 4	.748	.225	3.315	**.001**
SEIFA 5	.733	.238	3.075	**.002**
SEIFA 6	.573	.385	1.491	.136
SEIFA 7	-.533	.356	-1.499	.134
SEIFA 8	.665	.260	2.560	**.011**
SEIFA 9	.506	.260	1.944	.052
SEIFA 10	.669	.340	1.967	**.049**
Gender	.045	.220	.205	.837
School type Combined	.366	.378	.970	.332
School type Primary	.214	.378	.568	.570
School type Secondary	1.174	.417	2.815	**.005**
School type Special	-.471	.394	-1.195	.232
Remoteness Major Cities	-.014	.215	-.067	.947
Remoteness Outer Regional	-.146	.194	-.752	.452
Remoteness Remote	-.009	.370	-.024	.981
Remoteness Very Remote	.872	.391	2.232	**.026**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Global Job Demands – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.142	.734	.193	.847
Treatment Period	.015	.008	1.789	.074
ELS	-.047	.215	-.220	.826
DID	-.029	.020	-1.395	.163
State - NSW	.169	.546	.310	.757
State - NT	-.423	.443	-.955	.340
State - QLD	-.673	.303	-2.221	**.026**
State - SA	-.134	.532	-.252	.801
State - TAS	-1.041	.670	-1.553	.121
State - VIC	-.313	.295	-1.064	.287
State - WA	-.591	.247	-2.388	**.017**
SEIFA 2	-.552	.443	-1.245	.213
SEIFA 3	-.247	.752	-.329	.742
SEIFA 4	-.160	.542	-.296	.767
SEIFA 5	-.368	.579	-.637	.524
SEIFA 6	-.398	.388	-1.025	.305
SEIFA 7	-.219	.435	-.503	.615
SEIFA 8	-.679	.579	-1.174	.240
SEIFA 9	-.701	.537	-1.304	.192
SEIFA 10	-.603	.542	-1.112	.266
Gender	.040	.214	.185	.853
School type Combined	.257	.513	.500	.617
School type Primary	1.051	.429	2.452	**.014**
School type Secondary	.809	.471	1.715	.086
School type Special	.787	.477	1.651	.099
Remoteness Major Cities	-.165	.295	-.562	.574
Remoteness Outer Regional	-.124	.196	-.633	.527
Remoteness Remote	.340	.776	.437	.662
Remoteness Very Remote	.500	.500	.999	.318

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Global Job Demands – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.164	.611	-.269	.788
Treatment Period	-.007	.008	-.834	.404
ELS	.311	.248	1.256	.209
DID	.015	.016	.906	.365
State - NSW	-.720	.451	-1.597	.110
State - NT	.334	.385	.867	.386
State - QLD	-.534	.258	-2.072	**.038**
State - SA	-1.682	.618	-2.721	**.007**
State - TAS	.604	.387	1.559	.119
State - VIC	.170	.186	.912	.362
State - WA	-.286	.143	-2.004	**.045**
SEIFA 2	1.087	.514	2.115	**.034**
SEIFA 3	.879	.341	2.576	**.010**
SEIFA 4	.812	.237	3.425	**.001**
SEIFA 5	.802	.245	3.268	**.001**
SEIFA 6	.471	.409	1.151	.250
SEIFA 7	-.528	.383	-1.378	.168
SEIFA 8	.734	.265	2.766	**.006**
SEIFA 9	.559	.275	2.035	**.042**
SEIFA 10	.816	.370	2.205	**.028**
Gender	.140	.248	.565	.572
School type Combined	-.111	.451	-.247	.805
School type Primary	-.264	.483	-.547	.585
School type Secondary	.658	.373	1.766	.077
School type Special	-.903	.516	-1.750	.080
Remoteness Major Cities	-.011	.212	-.054	.957
Remoteness Outer Regional	-.138	.192	-.722	.470
Remoteness Remote	-.087	.390	-.222	.824
Remoteness Very Remote	.848	.412	2.060	**.039**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Quantitative Demands – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.324	1.171	.276	.782
Treatment Period	-.015	.017	-.896	.370
ELS	.472	.471	1.001	.317
DID	.020	.030	.675	.500
State - NSW	-1.358	.779	-1.742	.081
State - NT	.761	.783	.972	.331
State - QLD	-1.500	.471	-3.184	**.001**
State - SA	-2.878	1.182	-2.436	**.015**
State - TAS	.845	.823	1.026	.305
State - VIC	-.724	.404	-1.792	.073
State - WA	-.489	.314	-1.558	.119
SEIFA 2	.769	.883	.871	.384
SEIFA 3	1.304	.713	1.827	.068
SEIFA 4	1.160	.484	2.396	**.017**
SEIFA 5	.883	.512	1.725	.085
SEIFA 6	-.127	.825	-.153	.878
SEIFA 7	.550	.763	.720	.471
SEIFA 8	-.060	.558	-.107	.914
SEIFA 9	.349	.558	.626	.531
SEIFA 10	1.611	.730	2.206	**.027**
Gender	1.093	.471	2.320	**.020**
School type Combined	.382	.811	.472	.637
School type Primary	-.048	.810	-.059	.953
School type Secondary	-.102	.895	-.114	.909
School type Special	-.987	.846	-1.167	.243
Remoteness Major Cities	.172	.461	.373	.709
Remoteness Outer Regional	-.530	.415	-1.276	.202
Remoteness Remote	-1.429	.795	-1.797	.072
Remoteness Very Remote	-.412	.838	-.491	.623

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Quantitative Demands – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-3.104	1.555	-1.996	**.046**
Treatment Period	-.005	.018	-.303	.762
ELS	-1.138	.456	-2.494	**.013**
DID	-.013	.043	-.290	.771
State - NSW	-2.851	1.158	-2.462	**.014**
State - NT	.482	.940	.513	.608
State - QLD	-2.123	.642	-3.305	**.001**
State - SA	-1.519	1.128	-1.347	**.178**
State - TAS	3.256	1.420	2.292	**.022**
State - VIC	-.870	.624	-1.395	.163
State - WA	-1.006	.524	-1.919	.055
SEIFA 2	3.289	.939	3.501	**.000**
SEIFA 3	5.168	1.593	3.245	**.001**
SEIFA 4	2.708	1.149	2.358	**.018**
SEIFA 5	3.385	1.226	2.761	**.006**
SEIFA 6	2.453	.822	2.983	**.003**
SEIFA 7	1.979	.921	2.147	**.032**
SEIFA 8	1.622	1.226	1.323	.186
SEIFA 9	2.412	1.139	2.118	**.034**
SEIFA 10	1.406	1.148	1.224	.221
Gender	1.086	.454	2.390	**.017**
School type Combined	3.030	1.087	2.787	**.005**
School type Primary	1.014	.908	1.116	.264
School type Secondary	3.030	.999	3.033	**.002**
School type Special	-.075	1.010	-.075	.940
Remoteness Major Cities	1.096	.624	1.756	.079
Remoteness Outer Regional	-.586	.415	-1.413	.158
Remoteness Remote	-2.167	1.645	-1.317	.188
Remoteness Very Remote	1.327	1.060	1.252	.211

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Quantitative Demands – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.505	1.332	.379	**.705**
Treatment Period	.031	.018	1.768	.077
ELS	.519	.540	.962	.336
DID	.031	.035	.871	.384
State - NSW	-1.494	.982	-1.521	**.128**
State - NT	.590	.839	.704	.481
State - QLD	-1.417	.561	-2.524	**.012**
State - SA	-2.704	1.347	-2.008	**.045**
State - TAS	.751	.844	.890	.373
State - VIC	-.818	.406	-2.016	**.044**
State - WA	-.489	.311	-1.572	.116
SEIFA 2	.832	1.120	.743	.458
SEIFA 3	1.190	.744	1.600	.110
SEIFA 4	1.157	.516	2.241	**.025**
SEIFA 5	.904	.535	1.690	.091
SEIFA 6	.040	.892	.045	.964
SEIFA 7	.757	.836	.905	.365
SEIFA 8	-.039	.578	-.068	.946
SEIFA 9	.239	.599	.399	.690
SEIFA 10	1.549	.806	1.921	.055
Gender	1.141	.539	2.115	**.034**
School type Combined	.246	.982	.250	.803
School type Primary	-.185	1.054	-.176	.861
School type Secondary	-.382	.812	-.470	.638
School type Special	-1.001	1.125	-.890	.373
Remoteness Major Cities	.078	.462	.169	.866
Remoteness Outer Regional	-.602	.418	-1.440	.150
Remoteness Remote	-1.439	.850	-1.692	.091
Remoteness Very Remote	-.533	.897	-.594	.552

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Cognitive Demands – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.353	1.050	-.336	.737
Treatment Period	.010	.015	.672	.502
ELS	.834	.423	1.974	**.048**
DID	.008	.027	.301	.764
State - NSW	-.480	.699	-.687	.492
State - NT	.291	.702	.415	.678
State - QLD	-.899	.422	-2.127	**.033**
State - SA	-3.017	1.060	-2.848	**.004**
State - TAS	.745	.738	1.009	.313
State - VIC	.269	.362	.743	.457
State - WA	-.782	.282	-2.776	**.006**
SEIFA 2	.655	.792	.827	.408
SEIFA 3	.816	.640	1.275	.202
SEIFA 4	.899	.434	2.071	**.038**
SEIFA 5	.878	.459	1.913	.056
SEIFA 6	.655	.740	.884	.377
SEIFA 7	-1.505	.684	-2.198	**.028**
SEIFA 8	.635	.500	1.268	.205
SEIFA 9	.816	.500	1.631	.103
SEIFA 10	1.015	.655	1.549	.121
Gender	-.070	.423	-.167	.868
School type Combined	-.052	.727	-.072	.942
School type Primary	.082	.727	.113	.910
School type Secondary	1.431	.803	1.783	.075
School type Special	-.361	.758	-.476	.634
Remoteness Major Cities	-.030	.414	-.072	.943
Remoteness Outer Regional	-.161	.373	-.431	.666
Remoteness Remote	.239	.713	.335	.737
Remoteness Very Remote	1.834	.752	2.440	**.015**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Cognitive Demands – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.135	1.425	.796	.426
Treatment Period	.029	.016	1.773	.076
ELS	-.215	.418	-.513	.608
DID	-.063	.040	-1.592	.112
State - NSW	-.680	1.061	-.641	.522
State - NT	-1.024	.861	-1.189	.235
State - QLD	-1.417	.589	-2.408	**.016**
State - SA	-.953	1.033	-.922	.356
State - TAS	-1.873	1.302	-1.438	.150
State - VIC	-.846	.572	-1.479	.139
State - WA	-1.399	.481	-2.911	**.004**
SEIFA 2	-.823	.861	-.956	.339
SEIFA 3	.084	1.460	.058	.954
SEIFA 4	-.037	1.053	-.035	.972
SEIFA 5	-.633	1.124	-.563	.573
SEIFA 6	-.648	.754	-.859	.390
SEIFA 7	-.248	.844	-.293	.769
SEIFA 8	-1.464	1.124	-1.303	.193
SEIFA 9	-.745	1.043	-.714	.475
SEIFA 10	-.426	1.053	-.405	.685
Gender	-.085	.416	-.204	.838
School type Combined	.101	.996	.101	.920
School type Primary	1.202	.832	1.444	.149
School type Secondary	1.002	.916	1.095	.274
School type Special	1.966	.925	2.124	**.034**
Remoteness Major Cities	-.562	.572	-.982	.326
Remoteness Outer Regional	-.117	.380	-.308	.758
Remoteness Remote	.196	1.508	.130	.897
Remoteness Very Remote	.573	.971	.590	.555

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Cognitive Demands – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.097	1.179	.083	.934
Treatment Period	-.017	.016	-1.068	.286
ELS	1.005	.477	2.105	**.035**
DID	.034	.031	1.091	.275
State - NSW	-1.055	.869	-1.214	.225
State - NT	.506	.742	.682	.495
State - QLD	-1.009	.497	-2.031	**.042**
State - SA	-3.272	1.192	-2.745	**.006**
State - TAS	.857	.747	1.148	.251
State - VIC	.278	.359	.773	.439
State - WA	-.782	.275	-2.837	**.005**
SEIFA 2	1.394	.991	1.406	.160
SEIFA 3	.907	.658	1.378	.168
SEIFA 4	1.045	.457	2.287	**.022**
SEIFA 5	1.038	.473	2.194	**.028**
SEIFA 6	.588	.789	.745	.456
SEIFA 7	-1.498	.739	-2.027	**.043**
SEIFA 8	.795	.512	1.553	.121
SEIFA 9	.915	.530	1.726	.084
SEIFA 10	1.284	.714	1.799	.072
Gender	.104	.477	.219	.827
School type Combined	-.624	.869	-.718	.473
School type Primary	-.492	.932	-.527	.598
School type Secondary	.824	.718	1.147	.251
School type Special	-.869	.995	-.873	.383
Remoteness Major Cities	-.024	.409	-.060	.952
Remoteness Outer Regional	-.143	.370	-.386	.700
Remoteness Remote	.129	.752	.172	.864
Remoteness Very Remote	1.824	.794	2.297	**.022**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Emotional Demands – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-1.691	1.234	-1.370	.171
Treatment Period	.021	.018	1.172	.241
ELS	.406	.497	.818	.414
DID	.012	.031	.367	.713
State - NSW	-.413	.822	-.502	.616
State - NT	.215	.825	.261	.794
State - QLD	-1.052	.497	-2.119	**.034**
State - SA	-3.437	1.246	-2.759	**.006**
State - TAS	1.202	.868	1.385	.166
State - VIC	.342	.426	.804	.422
State - WA	-.579	.331	-1.750	.080
SEIFA 2	1.183	.931	1.271	.204
SEIFA 3	1.989	.752	2.645	**.008**
SEIFA 4	1.752	.510	3.435	**.001**
SEIFA 5	1.759	.540	3.259	**.001**
SEIFA 6	1.368	.870	1.573	.116
SEIFA 7	-1.154	.805	-1.435	.151
SEIFA 8	1.617	.588	2.749	**.006**
SEIFA 9	1.172	.588	1.992	**.046**
SEIFA 10	1.484	.770	1.928	.054
Gender	.161	.497	.324	.746
School type Combined	1.158	.854	1.356	.175
School type Primary	.729	.854	.854	.393
School type Secondary	3.006	.944	3.186	**.001**
School type Special	-.904	.892	-1.014	.311
Remoteness Major Cities	-.023	.486	-.048	.962
Remoteness Outer Regional	-.239	.438	-.545	.586
Remoteness Remote	-.080	.838	-.095	.924
Remoteness Very Remote	1.855	.884	2.099	**.036**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Emotional Demands – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.086	1.663	.052	.959
Treatment Period	.038	.019	1.960	.050
ELS	.012	.488	.025	.980
DID	-.056	.046	-1.210	.226
State - NSW	.828	1.238	.669	.504
State - NT	-.987	1.005	-.982	.326
State - QLD	-1.449	.687	-2.111	**.035**
State - SA	-.242	1.206	-.200	.841
State - TAS	-2.477	1.519	-1.631	.103
State - VIC	-.594	.667	-.891	.373
State - WA	-1.159	.561	-2.068	**.039**
SEIFA 2	-1.476	1.004	-1.469	.142
SEIFA 3	-.848	1.703	-.498	.618
SEIFA 4	-.474	1.228	-.386	.700
SEIFA 5	-.927	1.311	-.707	.479
SEIFA 6	-1.022	.879	-1.162	.245
SEIFA 7	-.746	.985	-.757	.449
SEIFA 8	-1.481	1.311	-1.130	.258
SEIFA 9	-1.695	1.217	-1.393	.164
SEIFA 10	-1.528	1.228	-1.245	.213
Gender	.150	.486	.309	.758
School type Combined	.659	1.162	.567	.571
School type Primary	2.559	.971	2.635	**.008**
School type Secondary	1.978	1.068	1.853	**.064**
School type Special	1.741	1.080	1.612	.107
Remoteness Major Cities	-.371	.667	-.556	.578
Remoteness Outer Regional	-.159	.443	-.358	.720
Remoteness Remote	1.024	1.759	.582	.560
Remoteness Very Remote	1.054	1.133	.930	.352

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Emotional Demands – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.611	1.386	-.441	.660
Treatment Period	-.015	.018	-.797	.426
ELS	.579	.561	1.032	.302
DID	.036	.037	.973	.330
State - NSW	-1.584	1.022	-1.550	.121
State - NT	.593	.873	.680	.497
State - QLD	-1.159	.584	-1.984	**.047**
State - SA	-3.556	1.402	-2.537	**.011**
State - TAS	1.296	.878	1.475	.140
State - VIC	.355	.422	.840	.401
State - WA	-.579	.324	-1.788	.074
SEIFA 2	2.497	1.166	2.141	**.032**
SEIFA 3	2.049	.774	2.647	**.008**
SEIFA 4	1.882	.537	3.501	**.000**
SEIFA 5	1.893	.557	3.401	**.001**
SEIFA 6	1.123	.928	1.210	.226
SEIFA 7	-1.047	.870	-1.204	.229
SEIFA 8	1.751	.602	2.909	**.004**
SEIFA 9	1.239	.623	1.987	**.047**
SEIFA 10	1.723	.839	2.054	**.040**
Gender	.339	.561	.603	.546
School type Combined	-.009	1.022	-.009	.993
School type Primary	-.440	1.096	-.401	.688
School type Secondary	1.670	.845	1.977	**.048**
School type Special	-1.977	1.171	-1.689	.091
Remoteness Major Cities	-.014	.481	-.030	.976
Remoteness Outer Regional	-.226	.435	-.519	.604
Remoteness Remote	-.184	.885	-.208	.836
Remoteness Very Remote	1.819	.934	1.949	.051

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Demand for Hiding Emotions – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.084	.884	.095	.924
Treatment Period	-.005	.013	-.407	.684
ELS	-.134	.356	-.378	.706
DID	-.008	.022	-.365	.715
State - NSW	-.399	.588	-.678	.498
State - NT	.789	.591	1.335	.182
State - QLD	.315	.356	.886	.376
State - SA	-.496	.892	-.556	.578
State - TAS	.955	.622	1.536	.125
State - VIC	.652	.305	2.137	**.033**
State - WA	-.083	.237	-.350	.726
SEIFA 2	.907	.667	1.361	.174
SEIFA 3	.762	.539	1.416	.157
SEIFA 4	.692	.365	1.895	.058
SEIFA 5	.556	.386	1.439	.150
SEIFA 6	.807	.623	1.295	.195
SEIFA 7	-.209	.576	-.363	.717
SEIFA 8	.950	.421	2.256	**.024**
SEIFA 9	.376	.421	.893	.372
SEIFA 10	.553	.551	1.003	.316
Gender	-.436	.356	-1.227	.220
School type Combined	-.482	.612	-.788	.431
School type Primary	-.637	.612	-1.041	.298
School type Secondary	.350	.676	.518	.604
School type Special	-1.762	.639	-2.760	**.006**
Remoteness Major Cities	-.131	.348	-.377	.706
Remoteness Outer Regional	-.619	.314	-1.973	**.049**
Remoteness Remote	.441	.600	.735	.462
Remoteness Very Remote	1.261	.633	1.993	**.046**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Demand for Hiding Emotions – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.229	1.207	1.018	.309
Treatment Period	.001	.014	.040	.968
ELS	-.105	.354	-.297	.766
DID	-.052	.034	-1.558	.119
State - NSW	.232	.899	.258	.796
State - NT	-.041	.729	-.056	.956
State - QLD	-.020	.498	-.040	.968
State - SA	1.151	.875	1.316	.188
State - TAS	-1.568	1.102	-1.423	.155
State - VIC	-.208	.484	-.430	.667
State - WA	-.708	.407	-1.740	.082
SEIFA 2	-.760	.729	-1.042	.298
SEIFA 3	-1.316	1.236	-1.065	.287
SEIFA 4	-.896	.891	-1.005	.315
SEIFA 5	-1.118	.951	-1.175	.240
SEIFA 6	-.730	.638	-1.144	.253
SEIFA 7	.230	.715	.322	.747
SEIFA 8	-1.201	.951	-1.262	.207
SEIFA 9	-1.762	.883	-1.995	**.046**
SEIFA 10	-1.207	.891	-1.354	.176
Gender	-.438	.353	-1.242	.214
School type Combined	-.712	.844	-.844	.399
School type Primary	.747	.705	1.059	.290
School type Secondary	-.404	.775	-.521	.602
School type Special	.178	.784	.227	.821
Remoteness Major Cities	-.191	.484	-.395	.693
Remoteness Outer Regional	-.757	.322	-2.354	**.019**
Remoteness Remote	.326	1.277	.256	.798
Remoteness Very Remote	.929	.822	1.129	.259

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Demand for Hiding Emotions – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.367	.998	.368	.713
Treatment Period	-.014	.013	-1.074	.283
ELS	.138	.404	.342	.733
DID	.012	.026	.449	.653
State - NSW	-.798	.736	-1.085	.278
State - NT	1.172	.628	1.865	.062
State - QLD	-.228	.421	-.543	.587
State - SA	-1.730	1.009	-1.715	.086
State - TAS	1.073	.632	1.697	.090
State - VIC	.677	.304	2.227	**.026**
State - WA	-.083	.233	-.356	.722
SEIFA 2	1.451	.839	1.729	.084
SEIFA 3	1.149	.557	2.062	**.039**
SEIFA 4	.795	.387	2.055	**.040**
SEIFA 5	.678	.401	1.693	.090
SEIFA 6	.531	.668	.794	.427
SEIFA 7	-.805	.626	-1.286	.199
SEIFA 8	1.072	.433	2.475	**.013**
SEIFA 9	.768	.449	1.712	.087
SEIFA 10	1.217	.604	2.015	**.044**
Gender	-.161	.404	-.397	.691
School type Combined	-.878	.736	-1.194	.233
School type Primary	-1.035	.789	-1.311	.190
School type Secondary	.366	.608	.602	.548
School type Special	-2.078	.842	-2.466	**.014**
Remoteness Major Cities	-.109	.346	-.314	.753
Remoteness Outer Regional	-.578	.313	-1.846	.065
Remoteness Remote	-.083	.637	-.131	.896
Remoteness Very Remote	1.129	.672	1.680	.093

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Global Job Resources – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.351	.538	.652	.514
Treatment Period	.040	.008	5.000	**.000**
ELS	.171	.216	.791	.429
DID	.026	.014	1.920	.055
State - NSW	-.037	.358	-.104	.918
State - NT	-.666	.360	-1.853	.064
State - QLD	-.021	.216	-.099	.921
State - SA	1.534	.543	2.826	**.005**
State - TAS	-.372	.378	-.984	.325
State - VIC	-.227	.186	-1.221	.222
State - WA	-.179	.144	-1.241	.215
SEIFA 2	-.226	.406	-.558	.577
SEIFA 3	-1.247	.328	-3.805	**.000**
SEIFA 4	-.444	.222	-1.997	**.046**
SEIFA 5	-.298	.235	-1.265	.206
SEIFA 6	-.648	.379	-1.710	.087
SEIFA 7	.381	.351	1.088	.277
SEIFA 8	-.795	.256	-3.101	**.002**
SEIFA 9	-.555	.256	-2.165	**.030**
SEIFA 10	-1.084	.336	-3.230	**.001**
Gender	-.125	.216	-.575	.565
School type Combined	-.322	.372	-.865	.387
School type Primary	.136	.372	.365	.715
School type Secondary	-1.056	.411	-2.568	**.010**
School type Special	.799	.389	2.056	**.040**
Remoteness Major Cities	.266	.212	1.254	.210
Remoteness Outer Regional	.373	.191	1.952	.051
Remoteness Remote	.113	.365	.309	.757
Remoteness Very Remote	.350	.385	.910	.363

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Global Job Resources – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.833	.720	1.157	.247
Treatment Period	.036	.008	4.354	**.000**
ELS	-.048	.211	-.227	.821
DID	.046	.020	2.308	**.021**
State - NSW	-.464	.536	-.865	.387
State - NT	-.689	.435	-1.584	.113
State - QLD	.309	.297	1.038	.299
State - SA	.880	.522	1.686	.092
State - TAS	-.006	.658	-.010	.992
State - VIC	-.100	.289	-.345	.730
State - WA	.073	.243	.301	.764
SEIFA 2	-.002	.435	-.005	.996
SEIFA 3	-.626	.737	-.849	.396
SEIFA 4	-.054	.532	-.101	.919
SEIFA 5	-.068	.568	-.120	.904
SEIFA 6	-.294	.381	-.772	.440
SEIFA 7	.668	.427	1.565	.118
SEIFA 8	-.309	.568	-.545	.586
SEIFA 9	-.321	.527	-.609	.543
SEIFA 10	-.035	.532	-.066	.947
Gender	-.123	.210	-.584	.559
School type Combined	-.720	.503	-1.431	.153
School type Primary	-.699	.421	-1.663	.096
School type Secondary	-1.659	.463	-3.587	**.000**
School type Special	-.120	.468	-.256	.798
Remoteness Major Cities	.056	.289	.195	.845
Remoteness Outer Regional	.351	.192	1.826	.068
Remoteness Remote	-.846	.762	-1.111	.267
Remoteness Very Remote	.101	.491	.206	.837

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Global Job Resources – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.602	.606	-.993	.321
Treatment Period	.011	.008	1.408	.159
ELS	.116	.245	.471	.638
DID	.018	.016	1.097	.273
State - NSW	1.085	.447	2.427	**.015**
State - NT	-.388	.382	-1.016	.310
State - QLD	.032	.255	.126	.900
State - SA	1.697	.613	2.769	**.006**
State - TAS	-.439	.384	-1.144	.253
State - VIC	-.244	.185	-1.322	.186
State - WA	-.179	.142	-1.264	.206
SEIFA 2	-1.476	.510	-2.896	**.004**
SEIFA 3	-1.354	.338	-4.002	**.000**
SEIFA 4	-.561	.235	-2.386	**.017**
SEIFA 5	-.410	.243	-1.684	.092
SEIFA 6	-1.045	.406	-2.575	**.010**
SEIFA 7	.396	.380	1.040	.298
SEIFA 8	-.907	.263	-3.447	**.001**
SEIFA 9	-.664	.273	-2.436	**.015**
SEIFA 10	-1.250	.367	-3.406	**.001**
Gender	-.182	.245	-.743	.458
School type Combined	.799	.447	1.787	.074
School type Primary	1.258	.479	2.623	**.009**
School type Secondary	.015	.369	.041	.967
School type Special	1.997	.512	3.902	.000
Remoteness Major Cities	.249	.210	1.186	.235
Remoteness Outer Regional	.362	.190	1.902	.057
Remoteness Remote	.151	.387	.390	.696
Remoteness Very Remote	.280	.408	.686	.493

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Possibilities for Development – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.474	.864	.548	.583
Treatment Period	.026	.013	2.066	**.039**
ELS	.304	.347	.873	.382
DID	.008	.022	.375	.708
State - NSW	.162	.575	.282	.778
State - NT	-1.040	.577	-1.801	.072
State - QLD	.044	.347	.125	.900
State - SA	2.058	.871	2.362	**.018**
State - TAS	-.972	.607	-1.601	.109
State - VIC	-.379	.298	-1.271	.204
State - WA	-.232	.232	-1.003	.316
SEIFA 2	-.584	.651	-.897	.370
SEIFA 3	-1.505	.526	-2.861	**.004**
SEIFA 4	-.486	.357	-1.361	.173
SEIFA 5	-.339	.377	-.898	.369
SEIFA 6	-.779	.609	-1.280	.201
SEIFA 7	.775	.563	1.377	.169
SEIFA 8	-1.110	.411	-2.697	**.007**
SEIFA 9	-.919	.411	-2.233	**.026**
SEIFA 10	-1.609	.539	-2.988	**.003**
Gender	-.116	.347	-.333	.739
School type Combined	-.353	.598	-.590	.555
School type Primary	.326	.598	.545	.585
School type Secondary	-1.411	.660	-2.137	**.033**
School type Special	1.200	.624	1.924	.054
Remoteness Major Cities	.265	.340	.781	.435
Remoteness Outer Regional	.393	.306	1.282	.200
Remoteness Remote	.122	.586	.208	.835
Remoteness Very Remote	.466	.618	.753	.451

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Possibilities for Development – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.839	1.156	.726	.468
Treatment Period	.019	.013	1.439	.150
ELS	.314	.339	.926	.354
DID	.037	.032	1.144	.253
State - NSW	-.339	.861	-.394	.694
State - NT	-.798	.698	-1.143	.253
State - QLD	.532	.477	1.115	.265
State - SA	.806	.838	.962	.336
State - TAS	-.181	1.056	-.171	.864
State - VIC	-.134	.464	-.289	.772
State - WA	.153	.390	.393	.695
SEIFA 2	-.131	.698	-.188	.851
SEIFA 3	-.878	1.184	-.742	.458
SEIFA 4	.095	.854	.111	.912
SEIFA 5	.124	.911	.136	.892
SEIFA 6	-.209	.611	-.342	.733
SEIFA 7	.763	.685	1.114	.265
SEIFA 8	-.308	.911	-.338	.735
SEIFA 9	-.544	.846	-.643	.520
SEIFA 10	-.024	.853	-.028	.978
Gender	-.112	.338	-.333	.739
School type Combined	-.799	.808	-.989	.323
School type Primary	-.740	.675	-1.096	.273
School type Secondary	-2.105	.742	-2.835	.005
School type Special	-.108	.750	-.144	.885
Remoteness Major Cities	.106	.464	.228	.820
Remoteness Outer Regional	.340	.308	1.104	.270
Remoteness Remote	-1.047	1.223	-.856	.392
Remoteness Very Remote	.307	.787	.390	.697

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Possibilities for Development – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.555	.983	-.565	.572
Treatment Period	.060	.013	4.627	**.000**
ELS	.073	.398	.183	.854
DID	.000	.026	-.001	.999
State - NSW	1.498	.724	2.068	**.039**
State - NT	-1.010	.619	-1.632	.103
State - QLD	.178	.414	.429	.668
State - SA	2.571	.993	2.589	**.010**
State - TAS	-1.205	.623	-1.935	.053
State - VIC	-.444	.299	-1.484	.138
State - WA	-.232	.230	-1.012	.312
SEIFA 2	-2.219	.827	-2.685	**.007**
SEIFA 3	-1.641	.549	-2.992	**.003**
SEIFA 4	-.760	.381	-1.996	**.046**
SEIFA 5	-.574	.395	-1.456	.145
SEIFA 6	-1.086	.658	-1.651	.099
SEIFA 7	.984	.616	1.597	.110
SEIFA 8	-1.345	.427	-3.153	**.002**
SEIFA 9	-1.057	.442	-2.392	**.017**
SEIFA 10	-1.979	.595	-3.327	**.001**
Gender	-.349	.398	-.877	.380
School type Combined	.982	.724	1.355	.175
School type Primary	1.662	.777	2.138	**.033**
School type Secondary	-.221	.599	-.369	**.712**
School type Special	2.705	.830	3.260	**.001**
Remoteness Major Cities	.201	.341	.591	.555
Remoteness Outer Regional	.369	.308	1.197	.231
Remoteness Remote	.193	.627	.308	.758
Remoteness Very Remote	.400	.662	.605	.546

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Social Support from Colleagues – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-1.913	1.438	-1.330	.184
Treatment Period	.092	.021	4.368	**.000**
ELS	-.128	.579	-.221	.825
DID	.097	.036	2.661	**.008**
State - NSW	.997	.957	1.041	.298
State - NT	-1.101	.961	-1.145	.252
State - QLD	-.946	.579	-1.635	.102
State - SA	1.108	1.451	.764	.445
State - TAS	1.009	1.011	.998	.318
State - VIC	-.069	.496	-.139	.890
State - WA	-.087	.386	-.226	.821
SEIFA 2	-.028	1.085	-.026	.979
SEIFA 3	-.594	.876	-.678	.498
SEIFA 4	-.075	.594	-.127	.899
SEIFA 5	-.399	.629	-.634	.526
SEIFA 6	-.127	1.014	-.125	.901
SEIFA 7	1.221	.937	1.303	.193
SEIFA 8	.209	.685	.305	.760
SEIFA 9	.014	.685	.020	.984
SEIFA 10	.292	.897	.326	.745
Gender	.503	.579	.869	.385
School type Combined	1.265	.995	1.271	.204
School type Primary	1.132	.995	1.137	.255
School type Secondary	.026	1.099	.024	.981
School type Special	1.258	1.039	1.211	.226
Remoteness Major Cities	1.008	.566	1.780	.075
Remoteness Outer Regional	1.109	.510	2.173	**.030**
Remoteness Remote	.083	.976	.085	.932
Remoteness Very Remote	-.268	1.030	-.260	.795

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Social Support from Colleagues – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-2.612	1.982	-1.318	.188
Treatment Period	.104	.023	4.551	**.000**
ELS	.088	.582	.152	.879
DID	.113	.055	2.045	**.041**
State - NSW	-1.164	1.476	-.789	.430
State - NT	-1.256	1.198	-1.048	.295
State - QLD	-.576	.819	-.704	.481
State - SA	-1.051	1.437	-.731	.465
State - TAS	3.426	1.811	1.892	.059
State - VIC	.417	.796	.524	.600
State - WA	.462	.668	.691	.489
SEIFA 2	1.994	1.198	1.665	.096
SEIFA 3	1.153	2.030	.568	.570
SEIFA 4	2.095	1.464	1.431	.153
SEIFA 5	1.601	1.563	1.025	.306
SEIFA 6	2.058	1.048	1.963	.050
SEIFA 7	.901	1.175	.767	.443
SEIFA 8	2.598	1.563	1.663	.096
SEIFA 9	2.176	1.451	1.499	.134
SEIFA 10	2.280	1.464	1.557	.120
Gender	.492	.579	.850	.395
School type Combined	1.511	1.386	1.090	.276
School type Primary	-.666	1.158	-.575	.565
School type Secondary	.399	1.273	.313	.754
School type Special	-.830	1.287	-.645	.519
Remoteness Major Cities	.973	.796	1.223	.221
Remoteness Outer Regional	1.052	.529	1.991	**.047**
Remoteness Remote	-.459	2.097	-.219	.827
Remoteness Very Remote	-.374	1.351	-.277	.782

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Social Support from Colleagues – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-4.012	1.595	-2.515	**.012**
Treatment Period	-.030	.021	-1.441	.150
ELS	.064	.646	.099	.921
DID	.075	.042	1.782	.075
State - NSW	3.050	1.176	2.593	**.010**
State - NT	-.423	1.005	-.421	.674
State - QLD	-.775	.672	-1.153	.249
State - SA	1.106	1.613	.686	.493
State - TAS	1.457	1.011	1.441	.150
State - VIC	-.003	.486	-.007	.995
State - WA	-.087	.373	-.234	.815
SEIFA 2	-1.916	1.342	-1.428	.153
SEIFA 3	-.853	.891	-.957	.338
SEIFA 4	-.140	.619	-.227	.820
SEIFA 5	-.302	.641	-.472	.637
SEIFA 6	-.872	1.068	-.817	.414
SEIFA 7	1.078	1.001	1.078	.281
SEIFA 8	.305	.693	.441	.659
SEIFA 9	-.249	.718	-.348	.728
SEIFA 10	.217	.966	.225	.822
Gender	.689	.646	1.067	.286
School type Combined	3.316	1.176	2.819	**.005**
School type Primary	3.186	1.262	2.525	**.012**
School type Secondary	2.069	.972	2.128	**.033**
School type Special	3.283	1.347	2.437	**.015**
Remoteness Major Cities	1.076	.553	1.945	.052
Remoteness Outer Regional	1.341	.500	2.680	**.007**
Remoteness Remote	.324	1.018	.318	.750
Remoteness Very Remote	-.289	1.075	-.269	.788

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Self-efficacy – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.378	1.241	.305	.761
Treatment Period	.166	.018	9.089	**.000**
ELS	-.119	.499	-.238	.812
DID	-.002	.031	-.076	.939
State - NSW	-1.680	.826	-2.034	**.042**
State - NT	-1.705	.829	-2.056	**.040**
State - QLD	.621	.499	1.245	.213
State - SA	1.947	1.252	1.555	.120
State - TAS	1.365	.873	1.564	.118
State - VIC	-.197	.428	-.461	.645
State - WA	-.293	.333	-.881	.379
SEIFA 2	2.412	.936	2.577	**.010**
SEIFA 3	-1.815	.756	-2.401	**.016**
SEIFA 4	-.356	.513	-.695	.487
SEIFA 5	.120	.542	.221	.825
SEIFA 6	.351	.875	.401	.688
SEIFA 7	-.924	.809	-1.142	.253
SEIFA 8	-.898	.591	-1.519	.129
SEIFA 9	-.262	.591	-.443	.658
SEIFA 10	-2.184	.774	-2.822	**.005**
Gender	-1.481	.499	-2.965	**.003**
School type Combined	-1.259	.859	-1.466	.143
School type Primary	-1.046	.859	-1.218	.223
School type Secondary	-.838	.949	-.883	.377
School type Special	.197	.896	.220	.826
Remoteness Major Cities	1.295	.489	2.649	**.008**
Remoteness Outer Regional	1.607	.440	3.651	**.000**
Remoteness Remote	2.109	.843	2.503	**.012**
Remoteness Very Remote	2.041	.888	2.297	**.022**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Self-efficacy – Difference-in-Differences Prospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	4.132	1.670	2.475	**.013**
Treatment Period	.174	.019	9.045	**.000**
ELS	.380	.490	.775	.439
DID	.008	.047	.171	.865
State - NSW	1.597	1.243	1.284	.199
State - NT	-2.430	1.009	-2.409	**.016**
State - QLD	1.181	.689	1.712	.087
State - SA	3.524	1.211	2.911	**.004**
State - TAS	-3.358	1.525	-2.202	**.028**
State - VIC	-.245	.670	-.366	.715
State - WA	.077	.563	.137	.891
SEIFA 2	-2.191	1.009	-2.172	**.030**
SEIFA 3	-6.658	1.710	-3.894	**.000**
SEIFA 4	-4.378	1.233	-3.551	**.000**
SEIFA 5	-4.500	1.316	-3.419	**.001**
SEIFA 6	-3.819	.883	-4.326	**.000**
SEIFA 7	-.823	.989	-.832	.405
SEIFA 8	-4.941	1.316	-3.754	**.000**
SEIFA 9	-4.614	1.222	-3.775	**.000**
SEIFA 10	-4.447	1.233	-3.607	**.000**
Gender	-1.489	.488	-3.053	**.002**
School type Combined	-4.100	1.167	-3.513	**.000**
School type Primary	-.141	.975	-.145	.885
School type Secondary	-4.278	1.072	-3.989	**.000**
School type Special	1.353	1.084	1.248	.212
Remoteness Major Cities	.428	.670	.639	.523
Remoteness Outer Regional	1.709	.445	3.838	**.000**
Remoteness Remote	1.756	1.766	.994	.320
Remoteness Very Remote	.645	1.137	.567	.571

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

ELS Self-efficacy – Difference-in-Differences Retrospective Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-1.357	1.419	-.956	.339
Treatment Period	-.071	.019	-3.805	**.000**
ELS	-.060	.575	-.105	.917
DID	-.005	.037	-.140	.889
State - NSW	.239	1.046	.228	.820
State - NT	-.451	.894	-.505	.614
State - QLD	.551	.598	.922	.357
State - SA	2.004	1.435	1.397	.163
State - TAS	1.343	.899	1.494	.135
State - VIC	-.056	.432	-.130	.897
State - WA	-.293	.332	-.883	.377
SEIFA 2	.480	1.194	.402	.688
SEIFA 3	-1.958	.792	-2.471	**.014**
SEIFA 4	-.338	.550	-.614	.539
SEIFA 5	-.035	.570	-.061	.952
SEIFA 6	-.887	.950	-.934	.350
SEIFA 7	-1.093	.890	-1.228	.219
SEIFA 8	-1.053	.616	-1.708	.088
SEIFA 9	-.404	.638	-.633	.527
SEIFA 10	-2.270	.859	-2.642	**.008**
Gender	-1.423	.575	-2.476	**.013**
School type Combined	.660	1.046	.631	.528
School type Primary	.874	1.122	.778	.436
School type Secondary	.898	.865	1.038	.299
School type Special	2.097	1.198	1.750	.080
Remoteness Major Cities	1.436	.492	2.918	**.004**
Remoteness Outer Regional	1.577	.445	3.543	**.000**
Remoteness Remote	2.179	.906	2.406	**.016**
Remoteness Very Remote	1.970	.956	2.062	**.039**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Global Job Demands – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.191	.347	-.550	.582
Treatment Period	-.012	.025	-.463	.643
LSLD	1.170	.343	3.415	**.001**
DID	-.003	.032	-.087	.930
SEIFA 2	-.612	.181	-3.386	**.001**
SEIFA 3	-1.203	.295	-4.078	**.000**
SEIFA 4	1.632	.385	4.235	**.000**
SEIFA 5	.016	.276	.059	.953
SEIFA 6	-1.060	.295	-3.592	**.000**
SEIFA 7	.341	.217	1.569	.117
SEIFA 8	.742	.267	2.775	**.006**
SEIFA 9	.213	.206	1.033	.302
SEIFA 10	-.340	.139	-2.444	**.015**
Gender	2.005	.455	4.411	**.000**
School type Combined	-.272	.295	-.923	.356
School type Primary	-.416	.241	-1.728	.084
School type Secondary	-2.011	.399	-5.036	**.000**
Remoteness Major Cities	-1.074	.241	-4.460	**.000**
Remoteness Outer Regional	-.154	.181	-.855	.393
Remoteness Remote	1.307	.455	2.874	**.004**
Remoteness Very Remote	.059	.347	.169	.866

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Quantitative Demands – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	.245	.767	.320	.749
Treatment Period	-.051	.055	-.917	.359
LSLD	1.025	.758	1.352	.177
DID	.025	.072	.344	.731
SEIFA 2	-.597	.400	-1.492	.136
SEIFA 3	-.942	.653	-1.442	.150
SEIFA 4	.879	.853	1.030	.303
SEIFA 5	-.465	.611	-.762	.446
SEIFA 6	.000	.653	.001	.999
SEIFA 7	.878	.481	1.828	.068
SEIFA 8	1.184	.592	2.001	**.046**
SEIFA 9	.470	.456	1.031	.303
SEIFA 10	-1.402	.308	-4.548	**.000**
Gender	2.039	1.006	2.026	**.043**
School type Combined	-.540	.653	-.828	.408
School type Primary	-1.003	.533	-1.882	.060
School type Secondary	-2.337	.884	-2.644	**.008**
Remoteness Major Cities	-.787	.533	-1.476	.140
Remoteness Outer Regional	.166	.400	.415	.678
Remoteness Remote	.451	1.006	.448	.654
Remoteness Very Remote	-.262	.767	-.342	.732

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Cognitive Demands – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.368	.670	-.550	.583
Treatment Period	-.033	.048	-.676	.499
LSLD	2.218	.662	3.351	**.001**
DID	-.021	.063	-.335	.738
SEIFA 2	-1.225	.349	-3.509	**.000**
SEIFA 3	-1.925	.570	-3.379	**.001**
SEIFA 4	2.286	.745	3.069	**.002**
SEIFA 5	.097	.533	.181	.856
SEIFA 6	-1.539	.570	-2.700	**.007**
SEIFA 7	.321	.420	.765	.444
SEIFA 8	1.172	.516	2.270	**.023**
SEIFA 9	.347	.398	.872	.384
SEIFA 10	-.258	.269	-.957	.339
Gender	2.895	.878	3.295	**.001**
School type Combined	-.774	.570	-1.358	.175
School type Primary	-.630	.465	-1.354	.176
School type Secondary	-3.172	.772	-4.110	**.000**
Remoteness Major Cities	-1.837	.465	-3.948	**.000**
Remoteness Outer Regional	-.125	.349	-.359	.720
Remoteness Remote	1.879	.878	2.139	**.033**
Remoteness Very Remote	.418	.670	.624	.533

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Emotional Demands – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.746	.783	-.952	.341
Treatment Period	-.018	.057	-.313	.755
LSLD	2.670	.774	3.449	**.001**
DID	.004	.073	.054	.957
SEIFA 2	-1.318	.408	-3.228	**.001**
SEIFA 3	-2.676	.666	-4.016	**.000**
SEIFA 4	3.809	.871	4.372	**.000**
SEIFA 5	.200	.624	.320	.749
SEIFA 6	-2.398	.667	-3.596	**.000**
SEIFA 7	.922	.491	1.880	.060
SEIFA 8	1.823	.604	3.019	**.003**
SEIFA 9	.620	.465	1.333	.183
SEIFA 10	-.699	.315	-2.219	**.027**
Gender	4.571	1.027	4.450	**.000**
School type Combined	-.327	.667	-.491	.624
School type Primary	-.735	.544	-1.351	.177
School type Secondary	-4.362	.903	-4.833	**.000**
Remoteness Major Cities	-2.426	.544	-4.458	**.000**
Remoteness Outer Regional	-.397	.408	-.973	.331
Remoteness Remote	3.130	1.027	3.046	**.002**
Remoteness Very Remote	.172	.783	.220	.826

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Demand for Hiding Emotions – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.478	.571	2.590	**.010**
Treatment Period	-.022	.041	-.522	.602
LSLD	.538	.564	.954	.340
DID	-.045	.054	-.836	.403
SEIFA 2	-.596	.297	-2.006	**.045**
SEIFA 3	-1.515	.485	-3.121	**.002**
SEIFA 4	1.731	.634	2.728	**.006**
SEIFA 5	-.817	.454	-1.799	.072
SEIFA 6	-1.664	.486	-3.427	**.001**
SEIFA 7	-.363	.357	-1.015	.310
SEIFA 8	-.223	.440	-.507	.612
SEIFA 9	-.661	.339	-1.949	.052
SEIFA 10	-.782	.229	-3.412	**.001**
Gender	2.241	.748	2.995	**.003**
School type Combined	-1.234	.486	-2.542	**.011**
School type Primary	-1.371	.396	-3.459	**.001**
School type Secondary	-2.951	.657	-4.489	**.000**
Remoteness Major Cities	-.994	.396	-2.508	**.012**
Remoteness Outer Regional	-.189	.297	-.635	.526
Remoteness Remote	.947	.748	1.266	.206
Remoteness Very Remote	-.549	.570	-.963	.336

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Global Resources – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.171	.345	3.393	**.001**
Treatment Period	.030	.025	1.208	.227
LSLD	-.144	.341	-.422	.673
DID	.070	.032	2.163	**.031**
SEIFA 2	-.109	.180	-.604	.546
SEIFA 3	-.002	.294	-.007	.995
SEIFA 4	-.317	.384	-.825	.410
SEIFA 5	-1.119	.275	-4.072	**.000**
SEIFA 6	.188	.294	.639	.523
SEIFA 7	-.368	.216	-1.704	.089
SEIFA 8	-.595	.266	-2.236	**.026**
SEIFA 9	-.371	.205	-1.808	.071
SEIFA 10	.271	.139	1.953	.051
Gender	-.746	.453	-1.648	.100
School type Combined	-1.212	.294	-4.126	**.000**
School type Primary	-.748	.240	-3.119	**.002**
School type Secondary	-.873	.398	-2.196	**.028**
Remoteness Major Cities	.314	.240	1.309	.191
Remoteness Outer Regional	.369	.180	2.052	**.040**
Remoteness Remote	-.801	.453	-1.770	.077
Remoteness Very Remote	-.022	.345	-.063	.950

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Possibilities for Development – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	1.456	.557	2.617	**.009**
Treatment Period	.033	.040	.830	.407
LSLD	.118	.550	.214	.831
DID	.087	.052	1.669	.095
SEIFA 2	-.152	.290	-.524	.600
SEIFA 3	.391	.473	.826	.409
SEIFA 4	-.569	.619	-.919	.358
SEIFA 5	-1.611	.443	-3.637	**.000**
SEIFA 6	.370	.474	.781	.435
SEIFA 7	-.331	.349	-.949	.343
SEIFA 8	-.440	.429	-1.026	.305
SEIFA 9	-.210	.331	-.636	.525
SEIFA 10	.769	.224	3.438	**.001**
Gender	-1.619	.730	-2.218	**.027**
School type Combined	-1.822	.474	-3.846	**.000**
School type Primary	-1.140	.387	-2.949	**.003**
School type Secondary	-1.163	.641	-1.814	.070
Remoteness Major Cities	.487	.387	1.260	.208
Remoteness Outer Regional	.704	.290	2.429	**.015**
Remoteness Remote	-.924	.730	-1.266	.206
Remoteness Very Remote	.111	.556	.199	.843

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Social Support from Colleagues – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	-.570	.910	-.626	.531
Treatment Period	.091	.066	1.386	.166
LSLD	1.451	.899	1.613	.107
DID	-.030	.085	-.350	.726
SEIFA 2	-.125	.474	-.263	.792
SEIFA 3	-1.356	.774	-1.751	.080
SEIFA 4	1.162	1.012	1.148	.251
SEIFA 5	-.457	.724	-.631	.528
SEIFA 6	.027	.774	.035	.972
SEIFA 7	.455	.570	.799	.424
SEIFA 8	.984	.702	1.403	.161
SEIFA 9	-.115	.541	-.213	.831
SEIFA 10	-.397	.366	-1.086	.278
Gender	1.303	1.193	1.092	.275
School type Combined	-.370	.774	-.477	.633
School type Primary	-.491	.632	-.777	.437
School type Secondary	-1.137	1.048	-1.085	.278
Remoteness Major Cities	-.673	.632	-1.065	.287
Remoteness Outer Regional	-1.368	.474	-2.885	**.004**
Remoteness Remote	1.318	1.193	1.104	.270
Remoteness Very Remote	1.279	.910	1.406	.160

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

LSLD Self-efficacy – Difference-in-Differences Analysis Results

Coefficients	Estimate	Std. Error	t value	p value
Intercept	3.749	.813	4.614	**.000**
Treatment Period	.129	.059	2.198	**.028**
LSLD	-2.147	.803	-2.673	**.008**
DID	.033	.076	.436	.663
SEIFA 2	.006	.423	.014	.989
SEIFA 3	-.070	.691	-.101	.920
SEIFA 4	-.466	.904	-.515	.606
SEIFA 5	-2.305	.647	-3.564	**.000**
SEIFA 6	.109	.692	.158	.875
SEIFA 7	-2.138	.509	-4.201	**.000**
SEIFA 8	-2.906	.626	-4.638	**.000**
SEIFA 9	-2.123	.483	-4.397	**.000**
SEIFA 10	-.111	.327	-.339	.735
Gender	-.464	1.066	-.435	.663
School type Combined	-1.765	.692	-2.552	**.011**
School type Primary	-1.542	.564	-2.732	**.006**
School type Secondary	-1.856	.936	-1.983	**.048**
Remoteness Major Cities	.824	.564	1.460	.145
Remoteness Outer Regional	.591	.423	1.395	.163
Remoteness Remote	-3.076	1.066	-2.887	**.004**
Remoteness Very Remote	-1.898	.812	-2.337	**.020**

Note. Estimate = the standard deviation difference in results when comparing those who experienced the policy with those that did not. Significant p values (below .05) are in bold.

Appendix 5 – Chapter 2

Table of Contents

Part A - Occupational Wellbeing Theories

Numerous occupational wellbeing theories exist to try explain the antecedents of employee wellbeing. Below I briefly discuss a number of these theories, and why I have come to the conclusion in adopting the Job Demands Resources Theory, effectively a theory encompassing all the other occupational wellbeing theories.

A1. The Job Characteristics Model

Developed by Hackman and Oldman (see Hackman et al., 1975), the Job Characteristics Model (JCM) consists of five core job dimensions theorised responsible for employee job enrichment (Heery & Noon, 2017). The first three dimensions – skill variety, task identity, and task significance – represent how meaningful the job is to the employee. The fourth dimension is autonomy, representing the extent the employee feels responsible for the outcomes of his or her work. The final dimension is feedback, tied to the extent the employee is able to appreciate his or her efforts. The Motivational Potential Score (MPS), used as a tool to ascertain the capability of particular job and also current jobs to assist with job redesign, is calculated with the follow equation consisting of each dimension:

MPS = ((Skill variety + Task Variety + Task Significance)/3) * Autonomy * feedback

The greater the MPS, the greater the motivation, quality of performance, job satisfaction, and the lower the absenteeism and turnover (Heery & Noon, 2017).

A2. The Michigan Organisational Stress Model

The Michigan Organisational Stress Model (MOSM), a sociologically based theorem, focuses on the understanding that stress results in disease. The Key mitigating factor is support available to an employee, and the type and extent of support influences an employee's stress directly, the relationship of employee stress on disease, and disease directly (House, 1981).

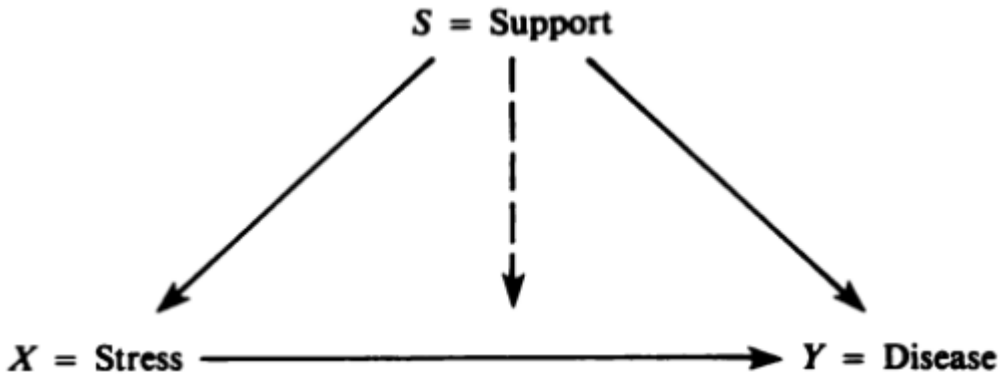


Figure A1. Graph on influence of social support on stress and disease (House, 1981).

More broadly, the MOSM, posits individual differences and perceptions have an impact on affective, cognitive, behavioural, and physiological outcomes (Jones, Smith, & Johnson, 2005).

A3. The Demand-Control-(Support) Model

The Job Demand-Control Model designed by Karasek (1979), then expanded to the Job Demand-Control Support Model (JDCS) by Johnson and Hall (1988), has three core components: job demands, job control, and job strain. Job demands relate to independent factors which are deemed sources of stress, job control refers to the extent an employee is able to influence his or her work activities, and job strain refers to the symptoms of the combination of the former two components, predominately relating to mental strain resulting in poor psychological and physiological well-being (Snyder et al., 2008). In summary, job positions which are high in demands and low in control are theorised to result in high strain on the employee. The support component of model refers to factors which assist with job demands, thus alleviating, or mitigating some or all the strain associated with specific job demands.

A4. The Effort-Reward-Imbalance Model

The Effort-Reward-Imbalance Model (ERI) posits an imbalance between the extent of effort, both extrinsic and intrinsic, exerted by an employee versus the rewards they receive, results in poor psychological and physiological wellbeing (Siegrist & Quick, 1996). As

displayed in figure A2, extrinsic efforts encompass aspects such as job demands, whereas intrinsic efforts encompass aspects such as emotional demands of the position. Rewards also encompass both tangible and intangible components, such as money, status and esteem. The greater the needed effort needed to perform the role, the greater the reward needed to be provided to an employee for positive wellbeing.

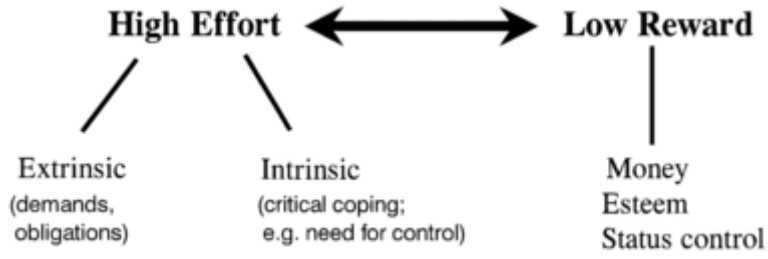


Figure A2. The effort-reward imbalance model at work.

A5. The Vitamin Model

Warr (1994) created the conceptual framework known at the Vitamin Model, which focuses on how environmental components influence affective well-being. First, the framework posits affective well-being is measured along three principal axes: Displeased to Pleased, Anxious to Comfortable, and Depressed to Enthusiastic (figure A3).

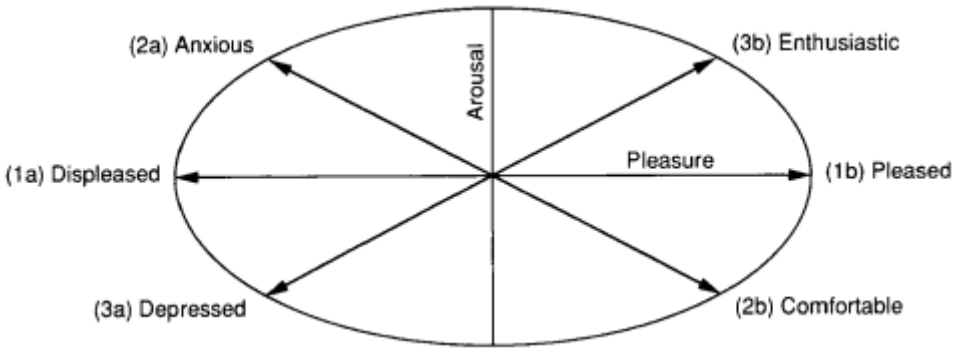


Figure A3. The Vitamin Model.

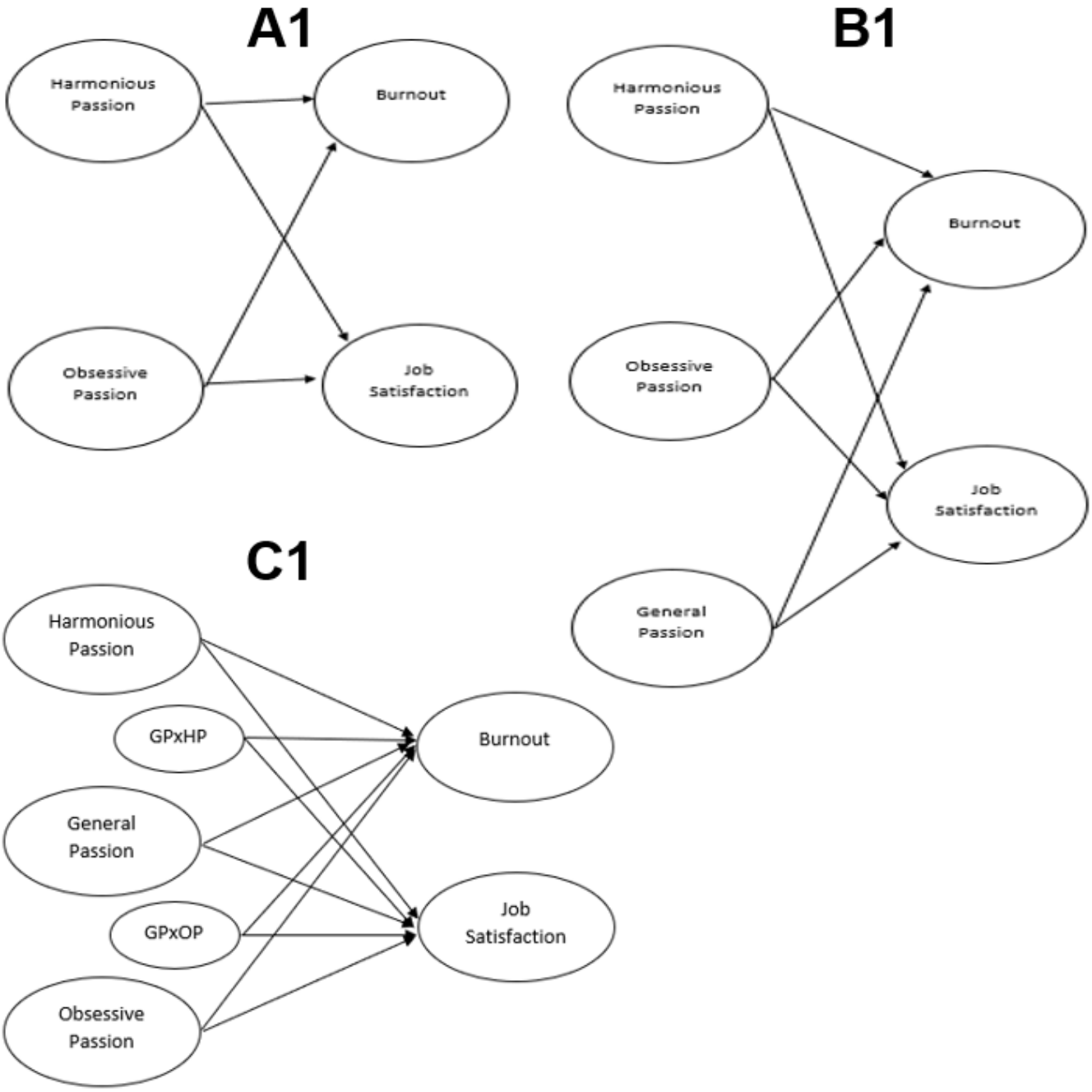
The model consists of 9 environmental components theorised to influence an employee's affective wellbeing: opportunity for control, opportunity for skill use, externally generated goals, variety, environmental clarity, availability of money, physical security, opportunity for interpersonal contact, and valued social position.

Appendix 6 – Chapter 6

Table of Contents

Part A – Cross-Sectional Model Figures, Methodology, and Results

A1. Figure 1 - cross-sectional models.



Note. Traditional Dualistic Model of Passion (A1), the Supplemented Dualistic Model of Passion (B1), and the Supplemented Model with General Passion Interactions (C1).

A2. Methodology.

Using the 2015 data, we tested the traditional DMP (A1) using the typical CFA-SEM structure, and the Set-ESEM structure to compare goodness of fit. We then tested our supplemented DMP model (B1 and C1) to address research questions 1 - 3. We also used the 2016 data for model C to confirm the replication of the findings between two sets of data.

A3. Factor Structure.

The cross-sectional CFA on the DMP exhibited poor fit (CFI = .882; TLI = 0.863; RMSEA = .085; SRMR = 0.097). Using Set-ESEM, however, yielded good fit (CFI = .949; TLI = 0.937; RMSEA = .055; SRMR = 0.034). Further, the G-DMP using Set-ESEM also yielded good fit (CFI = .947; TLI = 0.933; RMSEA = .052; SRMR = 0.031). Therefore, all models going forward will be using the Set-ESEM structure.

A4. Table 1 –models A1, B1, and C1 regressions (2015).

Model	A1		B1		C1	
Variable	BO	JS	BO	JS	BO	JS
OP	.283*	.033	.305*	-.129*	.3*	-.141*
HP	-.469*	.598*	-.489*	.414*	-.482*	.409*
GP			.005	.347*	-.008	.35*
GPxHP					-.009	-.017
GPxOP					.007	.052*

Note. * = $p < 0.05$

A5. Table 2 – model C1 regressions (2016).

Model	C	
Variable	BO	JS
OP	0.268*	-0.135*
HP	-0.503*	0.455*
GP	0.005	0.28*
GPxHP	0.02	-0.018
GPxOP	-0.029	-0.012

Note. * = $p < 0.05$

Part B – Model Structures and Justifications

B1. Longitudinal model structure descriptions and justification.

Using confirmatory factor analysis (CFA) with the Dualistic Model of Passion has typically yielded poor psychometric results when compared with exploratory structural equation modelling (ESEM), due to the highly correlated nature of harmonious and obsessive passion (Marsh et al., 2013).

On the other hand, although the use of exploratory structural equation modelling (ESEM; modelling that allows cross-loadings between all indicators of every latent variable) on the Dualistic Model of Passion has resulted in good fit (Marsh et al., 2013, Toth-Kiraly, Bothe, Rigo, & Orosz, 2017), pure ESEM models lack parsimony. In addition, an ESEM approach would go against a priori theory, as the passion factor indicators are not theoretically associated with the other latent or observed variables (i.e., burnout and job satisfaction). We therefore adopted a Set-ESEM structure to our model, effectively a combination of both traditional CFA, and ESEM methods (see Dicke et al., 2018), where we allowed all indicators of general, harmonious, and obsessive passion to cross-load on each other, but not on the other latent variables (B2). This Set-ESEM structure should not only provide the model with good fit and parsimony, but align it with the a priori theory when compared with CFA or ESEM structures. In our Set-ESEM model, we fixed all factor loadings between T1 and T2 (i.e., the factors were time invariant). We hypothesise the model will still yield an adequate fit pursuant to the time invariant findings of Marsh et al. (2013).

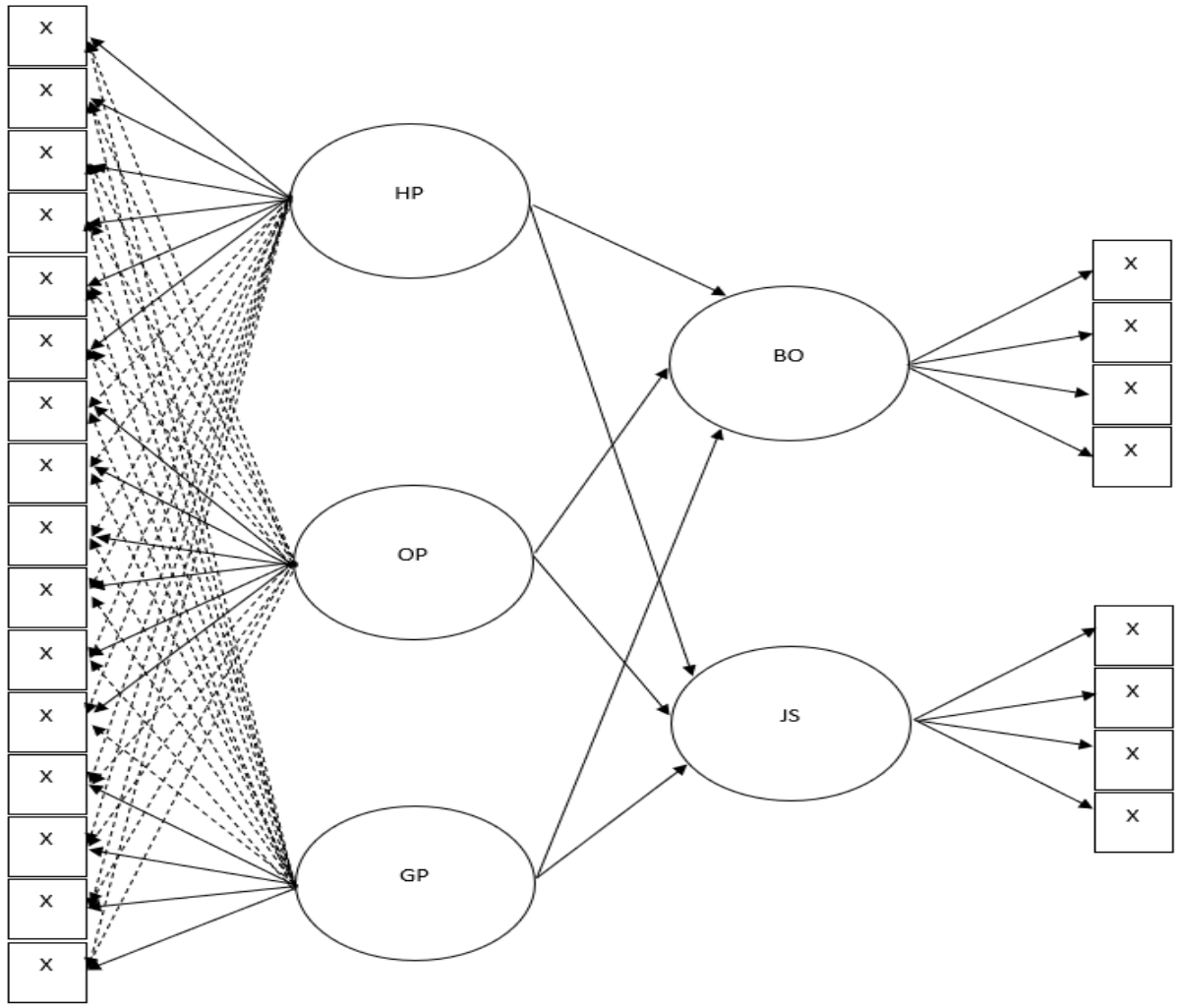
Our analysis has been conducted in Mplus (Muthen & Muthen). Considering the recent adoption of Set-ESEM methods, at the time of writing, Mplus (7.1) does not have the capability to run such model structures in conjunction with latent variable interactions (Mplus does not allow interaction terms in models with an ESEM structure). Thus, to explore the moderating influence of general passion on obsessive and harmonious passion, we adopted

the extension ESEM model proposed by Morin, Marsh, and Nagengast (2013), called ESEM-within-CFA (EwC), specifically designed to circumvent such issues. We fixed the factor loadings in our EwC model to those sourced from the Set-ESEM reciprocal effects model (our model without the interaction terms). For additional psychometric scrutiny, we fixed the indicator loadings over time. Regarding the efficacy of this EwC, Morin, Marsh, and Nagengast (2013) confirmed:

"The EwC solution will have the same degrees of freedom and, within rounding error, the same chi-square, goodness of fit statistics, and most importantly parameter estimates as the ESEM solution. Standard errors will also be highly similar, but might be slightly inflated, suggesting that caution still needs to be exerted in the interpretation of marginally nonsignificant results."

To review the Mplus syntax we used, please refer to B3 below.

B2. Figure 2 – Set-ESEM G-DMP on burnout and job satisfaction.



Note. x = indicator variables, HP = Harmonious Passion, OP = Obsessive Passion, GP = General Passion, BO = Burnout, JS = Job Satisfaction. Dotted arrows represent ~0 loading aim specified.

B3 – Table 3 A and B Regressions.

Model	Variable	OP T2	HP T2	BO T2	JS T2	GP T2
A2	OP T1	0.733*	-0.036	0.028	0.048	
	HP T1	-0.013	0.607*	-0.072*	0.074*	
	BO T1	0.019	-0.081*	0.645*	0.037	
	JS T1	0.005	0.104*	-0.023	0.590*	
B2	GP T1	0.107*	0.040	0.013	0.114*	0.595*
	OP T1	0.732*	-0.038	0.020	0.039	0.016
	HP T1	-0.026	0.567*	-0.092*	0.076*	0.055
	BO T1	0.018	-0.080*	0.645*	0.031	0.019
	JS T1	-0.041	0.062	-0.028	0.564*	0.078*

Note. * = $p < 0.05$

Table 1 – Psychometric and Invariance Testing Results of the CFA and set-ESEM Longitudinal Models

Model	χ^2	*df*	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$ (df)	*p*	ΔCFI
CFA-SEM									
Configural	3726.806	440	0.864	0.844	0.074	0.091			
Metric	3876.489	458	0.859	0.844	0.074	0.094	150.033 (18)	<.001	0.005
Scalar	4519.451	476	0.833	0.822	0.079	0.101	743.059 (36)	<.001	0.031
set-ESEM									
Configural	1690.002	392	0.946	0.931	0.05	0.034			
Metric	1839.223	434	0.942	0.932	0.049	0.041	153.617 (42)	<.001	0.004
Scalar	1937.164	452	0.939	0.931	0.049	0.043	248.269 (60)	<.001	0.007

Table 2 – Target Loadings and Correlation Matrix of the Set-ESEM Scalar Invariance Model

Variable	GP T1	OP T1	HP T1	BO T1	JS T1	GP T2	OP T2	HP T2	BO T2	JS T2
Target Loadings										
Item 1	.719	.742	.877	.944	.758	.719	.742	.877	.944	.758
Item 2	.889	.859	.518	.894	.507	.889	.859	.518	.894	.507
Item 3	.833	.576	.436	.753	.846	.833	.576	.436	.753	.846
Item 4	.741	.467	.502	.863	.846	.741	.467	.502	.863	.846
Item 5		.550	.795				.550	.795		
Item 6		.572	.867				.572	.867		
Correlation Matrix										
GP T1	1									
OP T1	.328	1								
HP T1	.457	-.234	1							
BO T1	-.126	.403	-.552	1						
JS T1	.493	-.117	.605	-.453	1					
GP T2	.685	.278	.340	-.090	.403	1				
OP T2	.258	.756	-.191	.319	-.071	.324	1			
HP T2	.358	-.187	.700	-.522	.494	.457	-.202	1		
BO T2	-.078	.300	-.414	.682	-.303	-.138	.363	-.552	1	
JS T2	.373	-.106	.461	-.343	.654	.457	-.122	.603	-.421	1
α	.868	.784	.848	.917	.814	.878	.783	.845	.919	.836

Appendices - Reference List

Dicke, T., Marsh, H., Riley, P., Parker, P., Guo, J., & Horwood, M. (2018). Validating the Copenhagen Psychosocial Questionnaire (COPSOQ-II) Using Set-ESEM: Identifying Psychosocial Risk Factors in a Sample of School Principals. *Frontiers in Psychology, 9*, 584.

Hackman, J., Oldham, G., Janson, R., & Purdy, K. (1975). A New Strategy for Job Enrichment. *California Management Review, 17*(4), 57-71.

Heery, E., & Noon, M. (2017). Job Characteristics Model. *A Dictionary of Human Resource Management,* A Dictionary of Human Resource Management.

House, J, S. (1981). *Work stress and social support,* London Addison-Wesley.

Johnson, J., & Hall, E. (1988). Job strain, work place social support, and cardiovascular disease: A cross-sectional study of a random sample of the Swedish working population. *American Journal of Public Health, 78*(Oct 88), 1336-1342.

Jones, M., Smith, K., & Johnston, D. (2005). Exploring the Michigan model: The relationship of personality, managerial support and organizational structure with health outcomes in entrants to the healthcare environment. *Work & Stress, 19*(1), 1-22.

Karasek, R. (1979). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly, 24*(2), 285-308.

Marsh, H., Vallerand, R., Lafrenière, M., Parker, P., Morin, A., Carbonneau, N., . . . Reynolds, Cecil R. (2013). Passion: Does One Scale Fit All? Construct Validity of Two-Factor Passion Scale and Psychometric Invariance Over Different Activities and Languages. *Psychological Assessment, 25*(3), 796-809.

Morin, A.j., Marsh, H.W., & Nagengast, B. (2013). *Exploratory Structural Equation Modelling*. In Hancock, G. R., & Mueller, R. O. (Eds.), Structural Equation Modelling: A second course (2nd Ed., pp. 395-436.

Muthén, L. K., & Muthén, B. O. (2008–2013). *Mplus user's guide*. Los Angeles, CA: Muthén & Muthén.

Siegrist, J. (1996). Adverse Health Effects of High-Effort/Low-Reward Conditions. *Journal of Occupational Health Psychology, 1*(1), 27-41.

Snyder, Krauss, Chen, Finlinson, & Huang. (2008). Occupational safety: Application of the job demand–control-support model. *Accident Analysis and Prevention, 40*(5), 1713-1723.

Toth-Kiraly, I., Bothe, B., Rigo, A., & Orosz, G. (2017). An Illustration of the Exploratory Structural Equation Modeling (ESEM) Framework on the Passion Scale. *Frontiers in Psychology, 8* (1968), 1-15.

Warr, P. (1994). A conceptual framework for the study of work and mental health. *Work & Stress, 8*(2), 84-97.