Reconceptualising Engagement: A Study of Australian Academics

Doctor of Philosophy

School of Management and Information Systems
Faculty of Business and Law
Victoria University

Justine Ferrer
MARCH 2010

Doctor of Philosophy Declaration

"I, Justine Ferrer, declare that the PhD thesis entitled *Reconceptualising Engagement: A study of Australian Academics* is no more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work."

Signature_____Date_____

Abstract

The management of human capital is a strategic imperative for knowledge based firms such as universities. Human capital has been described as the investment in people necessary to build the skills and capabilities to operate at their full potential and enable them to act in ways that enhance the competitiveness of organisations. This thesis is set amidst the series of changes made to the Australian Higher Education sector that have had a profound effect on the management of its human capital. The changes have largely been driven by government policy in response to globalisation, increased competition and technological advances. As a result the climate of universities has moved to a more cost efficiency-focused managerialism. Various studies have illustrated the significant consequences for the academic workforce and the way in which work has changed in the sector. Academics now face greater accountability for the quality and quantity of their teaching and research at a time when university funding has been constrained. The results have not been all positive for the quality of academics' working lives and evidence points to heavy workloads and a steadily disengaging workforce. Despite this, many of the sectoral changes rely on an engaged and cooperative workforce to bring about greater productivity and quality of education to attract a larger share of international and domestic students.

A recent development in the search for human factors of production has been the recognition that investment in human capital results in increased organisational performance. This is also evident in greater profit margins, increased productivity, lower absenteeism and a range of related benefits. One construct associated with leveraging human capital is engagement: a measure of employee effectiveness and an organisation's investment in human capital. Various studies have demonstrated that engagement is a reciprocal device requiring organisational support as well as commitment from the employee. The study of academic engagement provides a way of bringing greater understanding to the relationship between the individual and university in this changed environment. The two aims of this thesis are: to clarify the current definitions of engagement by bringing together the constructs and concepts that contribute to engagement; and to provide insight into the dimensions that shape engagement in Australian business academics. The thesis does this in four ways:

Firstly, it brings together the various competing frameworks of engagement in an effort to enhance the clarity of the definition of engagement. Previous research suggests that engagement is composed of many interrelated factors with some common elements, particularly the emotional, cognitive and physical. This body of work has been built by scholars in management and psychology; as well as by business consultants. This research identified the consistencies and inconsistencies in the current contributions to engagement (research question 1). The main

gap in the extant engagement literature is that few if any studies have comprehensively tested this set of broadly interrelated factors to determine which ones are more likely than others to contribute to engagement. In addressing this gap, the thesis develops an empirically derived model of engagement for Australian business academics.

Secondly, this study synthesises the research literature to identify the common foundation underpinning much engagement research reflecting three engagement dimensions: emotional engagement capabilities, cognitive engagement capabilities and the individual engagement outcomes (research question 2). The study uses this triad as a platform from which to investigate engagement in university business academics.

Thirdly, the research clarifies which dimensions of engagement apply to the Higher Education sector, and identifies the antecedent variables which act in this model of engagement. In doing so the thesis contributes to a greater understanding of the drivers of engagement, the direct and indirect relationships which operate in this complex domain, and the effects of the engagement dimensions while controlling for variation from the antecedent variable (research question 3).

Fourthly, the thesis develops a more holistic conceptualisation of engagement for the sector which incorporates the three engagement dimensions: emotional engagement capabilities, cognitive engagement capabilities and the individual engagement outcomes. The thesis explores the pathways of engagement and provides insight into academic engagement (research question 4). The thesis also contributes to the dialogue on human capital and in particular, how it can be harnessed in key areas such as the knowledge industries and for targeted purposes such as the management of talent.

The research uses quantitative research methods in the form of a large scale survey of 4462 Australian business academics from the 37 publicly funded universities. The resulting useable response rate of 15% (N=664) enabled a two stage calibration and validation sample design. Analysis involved Higher Order Confirmatory Factor Analysis; Hierarchical Regression; and Structural Equation Modelling using Congeneric Factor Analysis. The findings from the questionnaire enabled the development of a model of engagement which comprises three common underlying engagement constructs: emotional and cognitive engagement capabilities; and individual engagement outcomes. Emotional engagement capabilities and cognitive engagement capabilities represent the 'feeling' and 'thinking' capabilities respectively, which enable one to engage in one's work. The third common underlying construct (individual engagement outcomes) is evident in academics being emotionally attached to their university; satisfied with their jobs and the work being done; involved in the dimensions of the job and

work; not emotionally, cognitively, or physically exhausted; and having no intention to leave the university. Support was found for each of the proposed common underlying constructs (research question 2). Antecedents to engagement incorporated two organisational characteristics (perceived organisational support and job characteristics) and four control variables (gender; age; university; and academic classification).

Research questions three and four were addressed in the development of the model and the testing of the various pathways of engagement. When controlling for the variation from the antecedent variables and the control variables, the individual engagement capabilities (emotions and cognition) were significant predictors of the individual engagement outcomes and significantly contributed to the unique variation. The thesis found that cognitive engagement capabilities represented a starting point for the development of engagement in business academics which then has a strong positive impact on emotional engagement capabilities and individual engagement outcomes. The effect on the emotional engagement capabilities was direct; however, the effect on the individual engagement outcomes was indirect (and direct only in the calibration sample) through the relationship within the emotional engagement capabilities. This thesis contributes to the literature on emotion and cognition, by finding that engagement begins with a cognitive assessment which can lead to emotional engagement outcomes, or the individual engagement outcomes usually through emotional engagement capabilities.

The emotional engagement capabilities also had a strong positive impact on individual engagement outcomes. Two antecedents were tested in the model (job characteristics and perceived organisational support). Job characteristics were found to have a strong positive impact on perceived organisational support, cognitive engagement capabilities and individual engagement outcomes. Additionally job characteristics demonstrated an indirect relationship with emotional engagement capabilities through the cognitive engagement capabilities. Perceived organisational support was found to be a positive predictor (direct and indirect) on emotional engagement capabilities and individual engagement outcomes. These findings identify the pathways for the development of engagement, providing the antecedent drivers of the core job characteristics and development of a supportive environment which will contribute to the development of each of the engagement dimensions (research question 4).

This study has particular relevance for University Human Resource managers as it can be used to enhance academic engagement for greater competitiveness. The causal links between the engagement constructs and the two key antecedents (which showed that engagement commences with the development of cognitive engagement capabilities) means HR managers must first establish a climate that enables academic involvement, motivation, dedication,

absorption and attentiveness to the job, work and organisation. By working to create the right cognitive engagement, the emotional engagement capabilities and the individual engagement outcomes will be triggered. HR managers would need then to develop the emotional engagement capabilities which are facilitated through an environment that engenders and strengthens meaningfulness, psychological resources, availability and vigour of academics. Acting together both cognitive and emotional engagement capabilities will then manifest themselves in engagement outcomes such as increased commitment, satisfaction and decreased disengagement, exhaustion and intention to quit. The implications from this thesis for engagement research more generally is the development of an engagement model with potential transferability to other faculties within universities and to other professional sectors employing knowledge workers.

Acknowledgements

In such an endeavour there are many people that need acknowledgement and thanking. I began this journey with the full support of family and friends; this has been maintained throughout the entire journey. Without all the supportive and helpful people around me I cannot imagine getting through this process. My husband, Ricardo, and girls, Caitlyn and Abbey, I have finally finished! The journey is finally over! Thanks for the loving support and caring. Ricardo, if I did not have a great husband who willingly supported me as a student, we would not have reached this end. A special message for my girls, I hope by doing a PhD that I have inspired the two of you to set high goals and work hard to achieve them. I hope that I have instilled an interest in enquiry and a desire to know more. Setting out to achieve something and putting in the work and effort will lead to your goal. To Mum and Dad, thanks for your support as parents, grandparents, baby sitters and taxi drivers, amongst all the other roles. Your assistance and support has been incredible and very much appreciated. To the generous family and friends who stuffed envelopes with me for five days straight. What a tedious task! But I would have sat there for four weeks if did not have your help, thanks for saving me.

I want to offer special thanks to my Principal Supervisor, Professor Bernadine Van Gramberg. Without her expert advice and her ability to inspire me to work hard, I doubt the completion of this beast! I enjoyed our conversations. Bernadine gave me timely advice and directed me in ways to encourage my growth as a PhD student and as an academic. Throughout this I have come to view Bernadine as a valued friend, a respected supervisor and academic mentor.

Thanks also need be given to Mr. Patrick Foley, co-supervisor, for his invaluable methods and statistical advice but also for his ability to conceptually view the entire work. I thank you for helping develop clarity in the pathways of the beast. I would also like to acknowledge Mr. Alan McWilliams who in the beginning was very helpful to me: thanks for the support throughout the PhD journey as well as the Masters. I think that if you did not offer me such great support I would never have attempted the PhD. To my fellow colleagues and students within the School of Management and Information Systems thanks to those who provided timely advice, clarification when needed and a friendly ear. To my friend and fellow PhD student, Wahed Uzzaman, we were lucky to have each other throughout this journey. Thanks for the philosophical discussions; these were welcome distractions in a journey of a lifetime and one I will not forget! I value your friendship immensely and wish you every success. To the other PhD students within the School, good luck and know with faith that you will get your desired outcomes with hard work.

To the generous academics who in their busy lives took the time to fill out my questionnaire and return it to me. I now understand the pressures put on the academic so the sincerity in my thanks is genuine. You gave me some valuable insights and power in the number of responses to give strength and robustness to my results. Thank you.

Overall, this journey has been tumultuous at times but enjoyable none the less. It was not by any means easy however, over the course of the journey I learnt many valuable lessons and made many valuable friends. A learning experience for life! Thank you.

Table of Contents

List of Figures

List of Tables

List of Statistical Notations

α	Cronbach Alpha
β	Beta – Regression Coefficent
θ	Theta – Error Variance on the Model
λ	Lamdba – Regression Coefficient on the Model
r_c	Composite Reliability
χ^2	Chi Square
χ^2/df	Normed Chi Square

Index of Abbreviations

ACIRRT	Australian Centre for Industrial Relations Research and Training
AEN	Australian Education Network
AGFI	Adjusted Goodness of Fit
AIC	Akaike Information Criterion
ARC	Australian Research Council
ARWU	Academic Ranking of World Universities
ATN	Australian Technology Network
AVCC	Australian Vice Chancellors Committee
BSIC	BSI Consulting
CEC	Cognitive Engagement Capabilities
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CLC	Corporate Leadership Council
EEC	Emotional Engagement Capabilities
EM	Estimation- Maximation Data Replacement
GFI	Goodness of Fit
Go8	Group of Eight
GWA	Gallup Workplace Audit
HECS	Higher Education Contribution Scheme
HR	Human Resource
HRM	Human Resource Management
IEO	Individual Engagement Outcomes
IES	Institute of Employment Studies
IRU	Innovative Research Universities
ISR	International Survey Research
JDI	Job Diagnostic Instrument
JD-R	Job Demands and Resources Model
JobCh	Job Characteristics
KBV	Knowledge Based View
MBI-GI	Maslach Burnout Inventory – General Inventory
NGU	New Generation Universities
OLBI	Oldenberg Burnout Inventory
OST	Organisational Support Theory
POS	Perceived organisational support
RBV	Resource Based View
RMR	Root Mean Square Residual
RMSEA	Root Mean Square of Approximation
SEM	Structural Equation Modelling
SHRM	Strategic Human Resource Management
TLI	Tucker- Lewis Index
UWES	Utrecht Work Engagement Scale
VIF	Variance Inflation Factor
VIRO	Value, Inimitable, Rarity, Organisation Framework

Publications Arising from this Thesis

Ferrer, J & Van Gramberg, B 2009, 'University academics in the 21st century: Continued issues of organisational attachment', in B Lloyd-Walker, S Burgess, K Manning & A Tatnall (eds), *The new 21st century workplace*, Heidelberg Press, Heidelberg, Victoria, pp. 87-100.

Ferrer, J, Foley, P & Van Gramberg, B 2009, 'Does a positive work environment enhance organisational attachment in university academics', paper presented to 23rd Australia and New Zealand Academy of Management Melbourne, Australia. 2-4 December.

Ferrer, J 2008, 'Greater clarity for engagement: A research strategy for the Higher Education sector', *Journal of Science, Technolology and Management*, vol. 1, no. 2, pp. 61-73.

Ferrer, J & Van Gramberg, B 2008, 'The ongoing battle for organisational attachment: The affective commitment of Australian business academics', paper presented to 22nd Australian and New Zealand Academy of Management, Auckland, New Zealand, 3-5 December.

Ferrer, J & Van Gramberg, B 2007, ''Engaging': The dominant frameworks', paper presented to 21st Annual Australia and New Zealand Academy of Management, Sydney, Australia, 5-7 December.

Ferrer, J & Van Gramberg, B 2006, 'The engagement of academics at work: A research strategy', paper presented to 20th Australian and New Zealand Academy of Management Conference, Yeppoon, Queensland, 6-9 December.

Chapter 1 : INTRODUCTION TO THE RESEARCH

The management of human capital is fast becoming a strategic imperative in knowledge based firms such as universities. The management of knowledge and the knowledge worker thus becomes paramount. There is a body of research that has investigated humans as the key components to organisational success commonly referring to as an organisation's human capital (Becker 1962, 1975; Coleman 1988). Human capital is an investment in people so they can operate at their full potential (Becker 1975) in an effort to 'bring about skills and capabilities that make them able to act in new ways' (Coleman 1988, p. 100). It is also seen as 'the quality of the individual human talent recruited to a firm and retained in it' (Boxall & Purcell 2008, p. 100). The Harvard Business School approach to the idea of increasing human capital resulted in the school of thought termed: Human Resource Management (HRM) (Beer et al. 1984). The focus on increasing human capital or maximizing the employee aspect through HRM represents an effort to positively impact the bottom line. From a strategic human resource management (SHRM) perspective human capital is an important resource which the organisation can manipulate in its best interest as a source of competitive advantage (Boxall & Purcell 2008). Human capital is believed to be the key in successful organisations with; greater profit margins, increased productivity, lower absenteeism and its benefits (Crabtree 2005; Echols 2005; Gubman 2004; Purcell et al. 2009).

A more recent development in the search for human factors of production has been the recognition that investment in 'human capital' results in increased organisational performance (Boxall 1993; Boxall & Purcell 2008; Echols 2005; Purcell et al. 2009). This concept centres on the empowerment of individuals or groups through training or provision of capabilities such that they have a level of autonomy and discretion, which they use to contribute to the production system. Human capital is becoming a key resource for an organisations competitive situation (Boxall & Purcell 2008; Lepak & Snell 1999, 2007).

Some of the constructs identified as being linked with the effective leveraging of human capital include organisational commitment, organisational citizenship behaviours and job satisfaction. Organisational commitment measures the extent to which employees feel loyalty and a sense of belonging to the company, while organisational citizenship behaviours reflect the traits that contribute to organisational performance. Job satisfaction reflects the extent to which employees receive pleasure from their work. These three factors have been key drivers in organisational and

employee effectiveness within the organisation. Another human factor of production is employee engagement; which according to Gallup research is seen as a measure of employee effectiveness and an organisation's investment in human capital (Echols 2005). Research has suggested that commitment (Harter, Schmidt & Hayes 2002; Robinson, Perryman & Hayday 2004), organisational citizenship behaviours (Robinson et al. 2004) and job satisfaction (Harter et al. 2002; McDade & Mackenzie2002) are considered to be the crucial constructs of engagement.

Much of the engagement research has stemmed from Kahn (1990) whose groundbreaking work distinguished between being engaged or disengaged at work. He believed that each role a person performs is only as good as the degree of 'self' that was incorporated into that role. The more involved employees are at work the greater their performance. Another body of research emphasising engagement has been that of Harter et al. (2002) and McDade & Mackenzie (2002). Their ideas of engagement are based upon Brayfield & Rothe's (1951) concept of job satisfaction: if employees are satisfied with their job then they have some degree of engagement with the organisation. Robinson et al. (2004) and Luthans and Peterson (2002) identified engagement as being reciprocal in nature. In other words the organisation must provide something of value to the employee for engagement to be demonstrated (for example in the form of increased commitment or exhibition of citizenship behaviours).

There have been many contributions over time extending Kahn's (1990) work, particularly in the areas of psychology (Demerouti, Bakker, de Jonge, et al. 2001; Gonzalellez-Roma et al. 2006; Langelaan et al. 2006; Llorens et al. 2007; May et al. 2004; Olivier & Rothmann 2007; Schaufeli & Bakkar 2004); management (Elsey 2005; Haudan & MacLean 2002; Saks 2006; Woodruffe 2005); and from business practitioners and consultants (Clifton & Harter 2003; Harter et al. 2002; Harter et al. 2003; ISR 2004b; Johnson 2004; Robinson et al. 2004; Towers Perrin 2006). Many competing contributions can be linked to Kahns' (1990) idea that engagement encompasses emotion, cognition and physical dimensions (Ferrer & VanGramberg 2007). This suggests that engagement is not specific to any one dimension but is a broad based term.

From the above discussion it is clear that the concept of engagement has evolved from the development of a range of similar and interrelated constructs. This has contributed to a variation in the definitions of engagement in the literature along with a conceptual overlap. The main gap in this literature is that few if any studies have comprehensively tested the broad interrelated factors to determine which ones are more likely to contribute to engagement than others. Additionally, the research on engagement has thus far not focused on academics; an important professional group. Changes in Higher Education make this research poignant particularly for

the benefit of university policy and human resource practices, in an era of change. Focusing on the Australian Higher Education sector, in particular business academics, this thesis provides empirical research to paint a more complete picture of engagement. The next section details the research issue and the questions which form the parameters of the study.

1.1. The Research Issue and Research Questions

Engagement definitions have encompassed the embodiment of employee effectiveness at work including notions of: employees putting in extra effort for the benefit of the organisation (Kahn 1990); employees having a sense of feeling involved and actually enjoying their work (Greenfield 2004; May et al. 2004); and employees having a strong and valuable connection to the organisation (Gubman 2004; May et al. 2004). Hence there has been much discussion in the research around defining and measuring this concept (BSI-Consulting 2007; Harter et al. 2002; Macey & Schneider 2008; McDade & McKenzie 2002; Robinson et al. 2004; Saks 2006, 2008). In parallel to the research contribution to engagement, the human resource consultancy profession have also used engagement models in an attempt to create more effective and efficient employees, with a view to greater organisational productivity and better organisational performance (Crabtree 2005; Echols 2005; Gubman 2004; ISR 2004a; Towers Perrin 2003). The consultants have developed various consulting tools with the intention of providing organisations with competitive distinction and in doing so have contributed significantly to the engagement domain.

There are few if any studies in the research literature which examine the interrelated factors that determine engagement and few which bring together the contributions of research scholars and consultants. Utilising a sector focus to the investigation of engagement, this study concentrates on Universities within Australia. The aim is to clarify the current definitions of engagement by bringing together the constructs and concepts that contribute to engagement from the research and practitioner frameworks. It also aims to provide insight into the dimensions that shape engagement in business academics in Australia. The aims addressed in this thesis are answered in the following research questions:

RQ1   What are the consistencies or lack of consistencies in how engagement is used in the literature?

RQ2   For Australian business academics, does engagement consist of common underlying constructs that subsume many of the existing concepts of individual workplace connectedness along emotional, cognitive and outcome dimensions?

RQ3   For Australia business academics to what extent do emotional and cognitive workplace connectedness variables explain additional variation in the individual workplace

connectedness outcomes after university structure, demographics and work context variables are controlled for?

RQ4   Can a model of engagement derived from individual workplace connectedness variables organised into emotional, cognitive and outcomes dimensions be used first to identify pathways of engagement for Australian business academics and secondly provide insight into academic engagement?

1.2. Justification for the Research

The Australian Higher Education sector is the third largest export industry in Australia according to the Australian Bureau of Statistics (ABS) and accounts for approximately 5% of the Gross Domestic Product (DEEWR, 2008). Many changes imposed on the sector by successive governments have been made with the aim to increase the sector's competitive position globally. This research is justified on the basis that it will contribute to a better understanding of employee engagement in the Higher Education sector which in turn may lead to greater sector productivity.

In Australia, it has been estimated that engaged employees only account for 20 percent of the workforce, while 62 percent are seen as not engaged and 18 percent are disengaged (Hooper 2006 based on Gallup Research). This disengaged workforce is said to cost the Australian economy 31.5 billion a year through decreased productivity, sick and stress related leave and behaviours such as sabotage (Bretherton, Bearfield & MacDermott 2006). Similarly, Echols (2005) reported that disengaged employees cost the US economy approximately 300 billion dollars a year due to workers' low activity.

Conversely, engaged employees contribute to greater productivity and profits. A study in the United States by the Gallup Institute (Echols 2005, p. 45) noted that the use of engagement initiatives in organisations resulted in higher profit margins (44%), increased employee productiveness (50%) and customer loyalty increased by up to 50%. Crabtree (2005) posited that engaged employees are less likely to suffer from stress and health implications related to work. These statistics present the economic imperative underpinning engagement research for the Australian National Economy and organisational effectiveness and thus represent a key rationale for the current research.

In addition, developments within organisations focused on leveraging of human capital have important strategic benefits for organisations. Research has explicitly linked human capabilities practice and organisational performance (Kinnie, Hutchinson, Purcell, Rayton & Swart 2005). So an investment in engagement initiatives for the benefit of developing and leveraging human capital will ultimately bring strategic success and competitive advantage. In the current research

context of academia, the leverage of knowledge as the key capital asset becomes of strategic importance (Kang, Morris & Snell 2007; Lepak & Snell 1999, 2007). For academics to use their knowledge for value creation purposes becomes a key to university success especially within the current competitive climate. Engaged academics have the potential to contribute fully to the universities competitive situation. The results of this thesis will provide Universities with a greater understanding of engagement and the drivers in this sector.

1.2.1. Contribution to the Study of Engagement

This thesis contributes to knowledge in a number of ways. Firstly, it contributes to a more cohesive definition of engagement. The research suggests that engagement is composed of many interrelated and similar dimensions (Harter et al. 2002; Luthans & Peterson 2002; Macey & Schneider 2008; Robinson 2007; Robinson et al. 2004; Saks 2006, 2008). In prior research many factors have been identified as significant and contributing to engagement, many of these are uni-dimensional individual workplace connectedness variables. This study brings together many contributions to assist in clarifying the engagement domain and highlighting the consistencies and inconsistencies within the current literature.

Secondly, the thesis contributes to a greater understanding of the drivers of engagement and the direct and indirect relationships which operate in this complex domain. It identifies emotional, cognitive and outcome dimensions as important for engagement. In doing so the thesis develops a new conceptualisation based on the key inter-connects and overlaps in the current research.

Thirdly, the thesis contributes to the development of a model of engagement which identifies the key dimensions relevant to engagement in business academics. The model will bring conceptual clarity to an otherwise complex domain.

1.2.2. Contribution Towards the Research Methodology

This research identifies the key factors that contribute to the engagement of academics in the Australian Higher Education Sector. There are many interrelated factors that impact or contribute to engagement as defined by the current research domains espoused by management and psychology academics and by consultants. Due to the varied nature of engagement from these different disciplines, this research has warranted a different investigative approach. In attempting to bring the definitions together this research uses a unique higher order construct approach to examine the relations between the many variables constituting engagement once established, this thesis will develop an engagement model (structural) for testing. Macey and Schnieder (2008) propose a similar type of structural approach as a suggestion to bring

understanding to engagement however, it differs in the understanding of what constitutes engagement.

1.2.3. Potential Usefulness of Findings

The study is significant to universities in the Australian Higher Education sector as the identification of key factors and variables that constitute engagement could assist university management in and enhancing academic engagement. This has potential to lead to initiatives that are aimed at enhancing engagement levels which as the Gallup research suggests could lead to greater organisational productivity (Echols 2005). To leverage human capital effectively requires the alignment of human resource practices with the strategic directions of the organisation (Kinnie et al. 2005; Purcell et al. 2009). In this context, the engagement research in this thesis could potentially influence the development of human resource policies and practices by identifying the key variables needed for Australian business academics to engage. Academics can be considered as knowledge workers because of their contribution to knowledge creation and development of future knowledge workers. The model developed in this thesis has potential transferability to the management of academics from other disciplines or faculties, as well as to other types of knowledge workers in a variety of industry contexts. Finally, the thesis may bring some consensus to the engagement domain through its bringing together of the many contributions from scholars and practitioners.

1.3. Overview of the Method

The aims of the research encompassed the expansion and illustration of the constructs and concepts that contribute to engagement relevant to business academics in the Australian Higher Education sector and to identify the pathways for engagement. A quantitative research approach was used, through the use of a questionnaire that would bring together the varied engagement dimensions identified in past research. To answer the research questions the research used a number of statistical analyses in order to bring an enhanced robustness to the research results.

Different statistical methods were used at three levels, which aimed to answer the research questions. Beyond the overview statistics of the sample, the first level of the data analysis provided for the established of common underlying constructs. These common constructs were used to bring together some of the engagement dimensions to represent the conceptual idea that engagement is composed of emotional engagement capabilities, cognitive engagement capabilities and the individual engagement outcomes. Higher order confirmatory factor analysis (CFA) was used to determine the existence of shared variance between the identified variables (Hair et al. 2006) which would help to simplify a complex model.

Once established as having the characteristics representative of a higher order constructs (common underlying construct), the research then moved on to test the full engagement model. To test the model, hierarchical regression and Structural Equation Modelling was used. The intention of the two methods was to develop a robust model of engagement that identified that significant relationship between the variables.

1.4. Outline of the Thesis

In this section the structure of the thesis is outlined, foreshadowing the entire thesis.

Chapter 2 provides the literature review, through bringing together the many and varied contributions to engagement research within the current research climate to identify the consistencies and inconsistencies between the varied contributions. It draws out and illustrates the clear lack of consensus as to what engagement actually is. In identifying the consistencies and inconsistencies this chapter addresses research question one (RQ1). The chapter highlights in detail the reluctance of researchers in general to support one definition of engagement but notes that Kahn's (1990) engagement dimensions (emotion, cognitions and physical) appear to be an underlying structure to which many of the engagement contributions can be linked. Identifying the common dimensions in many of the other engagement contributions builds the platform to view engagement for this thesis.

Chapter 3 provides the context for the investigation of engagement – business academics within the Australian Higher Education sector. The Australian Higher Education sector has seen considerable change: government reforms, globalisation, increases in information technology, societal changes and competition. The result has been a change to the fundamental core and ethos of Higher Education institutions. Arguably, Higher Education managers now take a more managerialist approach to the operation of their institutions. Within the context of change in this sector, the role of the academic has altered. This chapter details impact the many changes within this sector have had on the role of the academics. Contextual variables that are unique to this sector are identified as significant when determining engagement in addition to the specific organisational characteristics used for this study.

Chapter 4 presents the development of the conceptual framework for the investigation of engagement and the propositions for testing the engagement model. The framework for engagement incorporates emotional, cognitive and outcome engagement dimensions. This idea has been adapted from the consistencies and inconsistencies identified in Chapter 2 (RQ1) to develop engagement as all encompassing of the many contributions. The dominant engagement dimensions include engagement capabilities and outcomes. The individual engagement

capabilities are the emotional and cognitive capability requirements to be psychologically present at work (Kahn 1992). The individual engagement outcomes are the consequences of having the emotional and cognitive capabilities. The framework also proposes a supportive organisational environment and job design (characteristics) are important antecedents for each of the engagement dimensions. The contextual variables identified in Chapter 3 specific for academic samples, are discussed in terms of their impact on the conceptual framework and the variations that they may impose on the engagement model: proposing that engagement is composed of three dimensions, emotions, cognitions and outcomes. The chapter then brings together the various contributions to engagement under these dimensions. Propositions are developed which reflect the engagement dimensions as having common characteristics of higher order constructs incorporating the previous contributions. In this section the theoretical arguments and empirical results of many previous studies are brought together to establish the argument and justification for the presence of common underlying constructs (RQ2). The higher order constructs together fall under the following conceptualisations: emotional and cognitive engagement capabilities and the individual engagement outcomes. Overall 11 propositions are developed for this research which seeks to address research questions 2-4. The thesis suggests that by utilizing the conceptual framework presented many of the current engagement contributions can be investigated which will provide greater clarity in the area of engagement.

Chapter 5 provides two key functions: hypothesis development and the research design. Firstly, this chapter identifies the scales used to measure the selected engagement constructs based upon proven reliability and validity as pre-established measures. Then using the conceptual framework, testable hypotheses are developed. These seek to answer the research propositions introduced in the previous chapter. It was first necessary to establish the common underlying constructs because this would become an essential component in developing and testing the model of engagement. The methods for the investigation of engagement are detailed in this chapter as well as the steps taken, data preparation, overview statistics and measurement dimensions in preparation for more advanced data analysis techniques. The advanced statistics incorporated higher order Confirmatory Factor Analysis (CFA). Hierarchical regression and full Structural Equation Modelling (SEM) are adopted to test the relationships and paths using the full hypothesised model. The SEM utilised a Maximised Reliability approach using Congeneric Factor analysis.

Chapter 6 details the results of the research. The chapter begins with an overview of the sample and a discussion of the measurement dimensions. Emotional engagement capabilities, cognitive engagement capabilities, and individual engagement outcomes are established as having the properties that represent a higher order construct, which addresses RQ2 (the engagement

contributions represent common underlying constructs). These are then used to develop and test the engagement model. The results of the engagement model address RQ3 (the effect of the engagement capabilities on the individual engagement outcomes) and RQ4 (the identification of the pathways of engagement for business academics). Briefly, the chapter explains that hierarchical regression established significant relationships between the variables at the various levels based upon the conceptual model. The overall measurement model held with various iterations and alterations based on theoretical and empirical foundations. The full model was tested using a maximised reliability method. Using the factor loadings, the reliability of the composite was established based on congeneric factors (the calculations of which are presented in Appendix A3). Not all 23 hypotheses were supported as predicted; however, the final model supports the conceptual model. Chapter 6 concludes by describing the engagement of academics as the interaction between emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes as directly and indirectly influenced by perceived organisational support and the characteristics of the job. This was established in a calibration sample and replicated with a validation sample.

Chapter 7 brings together all the key results found in this study and discusses these in relation to the relevant literature. The chapter develops additional support for the final engagement model in addition to the common underlying constructs and the causal paths. This chapter present the final model and discusses the implications of this model for the management of academics within the Australian Higher Education sector and the implications for engagement research. The chapter concludes with a discussion of future research directions built from the thesis results and the implications of these results.

The final Chapter 8 presents the main conclusions developed from this thesis. It begins with a summary of the overall thesis and the key limitations of the research are discussed. Following this each of the key conclusions are made.

1.5. Limitations of the Scope and Assumptions

Most research is subject to the limitations and assumptions made. Research is limited by time frames and human ineffectiveness. As human beings we are limited by our intellectual capacity. Within this thesis the key limitations and assumptions made are presented below:

Despite the comprehensiveness of this work, a key limitation associated with the research is the conceptualisation of engagement that was used. Engagement was identified as having emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes. In order to link the various engagement dimensions into this conceptualisation the

researcher made assumptions based on the current literature as to the main or major engagement constructs to test within this thesis. As engagement is an emergent construct within the extant literature, as of September 2007, the constructs used in this thesis were the major contributors at this time (Chapter 2).

Additionally, the researcher has approached the term engagement as being an overarching concept that captures all the different types of engagement in the literature. In other words engagement as proposed within this thesis encompasses: role engagement, work engagement, personal engagement, job and organisational engagements, employee engagement, and state engagements. This type of approach has not previously been attempted and as a result assumptions were made that these various contributions are related through such an overarching framework. Indeed, the commonality of the three foundations (emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes) lends support to such an assumption.

1.6. Chapter 1 Summary

This chapter has outlined the aims and research questions for this thesis. It was established that the engagement research domain is diverse and approached for many areas and in many different ways. This has contributed to a lack of understanding and consensus in this area; this provides justification for clarifying research on engagement. The context for the research is academics within the Australian Higher Education sector. This is a sector that has been subject to significant change which has impacted on the role of academics, making engagement research in this domain, timely and relevant.

To establish engagement within the current climate and context, two major aims of the research were identified. The first is to clarify the current domain of engagement and the second is to develop an understanding of engagement in Australian business academics. Based on these aims four research questions were identified. This chapter also provided justification why this research is important for academics, for the area of engagement, and the economic imperative. The methods for this research were introduced as quantitatively driven through a questionnaire and subsequent statistical analysis. The entire thesis was outlined chapter by chapter to demonstrate the logical flow of the research design. Finally, this introductory chapter presented the limitations to the scope of the research and assumptions made. This encompasses the conceptualisation of engagement that was used in this research and assumptions made regarding the approach and view of engagement for this thesis.

The next chapter introduces engagement and begins to identify the consistencies and inconsistencies within the engagement research. The chapter will then bring together the many literature contributions in an effort to identify some consensual dimensions within the engagement domain.

Chapter 2 : LITERATURE REVIEW ON ENGAGEMENT

The concept of engagement was introduced as an organisation's investment in their human capital. The previous chapter provided an overview the context of this thesis: the Australian Higher Education sector and the broad theoretical ideas underpinning engagement. This chapter moves to investigate the international research literature on engagement in its varying contexts as they exist from the perspectives of organisational consultants and researchers from the fields of management and psychology. The chapter brings together these various contributions which frame the ideas and arguments upon which the thesis is based.

Chapter 2 traces the development of the discussion that humans have been identified as a key element in an organisations competitive situation. An analysis of the various ideas that have impacted on the development of what is now termed 'engagement' is then presented. From this, engagement as its own concept is detailed including the history of the development of engagement and the seminal work in the field. Engagement is then distinguished from some of the other more prominent concepts, for example organisational commitment. The journey then progresses through to the more recent academic contributions detailing the (often conflicting) definitions underpinning engagement research. The chapter draws attention to the underlying need for the present research to bring about consensus and understanding to the area of engagement. Finally, the underpinning engagement dimensions are identified with the potential to link may current conceptualisations together. The model of how engagement is investigated is introduced.

2.1. Human Capital, Knowledge Management and Value Creation

Human capital is noted as one of the most important factors in organisations in the current competitive climate, and the management of human capital is seen as important dimension for an organisation's strategic position (Becker 1962, 1975; Boxall & Purcell 2008; Coleman 1988). Human capital is defined as an investment in people so they operate at their full potential (Becker 1975) in an effort to 'bring about skills and capabilities that make them able to act in new ways' (Coleman 1988, p. 100). It is also seen as 'the quality of the individual human talent recruited to a firm and retained in it' (Boxall & Purcell 2008, p. 100). From a strategic (SHRM) perspective human capital is an important resource which the organisation can manipulate in its best interest as a source of competitive advantage (Boxall & Purcell 2008). In more recent times SHRM has been linked to transactional cost theories which provide a greater focus on internal resources of the organisation (Kang et al. 2007). Huselid, Becker and Beatty (2005) suggest a greater focus on workforce development rather than a cost minimisation focus will have a

greater overall impact on organisational performance. The perspective now often used is that of the resource based view (RBV) or the knowledge based view (KBV) of the organisation. The RBV is based on the organisation being able to develop its competitive advantage from the effective use and leverage of its resources be these human, technical or financial (Boxall & Purcell 2008). Resources are anything in the organisation that has value creating capabilities. According to Grant (2008) the key resources of any organisation are the tangible, intangible and human.

Human resources comprise the 'expertise and effort offered by the employee' to the organisation (Grant 2008, p. 133) and not only includes interpersonal human elements but also contextual elements of the organisation. In addition the RBV believes that humans can provide a distinct resource advantage. Simply put, if the right people are in the right jobs with the right knowledge the combination acts to the organisation's benefit (Boxall & Purcell 2008). In the RBV the desirable resources are those that are valuable, un-imitable (or unique to the firm and difficult to replicate elsewhere), appropriable and exploited by the organisation. In similar comparison to the elements of value, inimitable, rarity and organisation (VRIO) framework developed by Barney (2002). To gain competitive advantage using the VRIO framework a resource or capability will be valuable, rare, costly to imitate and the organisation will exploit this resource. This draws parallel with Lepak and Snell (1999, 2007) who identify employees as unique with high strategic value. Alternatively, the KBV sees competitive advantage as coming from the knowledge within the organisation and the use of this knowledge (Boxall & Purcell 2008; Felin & Hesterly 2007). There is an argument suggesting two key elements within an individual's knowledge capacity make that person more valuable to the organisation. These elements are tacit (unwritten or based on customs) and explicit knowledge (written or known) (Nahapiet & Ghoshal 1998) and they can be harnessed for organisational competitiveness.

In the management of human capital, the development of knowledge for competitive advantage is also important. According to Lepak and Snell (2007) there are two types of knowledge within an organisation; knowledge stocks (knowledge embedded within the person) and knowledge flows (transfer of knowledge, new knowledge and recombination of existing knowledge). A successful firm will use both types of knowledge to its advantage. To leverage knowledge to the benefit of an organisation requires innovative HR practices (Kang et al. 2007). What often happens in organisations is that knowledge stocks can become rigid and stale and this is especially so if knowledge flows are not enhanced for their strategic value (Leonard-Barton 1995 in Kang et al. 2007). Lepak and Snell (1999) developed an HR architecture that is focused on leveraging human capital through links with the HR strategy. This approach assists in the management of the knowledge worker.

The knowledge worker is defined as 'employees who apply their valuable knowledge and skills (developed through experience) to complex, novel and abstract problems in environments that provides rich collective knowledge and relational resources' (Swart 2007, p. 452). In the management of knowledge workers Purcell et al. (2009) argued that there are three key tensions. Firstly, organisations develop their employees to service the needs of customers and this subsequently makes employees attractive to other firms. Secondly, organisations seek to develop the skills and knowledge specific to their organisations, whereas employees generally want to develop transferable skills and knowledge. This is particularly true for professional employees whose skills are governed by professional associations and whose qualifications are nationally recognised. This supports the idea that professional employees may be more committed to their work than to their organisation (Kinnie et al. 2005). The third tension noted by Purcell et al. (2009) is that employees work hard to develop their skills and knowledge, so they have a high sense of ownership. Organisations seek to gain maximum value from their employees' knowledge and skills therefore and the tension often results in high salaries and benefits for those employees in return for retention (amongst other things).

The management of individuals from a RBV or KBV perspective will ensure that the organisation gets value from leveraging human capital and their knowledge (Felin & Hesterly 2007). It is argued that proper understanding and development of knowledge can result in value creation in the organisation. Grant (2008) demonstrated the key link between leveraging organisational resources (tangible, intangible and human) and organisational strategy results in subsequent competitive advantage. Similarly, Lepak and Snell (1999) argued that organisations need to nurture the various groups within it, in order to get the most value from them. Value creation according to Bowman and Ambrosini (2000) incorporates both use value and exchange value. Use value is the quality of the product, service or job for the user and is a subjective value, based on the user's perception of how valuable the product, process or service is (Bowman & Ambrosini 2000, p. 4). Exchange value is the money exchanged for the product, service or process, and this is realised when the product is sold (Bowman & Ambrosini 2000, p. 4). Knowledge workers have the potential to develop value through their knowledge creation potential. In addition to the management of overall human capital for value creation, uniqueness and value of human capital, knowledge has become a significant commodity in the current economy.

Lepak and Snell (1999) developed the concept of a HR Architecture which deals with levels of employee knowledge and skills and the unique value of them. This provides a working model of managing human capital (Boxall & Purcell 2008) and knowledge based HR strategies (Purcell et al. 2009). This requires high investments in the development and empowerment of these talented

individuals. Lepak and Snell (1999) argued that in many organisations the management of human capital is single minded and that all human capital is treated the same. However, the authors argued, this should not be the case. To enhance the performance of an organisation, human capital should be treated based upon its value and uniqueness for competitive advantage (Lepak & Snell 1999, 2007). The architecture recognises different subgroups within an organisation; each with different value adding components: 'some employees add value by efficiently performing well-defined tasks while others add value for their unique role or critical contributions towards competitive advantage' (Lepak & Snell 2007, p. 227).

Using the HR architecture allows managers to identify core employees and other employees, and provides ways in which to manage the different subgroups of employees. This notion is supported by Purcell et al. (2009) who suggested the organisation needs to focus on developing HR practices specific to the various subgroups within the organisation, as different groups require different practices in order to increase commitment (Kinnie et al. 2005). There is some argument around the fairness of such an approach. Kinnie et al. (2005) argued the key difficulty of aligning HR practices with employee subgroups rather than with the organisational strategy is the issue of social legitimacy. Social legitimacy is the equitable, moral and legal treatment of all employees (Boxall & Purcell 2008, p. 17). Equitable treatment of employees is breached if some employees are treated differently to others. Lepak and Snell (1999, 2007) argue that the employees get what they want/ need, because they are treated as unique so therefore tailored to the needs of the employee. Nevertheless, the HR architecture remains a powerful mechanism for delivering organisational goals through differential development of human resources.

Another aspect of the human contribution to value in their organisations is the impact of their discretional effort. Kelloway and Barling (2000) proposed that employees should be seen as investors in the organisation. This is because they have considerable impact on the 'when and how' they bring including the impact of the release their knowledge. Employees determine and control their level of investment. If they do not believe that the investment is worth their effort they will withdraw their investment (Kelloway & Barling 2000). The authors noted that the 'rate of return' on an employee's investment of knowledge is seen in enhanced levels of affective commitment. This means that committed employees are more likely to provide increased discretional effort. Due to the variability of desired input into the organisation, Drucker (1999, p. 92) reported that the 'productivity of knowledge workers is the biggest challenge in the 21st century'. The HR architecture is one way of identifying the various subgroups within the organisation and determining their value and link with HR strategy. Because of the complexities of human effort, the engagement of humans as an organisational resource must necessarily be seen as different from the tangible and intangible resources in the RBV framework.

The issues associated with the management of human capital as an organisational resource, especially the knowledge worker as value creator, is fraught with complexity. This section has explored the evolution of humans as a key element in the production process. To summarise, the influence of the HR Architecture has driven the belief that there are various groups of workers within organisations who need to be managed differently. This presents issues for understanding engagement at work. As postulated above, knowledge workers may require something different based on their contribution to value creation. Clearly all individuals are capable of making an individual contribution to value creation but as Lepak and Snell (1999, 2007) argued they need to be managed if maximum strategic benefit is to be attained through their discretional effort. One way of doing this is by increasing an employee's engagement to the organisation. Engagement can be seen as the means of leveraging human capital. The concept of engagement is at the heart of this thesis and the next section moves to uncover the development of the field and its contribution to understanding the knowledge worker as an organisational resource.

2.2. The Ideas Behind Engagement

The term 'engagement' as a work related concept has a rich research history. This section outlines the major ideas which have impacted on the development of engagement built on ideas of the human contribution to organisational performance and success. It canvasses the major developments towards the contemporary conceptualisation of engagement emerging from the research literature (generally driven by academics in management and psychology) and from the contribution of engagement consultants and practitioners.

2.2.1. Significance of Engagement as a Form of Human Capital

Engagement has increasingly been seen as a way of measuring employees' commitment to their organisations and their jobs and as a way of creating more highly effective workplaces (CLC 2004; Robinson et al. 2004; Seijts & Crim 2006; Towers Perrin 2003). Many HR consultants use engagement models in an attempt to market to organisations the possibility of creating more effective and efficient employees who will deliver greater organisational benefits and better organisational performance (Crabtree 2005; Echols 2005; Gubman 2004). Clearly, organisations respond to this because they have identified the need to invest in human capital to achieve maximum efforts from their employees and to be able to create success in highly competitive global markets. Engagement is an organisation's measure of its investment in human capital. In other words, as the organisation invests in the human element at work, then employees are more likely to be engaged at work (Echols 2005).

Not surprisingly, research has emerged that gauges the organisational and economic benefits of an engaged workforce. A study by the US Gallup Institute (Echols 2005) noted that through the

use of engagement initiatives organisations reported higher profit margins (44%), increased employee productiveness (50%) and customer loyalty increased by up to 50% (Echols 2005). On the other hand, it was suggested by Echols (2005) reporting on Gallup research that disengaged employees cost the US economy approximately 300 billion dollars a year due to low activity from disengaged workers. Further, Crabtree (2005) reported that engaged employees are less likely to suffer from stress or adverse health implications related to work. In Australia these costs are similar to those reported in the US study when adjusted for population size (Bretherton et al. 2006). Many claims have been made regarding the increased performance driven from engaged employees, these are made in the professional literature (consultants) and lacks the academic rigor. Consultant measures of engagement are not publically available for scrutiny and validity testing by independent research. It is necessary to be wary in the interpretation of the statistics presented by consultant groups. Nevertheless, these statistics illustrate the contribution and importance of engagement research to organisations, employees and to national economies. Harnessing this human element is seen to be the key to greater profitability and productivity as well as to a greater understanding of the functioning of people as an organisational asset.

To be engaged from an employee's perspective is equally important. Arguably, employees want the best possible relationship with their organisation and they want to be provided with the best possible circumstances, environment or management initiatives that will make them happier, feel valued and feel involved in the organisation (Robinson et al. 2004).

With this brief introduction, the next section moves to build a picture for understanding what engagement is and where it was derived.

2.2.2. Early Conceptualisations of Engagement

To put a context to the term engagement it is necessary to establish how and where it was derived. In an early discussion of the term, Watson and Tellengen (1985) discussed engagement and disengagement as mood states. Mood engagement incorporates ideas of arousal, astonishment and surprise, whereas disengagement incorporates, quiescent, quiet and still. Kahn (1990) first introduced the terms 'personal engagement' and 'personal disengagement' to refer to employees performing at work. Kahn (1990, 1992) introduced these terms in a theory driven from an ethnographic approach where he spent large amounts of time in workplaces assessing what he termed 'personal engagement'. Some engagement researchers have also used Watson and Tellengen (1985) distinction from which to investigate engagement at work (see Rothbard 2001, Schaufeli and Bakker 2001, 2004 and Langelaan et al. 2006).

From a practitioner perspective, engagement or ideas of engagement, such as commitment and job satisfaction, have been researched and reported since the mid 1980s by the Gallup Institute (Buckingham & Coffman 1999). Academically, Kahn (1990) empirically distinguished between being personally engaged and personally disengaged at work. This, he explained (1990, p.692) is exhibited through the degree of self that employees bring into their work role. To be personally engaged with one's job is to be compelled physically, emotionally and cognitively to one's work. Engaged workers are those who feel they have been offered the right conditions at work in order to display their preferred self and have a psychological connection to the people, the task and to the organisation.

Disengagement, by contrast, is demonstrated in a lower degree of self present at work, for instance a withdrawal of self in the job role. Kahn (1990, p.670) related the idea of being personally disengaged at work to ideas of burnout and lack of effort. This is discussed further in section 2.3.2.1. Disengaged people act as the job role strictly dictates, but not how they would ideally see the role should be done. Consequently, they are often 'robotic' in their performance as described by Hochschild (1983) or retired on the job (Drucker 2006). When employees do display their preferred engaged selves at work, their psychological presence is said to be increased (Kahn 1992). When psychological presence is 'fully there' at work (Kahn 1992) this extends to greater involvement and greater participation in the task and in the work environment. Kahn (1990) defined engagement in terms of its emotional, cognitive and physical dimensions. He said to be psychologically present and expressing one's self fully would translate into emotional (emotionally able to engage the self at work) cognitive (cognitively able to engage the self at work) and physical (physically able to engage the self at work) engagement dimensions (Figure 2-1).

Kahn (1990) likened the experience of personal engagement and disengagement to the ideas put forward by Hackman and Oldham (1980) who described the critical psychological states of; meaningfulness, responsibility and knowledge of outcomes. These states are critical to the development of motivation and satisfaction. Kahn (1990) adapted this and identified three psychological states or conditions for engagement (meaningfulness, psychological safety and psychological availability). He explained that 'the three conditions reflect the logic of actual contracts. People agree to contracts containing clear and desired benefits and protective guarantees, when they believe themselves, to possess the resources necessary to fulfil the obligations generated' (Kahn 1990, p. 703). In other words, people agree to certain behaviours in the consideration of their contracts. Levels of personal engagement will vary according to the perception of benefits that will be received. The three conditions (meaningfulness, psychological safety and psychological availability) are important in the development of personal engagement

and are briefly considered below. Each of these dimensions reflects an emotional/ affective state at work.

Meaningfulness has its basis in the idea that people will receive adequate value for their input into the task as a type of exchange. The idea encompasses being able to give and receive to others and to the job. Job tasks, role characteristics and work interactions all influence the perception of meaningfulness. In contrast, psychological safety is focused on the social systems at work. It is the degree to which a person feels safe to be personally engaged. Safety is impacted on by interpersonal relations, group and inter-group dynamics, management style and process and organisational norms. Harassment at work for instance will act to lower psychological safety and render affected workers less likely to engage. Finally, psychological availability is concerned with the individual distractions that are faced when bringing oneself into the work role. It involves having the psychological resources available to actually engage at any one time. This is particularly influenced by physical energy, emotional energy, insecurities and the impact of what is happening in life outside of work. The three psychological states impact on the degree to which individuals can bring their 'self' into the performance of their work roles and show a personally engaged state. May et al. (2004) developed a model which indicated that all three of the psychological conditions are important to a person's level of engagement. Figure 2.1 presents an overall summary of Kahn's (1990) conceptualisation of engagement, where the psychological conditions impact upon the psychological presence in the way of emotions, cognitions and physical dimensions.

Psychological Conditions	**Psychological Presence**
Meaningfulness	Emotion
Safety	Cognition
Availability	Physical
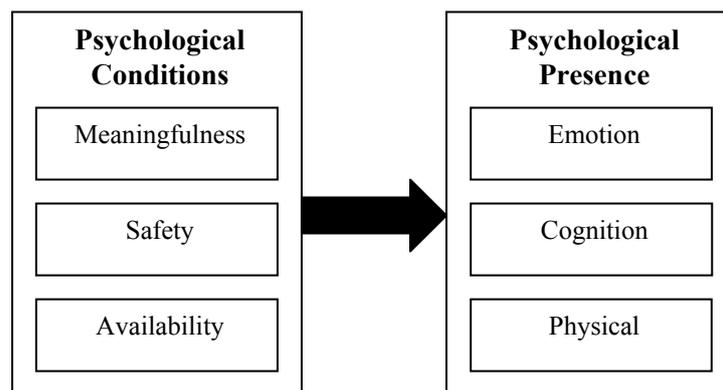
Figure 2-1 Personal Engagement Conceptualisation based on Kahn (1990)

A key question emerging from the engagement research has been: 'engagement with what?' and in response a number of bodies of research have provided various engagement insights:

19

- work engagement (2001; Langelaan et al. 2006; Llorens, Susana et al. 2007; Schaufeli & Bakker 2004);

- organisational engagement (Saks 2006; 2002);

- personal engagement (Kahn 1990; 1992; May et al. 2004);

- employee engagement (Harley et al. 2005; Robinson et al. 2004); and

- role engagement (Kahn 1990; Rothbard 2001);

- behavioural engagement (Macey & Schneider 2008);

- state engagement (Macey & Schneider 2008).

It is argued here that as well as encompassing the dimensions posited by Schaufeli et al. (2002) and Saks (2006), the definition of engagement should also include personal engagement (which was envisaged by Kahn 1990, 1992) as well as the idea of role engagement as proposed by Rothbard (2001) which also draws comparison with Kahn's (1990) definitions. In addition behavioural engagement as articulated by Macey and Schnider (2008) draws comparison with Kahn's ideas. This would mean that a working definition of engagement becomes reflective of the all encompassing analysis of the various dimensions to which the engagement is directed (Ferrer & VanGramberg 2007). For the purposes of this thesis, the term engagement will refer to an all encompassing concept of engagement which includes all the above mentioned areas (including state, work, organisational, employee, role and behavioural engagement). This issue is taken up in Section 2.4 in consideration of competing engagement definitions.

In addition to the academic engagement domain, the consultants and practitioners have had a significant impact on the development of engagement. Many HR consultants and Management consultants market themselves on measuring and understanding employee engagement within organisations. The consultants have developed different frameworks and definitions of engagement (or one of its possible derivatives). There is a consequent 'muddying of engagement' according to Saks (2008) whereby the consultant contributions add to the already competing ideas of engagement. The difference consultants bring to the field is that their focus is on developing purchase products for businesses and in doing this they are developing their ideas of engagement as distinct from all others. This discussion is taken up again in Sections 2.3.3.

Arguably, a well rounded definition of engagement should encompass all these aspects: work, organisational, personal, role, and behavioural engagements. This follows the conceptualisation proposed by Schaufeli et al. (2006) where employee engagement was described as being both associated with work being done and with the organisation. Similarly, Saks (2006) investigated job and organisational engagement using the overarching definition provided by Kahn (1990),

where engagement is the degree of self brought into the work role and exhibited through psychological presence.

Clearly, the idea of engagement has developed in response to many contributions to enhance employee effectiveness at work. The next section will explore the major engagement contributions from the management and psychology scholars and then from the consultants.

2.3. The Current Conceptualisations of Engagement

This section discusses and analyses the contributions to engagement from the extant literature. In doing so the three main sources of engagement research from scholars in management and psychology, and the contribution of consultants will be detailed. This section will highlight the varying definitions and demonstrate the many ways the idea of engagement is perceived and articulated. This section addresses research question 1 (RQ1) which aims to identify the consistencies and lack of consistencies in how engagement is used in the literature by scholars in management, psychology and by consultants. These groups are differentiated according to their discipline focus and their research focus. Management scholars tend to have a greater focus on the organisation and the psychology scholars tend to have a greater focus on the individual. The consultant contributions are characterised through publication in non peer reviewed journals therefore not content is not subjected to the same rigorous review process. They are also identified by their explicit linkages to consultant groups. The section turns first to the contribution of management scholars.

2.3.1. The Contribution Of Management Scholars

Overall, the contribution of management scholars to the study of engagement has primarily focused on organisational case studies and the development of models of engagement for particular organisations. The contribution from this area can therefore be considered fairly limited compared with other contributions to the field, particularly as it is often focused on improving organisational productivity. Indeed, one commentator noted that whilst there have been many contributions to engagement literature, the theoretical outputs have been limited, leaving practitioner contributions as the most prevalent (Saks 2006). Nevertheless, as engagement is mainly applied to organisations, the implications for management practitioners are significant and it is relevant to commence the discussion on engagement by considering the scholarly input into engagement by researchers in the field of management.

It is evident in the management research arena that there has been little agreement on the definitions of engagement. For example, in a recent issue of 'HR in Practice' (Bretherton et al. 2006), produced by The Australian Centre for Industrial Relations Research and Training

(ACIRRT), the lack of consensus around engagement definitions was reported: 'there is currently no universally agreed definition for an 'engaged employee' (Bretherton et al. 2006, p. 1). Nevertheless, most definitions according to the report encompass the matching of individual to organisational values: 'engagement occurs when there is a positive alignment between business values and employee values' (Bretherton et al. 2006, p.1). This has been confirmed in case study evidence which indicates that to engage employees, they need an understanding and commitment to organisational goals and values (Greenfield 2004). These ideas do not encompass the state of engagement per se but rather what it means to be engaged and, in particular, what it means to the organisation. For instance, Greenfield (2004) suggested that if everyone in the organisation is heading in the same direction towards the same goals and representing the organisation's work value, then significant benefits will be produced.

Taking a different management approach, Haudan and MacLean (2002) defined engagement using words that included: being captivated and enthralled. They related the sensation of being engaged to being immersed in riveting dinner conversation or watching an exciting soccer game. In their conceptualisation, engaged employees are so focused that the task has their undivided attention and they are unaware of time. This concept is also referred to as 'absorption' (Goffman 1961; Kahn 1990, 1992; Rothbard 2001; Schaufeli et al. 2002) and has been identified as having total absorption in a task. Absorption has been likened to the idea of flow (the state in which people are so involved in an activity that nothing else seems to matter, Csikszentmihayli 2002). This is discussed further in Sections 2.3.2.2, in the context of positive psychology. The illustration of engaged employees depicted by Haudan and MacLean (2002) of being in a totally absorbed state also reflects the transitory nature of the idea of engagement: that the task has one's undivided attention for the space of a particular event, for example: the work task or the soccer match. In this sense, the author's present ideas of engagement that is different from the other management contributions as they view it as a state of being.

Alternatively, Saks (2006) approaches engagement from a social exchange perspective. The definition of engagement provided by Saks (2006) is derived from Kahn's (1990 earlier idea of psychological presence. Saks (2006) used social exchange theory to investigate engagement. Social exchange theory predicts that as relationships develop, a sense of loyalty emerges along with an enhancement of trust and commitment (Blau, P 1964). Using this as the basis for his investigation, Saks (2006) developed his own measures of work and organisational engagement that reflected psychological presence at work. Both of the scales measured only one construct each. The scale was consistent with Gallup (Buckingham & Coffman 1999) research that measured only degrees of engagement but was at odds with other engagement scales and conceptualisations of engagement which have been reflected as multiple constructs (Kahn 1990;

1992; Langelaan et al. 2006; Leiter & Maslach 2000; May et al. 2004; Rothbard 2001; Schaufeli et al. 2002). In developing his concept of engagement, Saks (2006) incorporated ideas of meaningfulness (degree of meaning derived from the job), safety (psychologically safe to employ the self at work) and availability (psychologically available, detached from other things in life, to employ the self at work) and used the idea of psychological presence at work, similar to the research approach used by May et al. (2004) in his depiction of engagement. Whilst his contribution to the field has been prominent, Saks (2006) agreed that there is no consensual definition of engagement available in the current research domain. An additional approach is that taken by Bamber et al. (2009) where engagement is put forward as the commitment and control within organisations and the relationship with the unions leading to the subsequent effectiveness of various worldwide airlines.

The other main contribution by management scholars on engagement has been the work on disengagement (this taken up in Section 2.3.2.1). Greenfield (2004) argued that disengagement is caused by a conflict of values at work. In this situation the goals of the organisation are not aligned with the organisational plans and this can cause conflicts with personal values of employees. This phenomenon is referred to as the 'façades of conformity' and suggests that there is a semblance of conformity without real employee connection (Hewlin 2003). When this happens employees are likely to become disengaged or 'disconnected' as Greenfield (2004, p14) described it. Façades of conformity occur when employees appear as though they embrace the values of the organisation when they actually do not and this is the point at which disengagement can occur. In management terms, this situation can stem from either not knowing what to do or how the job relates to the overall organisation. Secondly, it may stem from lack of communication of the organisation's values and how they relate to everyday functioning. Thirdly, it arises when organisational values do not fit with the personal values of the employee. As a consequence Hewlin (2003) noted that there can be both psychological and emotional effects. This phenomenon drives some of the management research on engagement because the alignment between employee values and those of the organisation to be engaged at work is of key importance to the productive effort of the organisation.

Despite the limited contribution of management scholars it is evident that their work begins to paint a picture of the variety and breadth of the types of definitions found for engagement. In an attempt to highlight the consistencies between their contributions (in order to create a more unified definition) it was found that some of contributions use engagement to explain greater organisational effectiveness and others to align engagement between the individual and organisation's values and goals (RQ1). In addition the general lack of consistency is evident in contributions which have described engagement as a state, which would in effect predetermine

certain outcomes for the organisation. The next section explores the contribution from the psychology scholars.

2.3.2. The Contribution of the Psychology Scholars

In contrast to the management scholars, psychology scholars have focused on individual elements in terms of human behaviour at work. This section considers engagement in a work context first from the perspective of organisational psychology before moving to examine it from a positive psychology perspective. Positive psychology investigates human behaviour and emotion from a nurturing and improvement (positive) perspective rather than a disease or disorder (negative) perspective (Seligman & Csikszentmihalyi 2000). This section will again highlight the consistencies and inconsistencies in the approach taken to engagement within the psychology domain.

2.3.2.1. Organisational Psychology

There have been many contributions to engagement based on Kahn's (1992) idea of being personally engaged or disengaged at work and on the degree of self brought to the work (May et al. 2004; Harter et al. 2004). In this section we focus on the idea of psychological presence at work. This notion was proposed by Kahn (1992) in addition to personal engagement and disengagement. Psychological presence is the state of being personally engaged and demonstrating engaged behaviours such as doing more than required for the job; being completely at ease; and enjoying the tasks. Psychological presence is influenced by models of self in role which include one's sense of security; or how safe a person feels to express him or herself; display courage; and through all this bring a degree of self into one's work roles (Kahn 1992). Schaufeli et al. (2002) considered psychological presence as possibly representing the exact anti-pole of burnout: engagement. However, the authors argued that while the idea of psychological presence is important, they criticised Kahn's (1992) work for the lack of operationalisation of the construct.

Kahn (1992) predicted that psychological presence will differ between people, even when they display the same levels of psychological meaningfulness, safety and availability (Kahn 1992). This is due to individual influences acting on psychological presence; particularly the individual cognitions and emotions associated with perceptions of the job, task or organisation. Langelaan et al. (2006, p. 528) in their work on engagement and burnout, found that individual differences do impact on those who have high or low level engagement and those who have high or low scores on burnout. Despite the findings, this idea of the individuality of engagement has not received much research attention.

Building on and developing the ethnographic work of Kahn (1990), May et al. (2004) operationalised Kahn's conceptual model of engagement. Their results indicated that all three psychological conditions: meaningfulness, safety and availability, related to an overall measure of engagement. The measures used for that study have only been repeated in one other study since using the same or similar types of measure for engagement (Olivier & Rothmann 2007). This later study tested engagement in a South African sample and again Kahn's (1990) conceptualisation with the measures developed by May et al. (2004) was reinforced.

In other research on the composition of engagement Rothbard (2001) focused on role engagement and investigated it through depletion and enrichment frameworks. The depletion framework proposes that multiple engagements can lead to individuals having a 'negative emotional response to that role' (Rothbard 2001, p.658). In other words, multiple roles can place demand or greater obligations and pressure on an individual which can lead to strain and stress, culminating in negative responses. The enrichment framework (role accumulation), on the other hand, suggests that engaging in multiple roles can have a sustaining and enriching effect on the individual, bringing pleasurable experiences. The role enrichment (accumulation) model has some similarities with the well-being approach (Schaufeli et al. 2002; Harter et al. 2003). There is a focus on a greater sense of self in the positive and individually one feels fulfilled and valued.

Engagement according to Rothbard (2001) is measured via the degree of absorption and attention employees put into their role (Figure 2-2). From this perspective, attention is defined as the time spent thinking about and concentrating on the role. Absorption, according to Rothbard (2001) indicates the intensity of one's focus, as an essentially emotional idea. The notion of absorption is also linked to ideas first proposed by Goffman (1961) and Kahn (1990) regarding the state of immersing oneself in a role. Schaufeli and Bakker (2001; 2004) also conceptualised engagement as having a proponent called absorption, which to them represented the state of being fully concentrated and engrossed in a role. Mauno, Kinnunen and Ruokolainen (2007) suggested that engagement as proposed by Schaufeli and Bakker, (2001, 2004) is consistent with that provided by Rothbard (2001). Whilst none of these researchers make the link between their terms, their ideas suggests that the propositions about absorption are all very similar, and likely refer to the same cognitive state.

```
                    ┌─────────────────────────┐
                    │        ROLE             │
                    │     ENGAGEMENT          │
                    │  ┌───────────────────┐  │
                    │  │ Absorption in role│  │
                    │  └───────────────────┘  │
                    │  ┌───────────────────┐  │
                    │  │  Attention to Role│  │
                    │  └───────────────────┘  │
                    └─────────────────────────┘
```
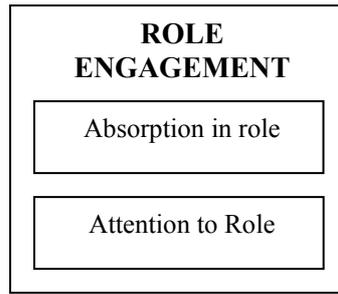
Figure 2-2 Rothbard's (2001) Conceptualisation of Role Engagement

In other research Britt, Alder and Bartone (2001) focused on meaningfulness at work and found that it had a strong relationship with perceived benefits from the job. Lack of meaning at work has been previously associated with apathy and detachment (Thomas & Velthouse 1990). Csikszentmihalyi (2002) identified apathy as being associated with low levels of challenges in the job and little by way of required skills to undertake the job. Apathy does not create situations inductive to 'flow' states or subsequent engaged states. The ideas of Csikszentmihalyi (2002) will be expanded further in the next section (2.3.2.2) in a discussion of positive psychology. Apathy is also similar to a robotic state, 'go into robot' as articulated by Hochschild (1983), which has been linked to disengagement (Kahn 1990; Luthans & Peterson 2002; May et al. 2004). Britt (1999) defined engagement in terms of the assessment of self responsibility and assessment of commitment for solider employed in overseas missions. Both of these items were measured and combined into a single measure of soldier job engagement. Bringing in ideas of responsibility adds another dimension to the engagement field.

What is evident from this section is the diversity of engagement research even within the psychology discipline. The contributions are varying but all have some connectedness to the others, and in most instances, to the work of Kahn (1990). The next section will explore the newer psychological discipline of positive psychology.

2.3.2.2. *Positive Psychology*

The area of positive psychology has been a key contributor to engagement research. The fundamental flows of positive psychology incorporate taking a positive view, as Schaufeli, Salanova, et al. (2002, p. 71) succinctly state, focusing 'on human strengths and optimal functioning rather than on weaknesses and malfunctioning' (Seligman & Csikszentmihalyi, 2000). The history of psychology in the post World War 2 years demonstrates a clear focus on the pathology of human existence and functioning, with research focused upon repairing human dysfunction (Seligman & Csikszentmihalyi 2000). Positive psychology instead aims to enhance what is already good and working well. This means enhancing and building upon subjective

positive experiences. This Section reviews the literature in the positive psychology domain with respect to engagement.

Originally, within positive psychology engagement was paired with burnout as opposite poles (Leiter & Maslach 2000). Freudenberger (1974) first introduced the term 'burn-out' and defined it as having aspects of exhaustion and being worn out from the work being done. Three burnout dimensions were identified in the work by Maslach (1982) comprising emotional exhaustion (emotionally over extended and drained by ones contact with other people, Leiter & Maslach 1988, p.297), cynicism or depersonalisation (unfeeling and callous response to other people, Leiter & Maslach 1988, p.297) and lack of professional efficacy or reduced personal accomplishment (Decline in ones feelings of competence and successful achievement in ones work, Leiter & Maslach 1988, p. 298). Maslach and Leiter (1997; Leiter & Maslach 2000) built an engagement framework from their earlier work identifying the ideas of energy, involvement and professional efficacy as signifying engagement. In other words, they argued if employees are engaged at work, it follows that they will have high energy, high levels of involvement and an increased sense of professional efficacy.

Whilst engagement according to Maslach and Leiter (1997) is the exact opposite of burnout, this conceptualisation no longer shares the acceptance it once had. Schaufeli and Bakker (2001 in Schaufeli & Bakker 2004) developed a counter engagement scale where engagement is measured independently from burnout. This was named the Utrecht Work Engagement Scale (UWES) and comprises 14 items (Schaufeli, Salanova et al. 2002). The scale measures engagement as comprising vigour, dedication and absorption. Schaufeli, Salanova et al's (2002) definition of engagement depicted it as an enduring state which was both 'persistent and pervasive'. In other words, engagement was seen as ongoing and not transitory in nature and as an all encompassing form of engagement.

Work engagement as measured by the UWES is presented in Figure 2-3. Vigour is defined as having 'high levels of energy and mental resilience while working' (Schaufeli et al. 2002, p.74). This is translated as the willingness to invest effort into the job and provided a level of persistence. Dedication is identified as 'a sense of significance, enthusiasm, inspiration, pride and challenge' from the work (Schaufeli et al. 2002, p.74). This concept is likened to that of 'job involvement' as put forward by Lawler and Hall (1970), Schaufeli et al. (2002) argued that the difference in dedication provides both a qualitative and quantitative depth to the concept: taking the concept beyond the cognitive state to include a affective dimension. The final dimension of engagement is absorption. This is the state that people enter when deeply engrossed with their work and where they find it difficult to leave their work (Schaufeli et al. 2002). The state was

similarly described as such by Kahn (1990) (see section 2.3.2.1) where to be engaged is to absorb one's self in role.
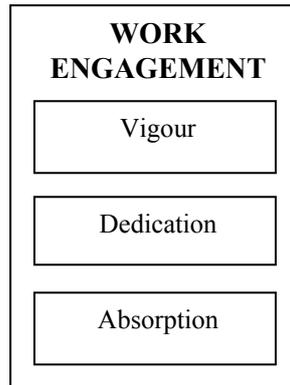
Figure 2-3 Work Engagement as measured by the UWES

Using a well-being approach, Schaufeli et al. (2002) demonstrated the underlying continuum of engagement, building upon the taxonomy of the independent dimensions of engagement and disengagement as mood states introduced by Watson and Tellengen (1985). Schaufeli et al's (2002) conceptualisation of well-being was based on the positive emotional/cognitive state of an employee, similarly to that mentioned by Kahn (1990). Schaufeli et al.'s (2002) conceptualisation consisted of two underlying well-being dimensions: activation and identification. Activation incorporates the continuum of human states from emotional exhaustion to vigour. Identification, on the other hand incorporates the range in attitude from cynicism (depersonalisation) to dedication. Together, these represent a reflection of either engagement or burnout. Langelaan et al. (2006) provided further evidence of the underlying continuum. The third engagement dimension introduced by Schaufeli and Bakker (2001) was absorption which they paired with reduced professional efficacy (reduced personal accomplishment). Both absorption and reduced professional efficacy were found to be related but did not form opposite ends of an underlying continuum. Therefore engagement, according to Schaufeli, Salanova et al. (2002, p.74), was described as:

> *a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication,*
> *and absorption. Rather than a momentary and specific state, engagement refers to a more*
> *persistent and pervasive affective-cognitive state that is not focused on any particular*
> *object, event, individual, or behaviour.*

The engagement component of absorption has been likened by Schaufeli at al. (2002) to the state of 'flow' which was conceptualized by Csikszentmihalyi (2002) and absorption is also referred to in relation to Kahn's (1990) work and to Rothbard (2000) (see section 2.3.2.1). Ideas of flow

also stem from the positive psychology school introduced by Seligman and Csikszentmihalyi (1990). Flow is defined by Csikszentmihalyi (2002, p.4) as 'the state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it.'

The concept of flow is associated with the theory of optimal experience (optimal states), where we as individuals make ourselves happier when pushing ourselves a bit further to achieve something higher. This may involve greater physical exertion or greater understanding, knowledge or skill. Csikszentmihalyi (2002, p.3) provided various examples of the theory of optimal experience. One example was that of a child who builds a block tower already taller than before and then places a last block on the tower as a measure of success. Euphoric feelings are achieved at that instant for the child in this example as a sense of flow.

The ideas of flow and optimal experience are thus related to all aspects of life, interactions, leisure and work. At work, flow is attained from either having an autotelic personality or an autotelic job. An autotelic personality is one where a person can create flow experiences from even the most mundane or barren conditions. These experiences are created through setting attainable self goals, recognising opportunities for action and, enhancing self skills and using these self skills (Csikszentmihalyi 2002). People with autotelic personalities are able to approach (for example) a repetitive labouring factory position, with a focus on creating complex tasks from the mundane. One example is that when a problem arises an autotelic person will view it as an opportunity to develop the knowledge to be able to fix the problem. In doing so, such a person will create a flow experience through setting attainable goals and getting the optimal experience from applying skills learnt to fixing the problem.

Csikszentmihalyi (2002) also identified certain jobs as being autotelic. He cited examples such as surgeons, hunters and weavers. Surgeons were described as having attainable goals with high levels of complexity, the application of many skills and opportunities for enhancement. According to Csikszentmihalyi (2002), work needs to be redesigned to enhance flow experiences and people without autotelic personalities need to given the skills and opportunities to develop themselves to have moments of flow. Job redesign needs to occur simultaneously to make workers recognise the potential for complexity and development. Even the most mundane jobs according to Csikszentmihalyi (2002) can be made more autotelic, so there is a capacity for absorption which leads to engagement.

Csikszentmihalyi's (2002) ideas on flow are similar to those of Schaufeli et al. (2002) on engagement at work. However, Schaufeli et al. (2002) argued that whilst overall, the ideas seem

similar; engagement is more enduring while flow is momentary; as the experience that warrants the sensation is achieved and then passed. Langelaan et al. (2006, p.522) acknowledged that the state of flow 'seems to act as a consequence of work engagement.' In other words, flow is what happens when one is engaged. In comparison Kahn (1990) wrote that people have moments of personal engagement dependant of their psychological conditions (states) of availability, safety and meaningfulness.

Within the psychologist contribution to engagement research, engagement has been approached in varied ways. The breadth of the contributions and variety has added to the lack of clarity in defining engagement. The section demonstrated some consistencies between the contributors and clear inconsistencies. The next section will explore the contribution of the consultants on engagement. Following the consultants the discussion will analyse the consistencies and inconsistencies to bring a greater understanding of engagement.

2.3.3. The Contribution of the Consultants

Engagement as a concept, especially employee engagement has found much support and research from consultants and practitioners, both in general management and in HR management. Consultants have used the term engagement as a means of attracting organisations to use particular consultancies (for instance training programs or change management exercises) or measurement instruments. In adding to the lack of consistency engagement in this context is focused on making employees more productive, which results in organisational benefits. In this sense, the work of consultants is close in its aims to the work of management scholars showing some consistency. However, consultant research and consultant measures can be distinguished from management scholar contributions as the former has a commercial purpose and often lacks academic rigour. Further, the concepts of validity and reliability of consultant instruments are not always scrutinised in the literature. It is because the consultant literature is so influential in this field that makes it necessary to consider it in this thesis. This section will explore some of the more popular contributions from the consultants so the section should be considered as indicative but not exhaustive. This section explores the more influential contributions from: The Gallup Institute, Towers Perrin, ISR, Corporate Leadership Council and Hewitt Associates.

2.3.3.1. The Gallup Institute

Gallup Institute has been a significant producer of research on work connectedness constructs (commitment and job satisfaction) from the 1980's, in 1999 the construct were re-termed as engagement (Buckingham and Coffman 1999). Gallup has been instrumental in the supply of timely and relevant research on critical issues on human nature and behaviour for over seventy years (Gallup 2008). Gallup incorporates research areas that encompass: management,

psychology, sociology and economics. Gallup's major contributions come from the Gallup Poll (relevant and timely research, Gallup College (provider of management degrees and courses), Gallup Consulting (providing consulting services to organisations on human nature and behaviour issues) and Gallup Press (publication of key research and findings) (Gallup 2008). Gallup has made a significant contribution to many human and behavioural areas, engagement has seen significant support.

Whilst producing various research outputs on how to engage employees to optimise the benefits for the organisation, Gallup has also provided research on the organisational benefits. Typically, Gallup defines three engagement states: engaged; not-engaged; and actively disengaged. The reports on engagement use definitions reflective of these three states: Engaged employees have a passion and connection to their organisation. They are instrumental in developing a competitive edge for the organisation. Employees that are classified as 'not-engaged' are what's termed 'checked out' and sleepwalking through their workday (Crabtree 2005) they have little energy for the work. Employees that are classified as 'actively disengaged' are unhappy and this is evident in all elements of their performance having detrimental effects on all other employees and the organisation. (Crabtree 2005; Echols 2005; Gopal 2006).

Those employees who are 'checked out' or 'sleepwalking' have been described as being robotic (Hoshchild 1983) corresponding to the definition of disengagement described by Kahn (1990). The definition from the Gallup Institute broadens the Kahn (1990) definition by providing both the employee's state and the consequence of his or her engagement. In additional research on behalf of Gallup, Harter et al. (2002, p. 269) defined engagement as an 'individual's involvement and satisfaction with as well as enthusiasm for work'. A link between satisfaction and engagement was established, with significant correlations (Harter et al. 2002). Harter et al. (2002) transcend the borders of consultant by publishing in notable academic journals.

To measure engagement the Gallup Institute developed the 'Gallup Workplace Audit' (GWA) (Buckingham and Coffman 1999). The scale has 12 engagement items, reflecting a tested uni-dimensional construct according to the study by Harter et al. (2002). It is composed of questions focusing on employee attitudes and issues of the control of manager/ supervisor because feedback from the job is believed to be an important engagement element. The GWA is not only seen as a measure of employee engagement, it is also seen as a feedback tool for management to respond too (Thackray 2001). It is especially useful for finding areas of concern in an employee's conduct or being able to ascertain those employees who are engaged. Luthans and Peterson (2002) found a conceptual fit between the GWA and emotional and cognitive engagement dimensions defined by Kahn (1990).

Harter, Schmidt and Keyes (2003) in research conducted for the Gallup Institute used a wellbeing approach to understand the benefits of positive attitudes on organisational outcomes. The wellbeing approach argues that 'the presence of positive emotional states and positive appraisals of the worker and his or her relationship within the workplace accentuate worker performance and quality of life' (Harter et al. 2003, p.205). As a result of the research, Harter et al. (2003) hypothesised that the broad category of employee wellbeing encompasses employee engagement which generates positive affect (through satisfaction, commitment, joy, fulfilment, interest and caring) and results in positive business outcomes.

Underlying one's engagement according to Harter et al. (2003) is a set of one's fundamental basic needs. Arguably, when the basic needs of an employee are met there is a greater opportunity to be physically, cognitively and emotionally engaged (Kahn 1990). The GWA measures four basic needs that according to Harter et al. (2003) and the Gallup Institute are indicative of engagement. Those comprise: clarity of expectations and basic materials supplied; a sense of contributing to the overall organisation; a sense of belonging; and an environment indicative of feedback and discussion. In other words the employee needs to be supplied the materials for the job and have a good understanding of the job requirements. The employee also needs to feel as though their contribution is valued and significant in the attainment of organisational goals. There is a need for employees to have a sense of belonging and feel a part of the organisation. Finally, employees need feedback from the environment in which they work. These are the basic needs that an employee requires to be able to engage at work.

Engagement has been related to both intrinsic as well as tangible rewards (Harter et al. 2003). Pay was found to be an indicator of tangible rewards; this is consistent with ideas put forward by consultant contributors Robinson et al. (2004) and Johnson (2004). Pay varies on its effect between those that earn more had less emphasis on pay, than in comparison to those that earn less. In their work for Gallup, Harter et al. (2004) argued that meeting only pay rewards for employees produces short term impacts on positive affect and does not fulfil the basic needs pertinent engagement in the longer term. To foster engagement, employees need the intrinsic value of the job to be a key focus for long term engagement. Intrinsic value can be driven by role clarity, recognition, personal growth opportunities and challenging work opportunities. Overall, engagement was found to be an indicator of intention to remain with the organisation. The relationship between the employee and the organisation can be seen as reciprocal in nature (Harter et al. 2003). A commitment by the organisation to supply the basic needs will result in the employee's engagement, this will manifest into performance outcomes, which consequently will determine whether the employee will remain in the organisation. This can be linked to the

norm of reciprocity which is the fundamental human norm, that people are likely to reciprocate the good work of others (Gouldner 1960). It has been noted that employees believed that reciprocity at work is important (Eisenberger, Fasolo & Davis-LaMastro 1990; Eisenberger et al. 2004). If they did not feel that the organisation had an interest in or tried to engage them, they were less likely to engage with the organisation.

Gallup has made significant contributions to engagement, the overview of the GWA demonstrates the differing perspectives of employee engagement, using the same instrument, which have resulted in several consultant approaches including: the positive psychology approach; the wellbeing approach; and the benefits and consequences of engagement and disengaged states (see 2.3.2.1 and 2.3.2.2). This has resulted in inconsistencies derived from the lack of consensus in the engagement domain (RQ1). What becomes apparent is the overlap of the Gallup with the other contributions, and this will be discussed in the forthcoming sections.

2.3.3.2. Towers Perrin

The HR consultancy group, Towers Perrin offers professional services to businesses to assist in increasing performance through effective people, risk and financial management (Towers Perrin 2008). Towers Perrin has also contributed to research on engagement through the development of a nine item instrument that measures the degree of engagement and disengagement. Engagement was defined as the level of 'discretionary effort' that an employee engages in at work (Towers Perrin 2003). In other words an engaged employee will exhibit extra effort on behalf of the organisation without expectation of reward or recognition; going beyond the call of duty.

Towers Perrin (2003, 2006) differentiates between 'rational endurance' and the sense of an employee doing just enough for the organisation, and 'engagement' which would require the employee putting in extra discretionary effort. A Towers Perrin (2006) report argues that in highly competitive global economies employees are the last competitive asset that organisations can utilize. In other words, to remain competitive organisations must invest in their human element. As was discussed in an earlier section (section 2.1) only more recently has the investment in human capital and people as the key to increased organisational effectiveness become an important focus for businesses. Therefore employees performing at the level of rational endurance do not provide the benefits that an engaged workforce can offer to a competitive organisation.

This balance between rational endurance and employee engagement has been likened to a duality based on the emotional and the rational elements (Towers Perrin 2003, 2006). The

emotional/rational duality is a combination of having the 'will' to offer discretionary effort and the 'way' the skills, resources, support and tools from the organisation to get the job done. The emotional dimension of engagement is that which encompasses the personal feelings from one's job (Towers Perrin 2003, p.6). The dimensions of rational engagement imply that employees work with their organisation towards meeting its goals and understand what their work role is as an employee. Employees who seek external job choices demonstrate their lack of being emotionally engaged with the organisation given they are likely to take their skills elsewhere. These ideas of employee engagement are presented in Figure 2-4. According to Towers Perrin (2003) an engaged workforce is a vital asset to the successful functioning of an organisation. The ideas about engagement concur with the Gallup research regarding the benefits of an engaged workforce, demonstrating consistency between these contributions (RQ1).
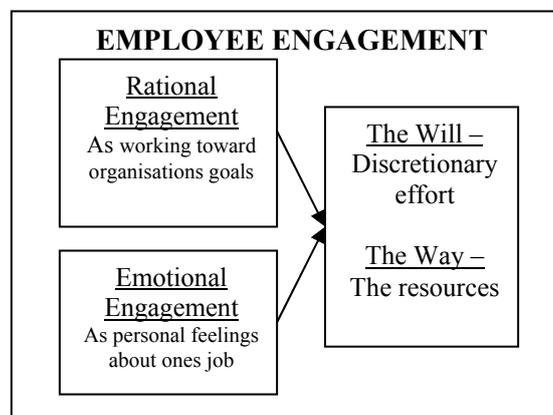
Figure 2-4 Towers Perrin Conceptualisation of Employee Engagement

2.3.3.3. ISR Research

The International Survey Research (ISR) before being acquired by Towers Perrin, focused on the development and implementation of surveys directed at employees, customers and managers. The key philosophy is the identification of people as the most important organisation asset and the surveys that are developed assist senior managers in developing and enhancing their human element (ISR 2008). One of the major ways in which to enhance human capital is through engagement.

The ISR define employee engagement as 'the degree to which employees support their employer's mission and values, feel a sense of pride in working there, plan to stay, and are willing to exert extra effort' (ISR 2004a, 2004b, 2004c) The definition encompasses cognitive, affective and behavioural components; the ability to 'think, feel and act'. According to the ISR, the cognitive component of engagement incorporates the idea of 'think', which is the acceptance and support of the values and goals of the organisation. The affective component, labelled 'feel',

is the emotional connection to the organisation. This connection is defined by the sense of pride, attachment and feeling of belonging to the organisation experienced by employees. The final component is the behavioural component which ISR label 'act'. It has two facets: 'extra effort' and 'stay'. Extra effort is established when the employee puts in an extra effort and goes 'the extra mile' for the benefit of the organisation. Stay refers to when employees intend to stay with the organisation (ISR 2004a, 2004b, 2004c). According to ISR, each of these components must be present for an employee to be fully engaged, although they may vary in degree (Figure 2-5). This is essential for the sustained benefits for the organisation. ISR (2004b) research has linked employee engagement significantly with organisation profitability.
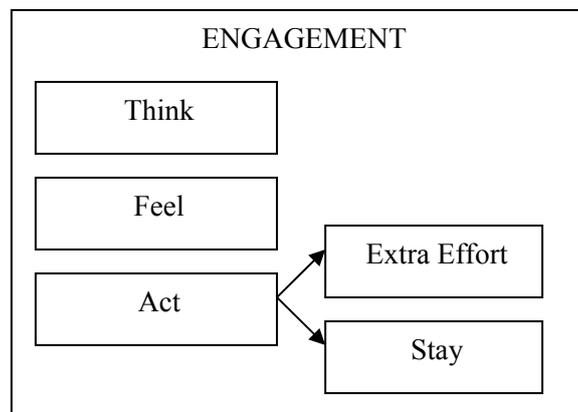
Figure 2-5 ISR Engagement Conceptualisation

In the ISR research, employees can also be categorised or grouped according to various states of engagement. These classifications comprise: fully engaged; complacent; behaviourally disengaged; and fully disengaged (ISR 2004a). There has been some fluidity at times in the use of these definitions. For instance, one ISR (2004a) report referred to the third classification (behaviourally disengaged) as 'less committed'. Both terms refer to the behavioural act-stay component of engagement and focus on employees looking for opportunities to the leave the company. The link between commitment and engagement is quite strong within the consultant literature; CLC, BSCI and the IES can all be related to a dimension of commitment (Each of these consultant contributors will be detailed in the forthcoming section). In another instance, the complacent employee was referred to as being 'retired on the job' in an effort to describe those employees who do only what is required (ISR 2004b: see also Greenfield 2004). Despite the inconsistency in terminology, the concept of the extra-effort component of engagement where employees are not willing to put in the extra effort for the benefit of the organisation is similar to that identified in the Gallup studies (Crabtree 2005; Gopal 2006) of 'not engaged' employees who do only what is required at work (section 2.3.3.1). The think, feel and act components of the ISR also draw on some links and comparison to the conceptualisation of engagement proposed

by Kahn (1990) and this is described later in section 2.4. The literature review is beginning to identify the consistencies and lack of consistencies between the contributions.

2.3.3.4. *Other Consultant Contributions*

This section will explore some of the other contributions to the engagement conversations from different consulting groups, beginning with the Corporate Leadership Council.

The Corporate Leadership Council (CLC), a group comprised of senior executives with a commitment to providing assistance and expertise to HR managers with a focus on alignment of HR with overall organisational strategies (CLC 2008), to assist with the alignment are employee engagement strategies. The CLC developed a model of employee engagement which takes as its definition the amount an employee commits to someone or something in the organisation (CLC 2004). The model depicts engagement as determining both rational and emotional commitment which in turn lead to extra discretionary effort and an intention to stay with the organisation which results in improved performance and retention (CLC 2004). These relationships are demonstrated in Figure 2-6.

In this way the CLC (2004) places engagement in a relationship with organisational commitment, using them synonymously (section 2.4.1). For example, their paper discusses employees as being uncommitted, neither uncommitted nor fully committed, or being fully committed. This is reflective of other views of engagement, that highlight the engaged states as engaged states, for example the Gallup Institute discusses employees being engaged, not engaged and actively disengaged (Crabtree, 2005; Echols 2005; Gopal 2006). Towers Perrin (2006) classified employees as highly engaged, moderately engaged or disengaged. Essentially, the various classifications of engagement states by the consultants identify the re-branding of essentially the same engagement state. This is reflective of the purchase product and the distinctions between them. The CLC explicitly links engagement to the concept of commitment; rational and emotional commitment. A number of consultants used commitment and engagement synonymously, whereas there is debate in the academic literature and these two constructs are treated as distinct (Hallberg & Schaufeli 2006). This discussion is taken up again in section 2.4.1. The use of many terms to describe essentially the same phenomena associated with engagement was something recognised by the consultants themselves. The CLC acknowledged that there are many competing frameworks and definitions of engagement, each with differing results (CLC 2004) all contributing to same research domain.

EMPLOYEE ENGAGEMENT

Emotional Commitment

Rational Commitment

Discretionary Effort

Intention to Stay

Performance and Retention
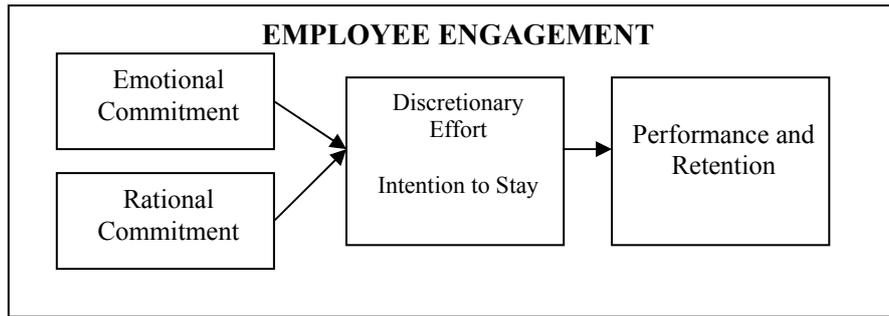
Figure 2-6 CLC Engagement Conceptualisation

Another consultant group, the Institute of Employment Studies (IES) have also investigated engagement and provided their own definition which encompasses a reciprocal view of engagement (Robinson et al 2004). Their definition sees the employee identifying with the organisation and its values; working for the overall benefit of the organisation; and putting in extra effort for the organisations benefit. In return the 'organization must work to nurture, maintain and grow engagement, which requires a two-way relationship between employer and employee' (Robinson et al. 2004, p.9). The reciprocal definition suggests that achievement of goals and enhancement of performance requires both the organisation and employee. The assumption is that engagement at work will result in increased commitment and increased participation of organisational citizenship behaviours, which will then convert to increased productivity, greater profitability for the organisation. In turn, the organisation must 'nurture, maintain and grow engagement'. According to this model engaged employees will feel valued and involved in the organisation. This is a common thread to some of the current engagement research conducted by consultants discussed above. For instance Gallup Institute studies similarly referred to engagement as having elements of reciprocity and the CLC had likewise linked engagement to commitment. In contrary to the other models presented commitment is the outcome of engagement, rather than a dimension of engagement itself.

Finally, BSI Consulting (BSIC), an Australian consulting and training company have attempted to 'clean up' the term engagement because over time, the term has been used inconsistently in terms of definitions and measures (BSI-Consulting 2007). The BSIC (2007) have done this by incorporating the main aspects of the consultant contributions to confine engagement to its emotional and rational dimensions (presented in Figure 2-7). This demonstrates a consistency with Towers Perrin, who also identified emotional and rational engagement dimensions, however, the definitions are inconsistent. Furthermore emotional and rational states are consistent with CLC and the ISR. According the BSIC the emotional aspect of engagement was used to reflect an employee's bond with the company and affective ownership whilst the rational

aspect was used to reflect an employee's identification with and understanding of his or her role and role fit. In cleaning up the term, BSIC knowingly neglected the academic contributions on the basis that the engagement measures has been primarily developed as a consultant tool (BSI-Consulting 2007). However, as taken up in previous sections (2.3.2.1 and 2.3.2.2) the psychology scholars have been instrumental in developing engagement measures that have organisation value (Schaufeli, Martinez et al. 2002).

EMPLOYEE ENGAGEMENT	
Emotional Engagement as Bond and Ownership	Rational Engagement as Identification and understanding of role
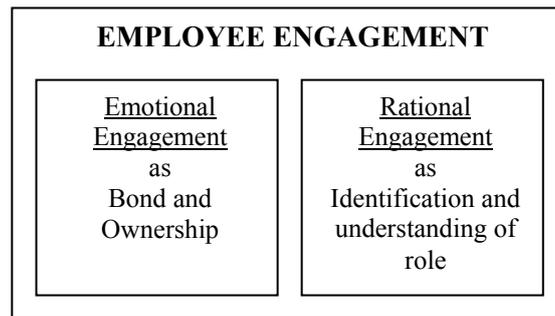
Figure 2-7 BSIC Employee Engagement – The Clean Up

From the management consultants, there are examples in the literature of organisations investing in engagement. One such organisation, Sensis Australia (Elsey 2005) has invested money and time in the development of a new people strategy: a 'people commitment' which involved 'stay, say and strive'. Again, this is evidence of a consultant using the terms engagement and commitment synonymously (see section 2.4.1 for full discussion). The motto attached to the strategy encompassed: employees staying with the organisations, saying good things about the organisation (because of the alignment and belief in the strategy and values) and striving for the benefits to self and the organisation (Elsey 2005, p. 19). The Sensis example provides further links with the ideas of engagement with working for the overall benefit of the organisation, includes a similarity or belief in the values of the organisation. Evident within this example is the confusion of commitment and engagement terms, adding to the confusion. What is apparent is the overlap between some of the management contributions and the consultants. The Sensis example provides a good management example but development and implementation was by management consultants (Elsey 2005).

Within the consultant frameworks there are many consistencies and inconsistencies in addressing engagement. For instance the key consistent dimensions are evident in employees supporting and aligning with the organisations values, working for the benefit of the organisation, identifying with and developing affective attachment to the organisation (Gallup Institute, IES, CLC, ISR, BSCI). This 'engagement' results in increased performance for the organisation, discretionary effort and a willingness to remain with the organisation (Gallup

Institute, Towers Perrin, IES). Engagement was viewed by many of the consultants as having an emotional dimension (Towers Perrin, ISR, CLC) and this draws comparison with the academic scholars. Kahn (1990) and Schaufeli et al. (2002) in their engagement conceptualisations identified an emotional engagement dimension. Although related to the other contributions, as expected each of the consultant contributions is distinct. This is due to the consultants selling a purchase product and differentiating themselves from other consultants.

There are many examples of HR and management consultants who have developed engagement models. This section highlights some of these other contributions. Whilst it is beyond the scope of the current work to provide an exhaustive list it nevertheless indicates the expansive and diverse conceptualisations of employee engagement which have both enriched and confused the field. Linking back to research question 1: *What are the consistencies or lack of consistencies in how engagement is used in the literature?* This section has identified many of the consistencies and inconsistencies found within the consultant frameworks. The result of this analysis indicates that many of the engagement contributions from the consultant provide key relationships with many other constructs. For example the constructs of commitment, satisfaction and discretionary effort are all apparent elements within the consultant conceptualisations. The next section will provide an analysis and comparison of the consultant measures of engagement.

2.3.3.5. *Consultant Measures Of Employee Engagement*

As evidenced in the preceding sections, there are many consultant contributions to the area of engagement. As a result, in addition to the obvious differences in conceptual ideas to the management and psychology concepts there are the many definitions and frameworks specific to consultant measures of engagement. The consultants measure the degree of engagement and this is reflective of the re-branding of different engagement terms (see section 2.3.3.4). The limitation of the consultant measures is the non validation and the limited reporting of the statistical methods used. This is often driven by their purchased product, copy right protection, and intellectual ownership rights. The measures are used only by the originating organisation and not subjected to any independent assessment. In the academic literature, measures are opened in the public domain for independent trials, opening dialogue about the validity and reliability of a measure; consultants rarely do this. Due to the variety of consultant measurement instruments, there are also contradicting statistics about the degrees of engagement in the workforce. Many of the statistics reported from the consultants rely on cumulative sampling, whereby all uses of the scales are pooled together. The result of this type of method is large sample sizes with limited definitive statistics of the breakdown of the sample group. However, due to the diversity and breadth of the sample broad statistics are often reported. For example,

they may report the number of workers engaged and make assumptions for the population. This section will briefly examine the consultant measures and their accompanying statistics.

Gallup (as outlined in section 2.3.3.1) developed a measure of employee engagement, referred to as the Gallup Workplace Audit (GWA). As described earlier, the scale covers the states of engaged, not engaged and actively disengaged. The GWA has been subjected to validity testing (Harter et al. 2002; Harter et al. 2003). As is common in much of the Gallup research on engagement, the use of meta-analyses has prominence which requires large sample sizes. In many of the Gallup studies large sample sizes have been used, for example Harter et al. (2003) use a cumulative sample of N=198,514 to run a meta-analysis. With many of the Gallup studies the presentation of overall statistics for engagement are limited and not with the rigour expected from high quality academic literature. Similarly, large cumulative sample have also been used by Towers Perrin and ISR.

Towers Perrin (2003, 2006) developed a nine item scale to measure engagement. Using a broad cumulative sample, their results found that in a global study of engagement that Mexico had the highest levels of engagement with 40% highly engaged and Japan demonstrated the lowest levels of engagement with 6% (Towers Perrin 2006). Those countries with single figure engagement levels were reportedly all Asian countries and this is consistent with Gallup results for Singapore which also had relatively low engagement levels (Gopal 2006). Towers Perrin used a sample of 85,000 for their global study the breakdown of the sample demographic has not been reported.

Similarly, the ISR have reported engagement statistics based on an eight item engagement scale using a broad ranging cumulative sample, with little demographic analysis of the sample group. In a Canadian study, the ISR (2004b) found 37% of the sample were engaged (N=158,000). In a comparative American Study 47% of workers were engaged (N=30,000) (ISR 2004a). In another global study the ISR (2004c) found that the America and Brazil had the highest levels of engagement, each with 75% of the sample were engaged and France had the lowest with 59%. The results within the ISR studies reveal some inconsistency in the engagement results.

The three presented measures of engagement developed by Gallup, Towers Perrin and ISR reveal a lack of consistency between each of them. Although claiming to capture engagement these measures produce varied results. For instance Gallup's highest engaged workforce measured at 40% engaged in comparison to the ISR who found the highest engaged workforce with 75% of employees engaged. Most of the differences could stem from the varied but similar engagement definitions. Gallup (Echols 2005) identifies three states (engaged, not engaged and

actively disengaged), Towers Perrin (2003) identifies three states (Highly engaged, moderately engaged and disengaged), the CLC (2004) identifies three states (Fully committed, neither committed or not committed and uncommitted) and the ISR (2004c) identifies four degrees of engagement (Fully engaged, complacent, behaviourally disengaged and fully disengaged). The inconsistency between the measures and the different definitions of the degrees of engagement could contribute to the current inconsistencies in the measurement results. As explained above, the contributions from the consultants described in this section do not purport to be an exhaustive list. However, the purpose of including these prominent consulting groups is to acknowledge the main consultant contributors and to highlight and understand the different conceptualisations of the domain of engagement.

Overall, the contribution to engagement from the various disciplines canvassed here: management, psychology and consultants; have all impacted on the growing understanding of engagement. However, with many competing perspectives and models of engagement there is a lack of clarity in the area. Some of the diversity stems from research contributions which focus on engagement as a state, and these largely investigate the phenomenon as something that happens to individuals when they are engaged. Other contributions focus on engagement as a behaviour. The section highlighted many of the consistencies between the many contributions in addition to the inconsistencies. The next part of this chapter brings together the varying theoretical contributions and analyse the consistencies and inconsistencies in the current research. Chapter 4 builds on this to draw an overarching framework from which engagement is empirically tested in Australian business academics.

2.4. Integration of the Engagement Contributions

This section explores engagement as a construct and argues that it is distinguishable from some of the more dominant related constructs such as organisational commitment, job satisfaction and job involvement. The chapter then moves to elaborate on the overlaps and disconnects between the various contributions in an effort to bring greater understanding to engagement.

2.4.1.   'Engagement' as an Original Concept

The previous section argued that the idea of engagement emerged, in addition to many other research contributions, for the purpose of enhancing employee effectiveness at work (Harter et al.2002). This has led to a conceptualisation of engagement as something quite wide ranging comprising a breadth of explanatory variables, many of which are investigated in this thesis. Using Kahn's (1990) academic based definition, engagement is the degree of psychological presence at work. As discussed above, when psychologically present, people express their engagement emotionally, cognitively and physically. In contrast, consultant definitions of

engagement often explicitly link engagement to commitment (The consultant groups of ISR, CLC, IES, BSCI), job satisfaction (The Gallup Institute) and discretionary effort (The consultant groups of Towers Perrin, ISR, CLC, IES), where each concept is often used interchangeably with engagement. The tension between the conceptualisation of engagement from the academic (management and psychological) perspectives and those envisaged by consultants has led to confusion in defining engagement.

It is pertinent to provide a clear distinction between these concepts. In drawing this comparison Saks (2006, 2008) asked the question 'is engagement old wine in new bottles?' as demonstrated with the competing consultant contributions. It is often the case that engagement is used synonymously with other concepts making it necessary to demonstrate the distinctiveness of engagement compared to the other constructs. In making the distinction between engagement and the other concepts, Robinson et al (2004) argued that engagement is different to organisational commitment and organisational citizenship behaviours (OCB), but they acknowledged that these two variables have overlapping dimensions with engagement. Saks (2006) provided a further distinction between these variables and engagement. He considered that discretionary effort, or the related concept OCB, is not related to engagement as it deals specifically with the extra effort and extra role behaviours employees exhibit, whereas engagement focuses on the work role itself (Rothbard 2001). This is contrary to many of the consultants who link engagement to ideas of discretionary effort, for example Towers Perrin (Section 2.3.3.2), ISR (Section 2.3.3.3), CLC and the IES (both in Section 2.3.3.4).

Similarly, the contribution from the CLC has used engagement and commitment as interchangeable terms where engagement is seen as being the degree of rational and emotional commitment. Some academic researchers have attempted to clarify this distinction. For instance, Hallberg and Schaufeli (2006) modelled work engagement, commitment and job involvement to distinguish the relationships between the three. They found that work engagement was significantly different to the other two concepts. Commitment (the degree of attachment to the organisation) was found to be related more closely to work engagement, but was different in the sense that it is focused on the situation. Work engagement was found to be more focused on the individual in role. For example, absorption, dedication and vigour at work emerged as components of work engagement. Maslach, Schaufeli and Leiter (2001) further clarified this distinction by arguing that organisational commitment is seen as focusing on the overall organisation, job satisfaction focuses on need fulfilment and contentment, but neither of these constructs deals specially with the job itself or a person's relationship with his or her job, as they argue engagement does.

Job involvement (the degree of psychological identification with the work) was defined by Lodahl and Kejner (1965) and was found later to be related to work engagement (Hallberg and Schaufeli 2006). Involvement is said to focus more on the individual. May et al. (2004) described involvement as incorporating the satisfying abilities of the job and tied it to ideas of self image (Saks 2006). Engagement, on the other hand, according to Saks (2006) is about how an individual goes about performing in their jobs. Rothbard (2001) when conceptualising role engagement distinguishes commitment (identification with the job) from role engagement using similar definitions as Hallberg and Schaufeli (2006) commitment, attachment to and identification with the organisation and job. Rothbard (2001, p. 657) concluded that 'identification and commitment represent reasons why one might become psychologically present (i.e., engaged) in a role.' Alternatively, Kahn (1990, p.693) had argued earlier that the idea of job involvement is a 'broad, context- free sweeps at how present people are at work' yet it does not demonstrate their psychological presence. Clearly, it can be seen that in many of the engagement contributions by both academic researchers and consultants there have been attempts to distinguish engagement from the other concepts. What is demonstrated finally, is an interaction or a relationship between these various concepts and engagement.

This section has attempted to demonstrate that engagement is different to some of the more common psychological constructs that have been applied to workers' attachment to their jobs. Without any agreed definition of what engagement is, it proves a difficult task to distinguish engagement from other concepts or merge it with other concepts. It is evident that these concepts have a degree of overlap with engagement and are somewhat related (Schaufeli & Hallberg 2006). Although distinctions have been made, there remains interchangeable use of engagement with idea of commitment and this is taken up by the consultants in 2.3.3.2 and 2.3.3.4 of this chapter. But as clarified in the index of definitions in Chapter 1 each of these variables is treated as their own conceptualisation.

The section has distinguished engagement as an original contribution in addition to constructs like job satisfaction, organisational commitment, job involvement and discretionary effort. Whilst there may exist some conceptual overlap between the ideas, research has shown that engagement does represent its own domain. With this clarity in mind the next section will explore the overlaps and disconnections between the many contributions presented throughout this chapter.

2.4.2. The Overlaps and Disconnects of Engagement

The various domains of engagement research have signified the diversity of the area and the contributions. The result of the many engagement contributions is the lack of definitional

consensus. It is apparent that engagement is not easily defined and agreed upon, however, there are many overlapping ideas. Many of the overlapping ideas stem from the various consultant contributions and their original branding of the idea of engagement as a sales tool. This section discusses the overlapping ideas of the various contributions together.

What is evident throughout this chapter is that many of the contributions can be broadly considered back to Kahn's ideas despite the argument that there are too many contributions and these add to and fuel the lack of definitional consensus (Macey & Schneider 2008; Newman, DA & Harrison 2008; Saks 2008). In an attempt to bring understanding to engagement domain, Ferrer and Van Gramberg (2007) draw together the more dominant aspects of the various engagement frameworks and definitions. They distinguish the various individual contributions and bring them together via Kahn's (1990) original framework. This brings together the contributions from the key investigation areas; management, psychology and the consultants. They identify and support the idea that many of the contributions can be brought together, with the underlying contribution of engagement as incorporating emotions, cognitions and physical attributes.

Kahn (1990) as discussed in throughout this chapter has been significant and instrumental in the engagement domain. He theorised that to be engaged was to be psychologically present at work and exhibit this through emotional, cognitive and physical elements. Kahn's work lies as an undercurrent to many contributions, for example Luthans and Peterson (2002) in their study attempted to link the GWA as developed by Buckingham and Coffman (1999) for Gallup with the psychological engagement contribution by Kahn (1990). Luthans and Peterson (2002) proposed that there was a conceptual fit between the psychological definition of engagement as supplied by Kahn (1990) and the GWA. They found that the emotional and cognitive engagement that Kahn (1990) articulated is reflected in the GWA; however, the GWA does not reflect a physical component that Kahn (1990) defined. Many of the consultant works can be tied to Kahn's (1990) ideas.

For Instance, the ISR (2004a, 2004b) propose a 'think, feel and act' element of their model of engagement. This draws parallels with Kahn's engagement components of emotion (feel), cognition (think) and physical (act). In addition, Towers Perrin (2003), the CLC (2004) and BSIC (2007) each identify that engagement incorporates emotional and rational elements. Towers Perrin (2003) suggests that emotional elements are the feelings associated with the job and the rational represents the working towards the organisational goals (section 2.3.3.2). In contrast the CLC discuss these elements in terms of commitment to the organisation and emotional and rational commitments being the measure of engagement (section 2.3.3.4). The

BSIC (2007) in an attempt at model clean up brought the many engagement ideas from the consultants together to represent emotional and rational engagement elements (section 2.3.3.4). As a result emotional engagement is defined as the employees bond with the organisation and their affective ownership of the role and the rational as an employee's identification with and understanding of their role. What the BSIC does is treat engagement as an all encompassing idea of the employees' relationship with the organisation, the job and the work, however, the definitions provided by the BSCI draw parallel to commitment.

Commitment, was defined in the previous section as the attachment to and identification with the organisation (Porter et al. 1974), which is similar to the emotional engagement definition provided by BSIC (2007). Additionally, as described in section 2.3.3.4 the CLC use commitment to define their engagement states and the ISR (2004a) refer to one of their states of engagement as being 'less committed' (see section 2.3.3.3). Even though engagement has been found to be empirically distinct from commitment (Hallberg & Schaufeli 2006) the consultants persist in using the terms almost interchangeably. Commitment has some obvious relationship with engagement but not synonymous for engagement as some of the consultants persist.

Kahn's (1990) work can be used to analyse the consultant contributions presented. Kahn also identified an emotional engagement component (the emotional capacity and the resources to express the self at work). The idea of emotions are identified by Towers Perrin (2003), the ISR (2004a), the CLC (2004) and BSIC (2007), in addition Schaufeli et al. (2004) identify engagement as part an emotional state. Kahn's idea of physical can also be linked to the consultants. Towers Perrin, CLC and BSIC also identify a rational engagement component. The rational component primarily deals with working towards the organisational goals (Towers Perrin 2003) and identifying with them, these are suggestive of a physical element. Also the ISR propose an 'act' engagement element which is also suggestive of a physical engagement. Being behaviourally engaged has been theoretically conceptualised in the academic domain by Macey and Schneider (2008). The rational, the behavioural and the physical engagement dimensions all relate to outcome based responses as derived from emotion and cognition. Whilst not directly related to each other, they do represent outcomes.

Some of the consultant work can be linked to the psychology scholarship on engagement. The work by Gallup on engagement for example links to a positive psychology approach (Clifton & Harter 2003; Harter et al. 2002; Hodges & Clifton 2004) that focuses on the positive conditions of human functioning and how to enhance rather than the typically psychological view of trying to fix human dysfunction (Seligman & Csikszentmihalyi 2000). This is illustrated in the study presented by Harter et al. (2003) on behalf of Gallup, in which a wellbeing approach to study

engagement (using the GWA) was used. Similarly, the wellbeing approach has been used to study engagement by Schaufeli et al. (2002) which represents positive psychology. In some of the work presented by Schaufeli and others, this transcends from organisational psychology into positive psychology. The conceptualisation of the UWES comprises the concepts of vigour, dedication and absorption and as demonstrated throughout the work the psychology scholars (section 2.3.2) the idea of absorption has been linked by many to engagement (Kahn 1990, Rothbard 2001) as well as to the positive psychology idea of flow (Csikszentmihalyi 1996, 2002).

A central understanding of engagement provides reinforcement for Kahn's (1990) conceptualisation of engagement involving emotions, cognitions and behaviours, physical and rational dimensions. The consultants and the academics can be linked back to Kahn's ideas and the consultant contribution has value for developing an understanding of engagement based upon the linkages with Kahn. So whilst the overall value of the consultants has been minor in academic terms, more generally it has made a contribution to understanding engagement at the foundation level envisaged by Kahn. Clearly this reinforces the argument that Kahn's (1990) conceptualisation is the key underpinning a more holistic 'engagement'. In this chapter it has been necessary to present the complexities of engagement and then strip it back to its simplest form. The common concepts identified from the striping back will be the platform to understand a new all encompassing term for engagement which is used in this thesis to examine the engagement of Australian business academics.

2.5. Chapter 2 Summary

This chapter provided the background literature of the many and varied engagement dimensions commencing with a discussion of humans as the key strategic element within organisations for increased competitiveness. The importance of human effort to organisations underpins the imperative for research on engagement. The chapter then introduced engagement, its historical evolution as well as the perspectives of engagement as a form of human capital.

In canvassing the literature on engagement, three main areas of contribution were apparent: the contribution from management and psychology scholars and the consultant practitioners. Each of these contributors has added to the confusion around engagement definitions and conceptualisations and the chapter identified the consistencies and inconsistencies in their approaches. In doing so the chapter addressed the first research question. Engagement research was found to encompass many facets of engagement including state, psychology, work, organisation, employee, job, behavioural and role engagements. The consistencies between these engagement contributions are such that regardless of the domain the dimensions of engagement

can be joined together. One framework underpinned the others; this was Kahn's (1990) engagement conceptualisation. The chapter then linked the consistencies found in the engagement literature together to form an underlying framework for a more holistic definition of engagement. The framework developed here is tested in Chapter 4 which moves to develop the engagement dimensions of emotion, cognition and the physical- behavioural-rational into the conceptual framework used for the empirical research presented in this thesis.

The next chapter discusses context for this thesis which is the Australian Higher Education sector and in particular focuses on the characteristics of the target group of business academics.

Chapter 3 : RESEARCH CONTEXT

Chapter 2 established that whilst all research contributions canvassed have furthered our understanding of engagement there is a need now for clarity in this research domain and a need to take more holistic view of engagement with its roots in cognition, emotion and behaviour.

This chapter introduces the context in which the research takes place. The chapter begins with an overview of the Higher Education sector in Australia and the many changes this sector has faced. The chapter argues that the changes may have negatively impacted on employee engagement of academics and discusses the importance of engagement as a strategy to meet the challenges in this important industry sector. The chapter then justifies the use of academics as a critical sample in the investigation of engagement.

3.1. The Changing Higher Education Sector within Australia

The Australian Higher Education has undergone many reforms, each aimed at making it more competitive and commercial in its operations. Some have argued that the major reforms have seen a shift from a traditional culture of collegiality to a more managerialist style of operation. This section explores some of the major changes and the driving forces for change within the sector.

3.1.1. The Major Reforms

The Australian Higher Education sector had for some time been classified as a binary system operating as degree granting universities and colleges of advanced education (CAE). Each had distinct profiles, funding and staff salaries. The term 'tertiary education' was used to describe a broader array of post secondary education institutions including universities, CAEs and the non degree awarding institutes for Technical and Further Education (TAFE). Most of the revenue for these institutions had come from government and universities were seen as elitist rather than an avenue for mass education (Taylor 1999). The Dawkins review gave rise to a Green Paper released in 1987 which called for the disbanding of the binary system and for Higher Education to be more responsive to social policies for greater numbers of skilled graduates and tuned to creating positive economic outcomes. The Green Paper also foreshadowed the growth of the sector and alerted stakeholders to the financial imperatives of this expansion. The operation of institutions was seen as ineffective and essentially burdensome on government resources. The subsequently released White Paper emerging from the Dawkins review oversaw major reforms in the sector through the late 1980s and early 1990s including mergers and a greater focus on the market. In particular, the Federal Government adopted macroeconomic policies which opened up Higher Education into the global economy (Gallagher 2000). Universities shifted to become

more corporately run institutions destined to assist in maximising the nation's economic growth (Schramm 2008) and driven by global changes and competition (Considine 2006).

The Dawkins reforms in 1987-1988 saw the introduction of a Unified National System (UNS) of Higher Education (Bessant 2002). Many of the Higher Education institutions merged during the dismantling of the binary system and the previously, separate elite Universities were now joined by colleges and technical institutes granted the status of university (Wood & Meeks 2002). The intention of the UNS was to provide equity of resources for all Higher Education institutions and this was to be accomplished through a productive competition between them (Eveline 2004). It was also intended to bring in greater efficiency and effectiveness to an otherwise inefficient and ineffective system of self governance (Harman & Treadgold 2007). This marked the beginning of the competition era in Higher Education.

Since the Dawkins reforms, government funding of universities has steadily decreased and the manner of allocating funding has significantly altered. In 1981, 90% of funding was provided by the federal government. In 2000 this had decreased to 55% (Molony 2000). In 2002, the Hon Brendan Nelson, as the Liberal/National Coalition Minister for Higher Education embarked on a process of deregulating the funding environment and introducing a more individualist approach to the industrial relations system in the Higher Education sector (Currie 2005). Funding cuts have driven the intensification of competition in Higher Education; this is demonstrated in competition for students (international and local), competition for research grants, competition for staff members and for resources. Universities have also had to find other ways to manage within the financial cut backs. Increasing student/staff ratios; staff decreases; making academics more accountable; increasing the use of contractual and causal staffing have been strategies used by universities to deal with the gradual funding squeeze (Altbach 2002; Eveline 2004).

In addition, the Dawkins plans included greater student intakes into Higher Education and this was accomplished through the introduction of the Higher Education Contribution Scheme (HECS) – a deferred fee payment option for students (Newman, F, Couturier & Scurry 2004). HECS was considered revolutionary and many countries have taken this type of approach as a way of increasing student numbers (Karmel 2000; Niland 2008). In addition, increased acceptance of full fee paying international students and later, full fee paying local students at the post graduate level have all contributed to increasing student numbers and helped to relieve universities of their reliance on government funding. Molony (2000) noted that through the Dawkins reforms, student numbers significantly increased in the period between 1987 and 2001 from 78,000 students to 600,000 enrolled. The consequence was that university degrees were no longer only for the elite but became, as noted by Gibbons et al. (1994): the 'massification of

education'. This mass Higher Education was epitomised by predictions such as 45% of young Australians will begin an undergraduate degree (Karmel 2000). The increase in student numbers was accompanied by a more diverse student population, both in ethnicity and socio economic status, making Higher Education a possibility for all (Martin 1999).

The suite of Higher Education reforms from the 1980s were argued to be not merely a whim of the government of the time but rather, were mandated for dealing with market forces (Newman F et al. 2004). Market forces provided the threat of competition as well as a lure for greater profitability (Nayyar 2008). Currently, universities compete with each other domestically as well as internationally to supply education (Newman F et al. 2004, p. 2). The recent Bradley Report, which hallmarked the 2007 arrival of the Rudd Labor Government is another in the line of market sensitive reform agendas which will see the expansion of students domestically (with targets such as 40% of Australians under 35 years of age to hold a degree by 2020) and an expansion of regulation of the sector (Bradley et al. 2008). The current reforms highlight the necessity of competition in the Higher Education sector. The strategic management of academic knowledge workers, through engagement, is one way to compete within the current global economy.

3.1.2. Driving Forces for Higher Education Change

Driving the major governmental reforms outlined above, have been some key forces in the external environment pushing for change in Higher Education. According to Green, Eckel and Barblan (2002) the three main drivers have been globalisation, technology and increased competition. Coaldrake and Steadman (1998) add societal changes as another driving force.

Globalisation has seen the emergence of global Higher Education institutions; those that conduct their business in multiple countries, often having fully maintained campuses in other countries. Many universities have a degree of internationalisation, which brings international students or sends local students abroad or experiences some movement of academic staff, but not all these universities operate as global institutions (Newman F et al. 2004). Global institutions are those said to have fully functioning campuses in multiple international locations. Globalisation also sets international standards for quality of performance and higher standards of efficiency (Niland 2008) and it provides an enhanced trade of service (Nayyar 2008). This is recognised and marketed through global university rankings (ARWU 2008). Universities high on ranking lists are able to boast their status and prestige (Marginson 2007).

The benefits of globalisation and internationalisation for universities can be seen in a diverse culturally aware population, collaborative research and networks, generation of export incomes

and full fee paying students (Meeks 2006b). Recently, it was announced that Higher Education in Australia was the third largest export behind coal and iron ore (Universities Australia 2009). This indicates the considerable importance of Higher Education within the national economy. According to Altbach (2002, p. 23) 'no academic system can exist by itself in the world of the 21st century'.

The globalisation of Higher Education has brought an additional layer to the competition challenge by introducing foreign universities to Australia made possible not only by increased information and communication technologies (ICT), but through government's acceptance of foreign universities relocating to Australia. ICTs have decreased the international divide as students can search universities from across the world and enrol to learn from a distance (Newman et al. 2004). This has added to the consumerism of Higher Education by providing opportunities to 'shop around' internationally for desired degrees. Additionally ICT's have changed the face of teaching and learning for students and academics and this has added to the competitive edge of many universities (Gallagher 2000; Martin 1999). As national economies become even more interconnected throughout the world, globalisation will continue to play a significant role in Higher Education (DEEWR 2008) and drive increased competition.

Societal changes have also impacted the Higher Education sector (Coaldrake & Stedman 1998). A number of drivers in society have given rise to the demand for a Higher Education qualification including the rise of women in paid work who are more likely now than men to take up a university education and more students access Higher Education than ever before (Molony 2000). The aging workforce has been linked with an interest in education and there is now a high density of older populations within Higher Education (Hugo 2005). Additionally, multiculturalism has brought a greater diversity within workplaces and student populations. All these elements have contributed to the changes in Higher Education, the changing ethos and the altered the roles of academics.

As indicated earlier, this changing university culture has been driven by the requirement to become competitive. Competition has changed the way in which universities are managed as they now look for competitive advantage in their strategies (Nayyar 2008). Exposure to competition in the Higher Education sector is said to increase efficiency and productivity in line with neo- liberal reforms, devolving decision making to the institution and making them 'self-managing' whilst the government controls how power is used (Brett 2000). Recognising the academic knowledge worker as unique and a strategic force to be leveraged will assist universities develop their competitive situation (Lepak & Snell 1999, 2007). The next section moves to briefly discuss the shift in culture in the Higher Education sector.

3.1.3. The Changing Ethos of Higher Education

Government reforms and the increasingly competitive global market have significantly impacted on the changing ethos of Higher Education. There has been a greater business focus in Higher Education and a preference toward private sector management principles, driven by managerialism, commercialisation and consumerism. This has been built in an environment that is becoming intensely competitive within national and international markets.

Managerialism has been associated with economic rationalism, corporatisation of the public sector, state intervention in university management, greater focus on work productivity and market orientations (Taylor 1999). The core of the new managerialism is focused on revenue sources, budgets, quality, and accountabilities (Gallagher 2000). Managerialism has been associated more generally with the restructuring of the public sector in many western nations. The need for public servants to adopt private sector principles and practices to pursue a results-oriented approach has been hailed as the panacea for an ailing public management approach (Pollitt 1993). Managerialism has been described as a concentration on the interests of management which has resulted in a closer examination of the processes and responsibilities of management. The concept implies that certain core functions of management are applicable across both private and public sectors. The importation of HRM policies, strategies and underlying ideology into the public service has led to a concept of managerialism which reflects a commitment to the values of individualism, efficiency and entrepreneurship which underpin a view that public services are best contracted out to the private sector. Managerialism stresses the accountability of individual managers and this is reflected in a greater devolution of managerial responsibility to junior and middle level managers. Clarke and Newman (1993) suggested that managerialism refers to the aim of making management the driving force of a competitively successful society by providing leadership through the transformation of culture. Those authors state that managerialism breaks the traditional conception of managers as organisational functionaries or bureaucrats trapped by an organisational culture which values rule-following above innovation. The new management role is described as 'visions, missions, leadership by example, intensive communication processes and thorough attention to the realm of symbols are the mechanisms for creating the cultural conditions which mobilize and harness enterprising energy' (1993, 430).

In the UK, the features of 'new managerialism' in Higher Education include: 'changes to the funding environment, academic work and workloads (more students, a smaller unit of resource per student and pressure to do both teaching and research to a high standard); more emphasis on team work in both teaching and research, partly in response to external audit; the introduction of cost-centres to university departments or faculties; greater internal and external surveillance of

the performance of academics and an increase in the proportion of managers, both career administrators and manager-academics, in universities' (Deem & Brehony 2005, p. 225). Similarly in Australia research points to academics who are 'task loaded' and working longer hours (Anderson 2006, p. 581), restricting the academic ability to engage. Evidence from a SHRM approach suggests that having a focus on the development of the workforce, rather than a cost minimisation focus (characteristic of managerialism) has a greater impact on performance (Huselid et al. 2005).

The commodification of education driven by competition of Higher Education institutions, fierce advertising campaigns and university ranking systems has led to a new form of consumerism behind the reform agenda of 'user pay'. Scott (1999) argued that students who pay for their degrees demand greater quality for their educational experience and universities in turn become more responsive to their demands. One key competitive edge of any university is its knowledge base, particularly in teaching and research. There is now, more than ever, a key competitive advantage in the marketability of knowledge (Eveline 2004). Universities have always been at the forefront of the knowledge economy, developing and creating knowledge and learning (Eveline 2004). Academics as knowledge workers have long been considered as collegial and in control of knowledge creation. Businesses now also drive university innovation. Frank and Gabler (2006) provide the example of aviation giant, Boeing, driving knowledge production in engineering through partnerships with universities to drive their bottom line, by providing research grants. Gibbons et al. (1994) reported that this type of business- university partnership adds greater pressure on universities to provide innovation, new knowledge and maintain their relevance.

Corporate led research has also played a role in transforming the culture of universities. Meeks (2006a) argued that in a competitive environment, governments provide support for research that is focused on areas that have relevance. This shifts university research away from the search for absolute knowledge associated with collegial university culture and values, and places limits on the full potential of knowledge creators. This assertion is supported by Taylor (2008) who noted that academics previously researched for discipline knowledge and expansion, but now research areas for innovation, application and value creation. With knowledge itself becoming a marketable commodity there is greater impetus for research to be aligned with the strategic direction of the university or with current trends within society in an attempt to generate research funding (Solondz 1995). However, universities according to Eveline (2004) need to provide the facilities that stimulate and incubate ideas. In other words research needs to be used to develop potential value creation (Amabile 1996). According to Solondz (1995) universities are not providing these facilities because an increased focus on efficiency and accountability through

managerialism steers them towards more revenue raising ventures. This contradicts the view that human capital in universities is the key to their competitive situation.

The increased focus on efficiency and measurement has been creating a 'single mindedness' in university management (Solondz 1995). This single mindedness neglects the time that academics need for thinking, talking and researching where creative ideas arise (Amabile 1996). There is a clear paradox between striving for increased efficiency at the same time as striving for creativity and innovation for competitive advantage. Efficiency requires accountability and measurement, whereas innovation and creativity often require time for incubation and discussion of ideas: 'new competitive mechanisms will gradually erode the possibility of the relationships of trust and mutual significance which enable creative work; then universities will indeed have become workshops of the mediocre' (Brett 2000, p. 151).

There has been a clear change in the university ethos and there is much argument about the extent and reason for these changes. Regardless, universities now operate with a changed ethos, impacting their culture, values and how these are translated into teaching and research outcomes. As Newman et al. (2004, p. 4) stated: 'the search for truth is rivalled by a search for revenues'. Clearly these changes could not have been achieved without the input of academic staff and it is relevant that the changes have also had an impact on those staff.

3.2. The Impact of Change on the Role of the Academic

The era of change and intense competition in Higher Education has placed increasing importance on developing knowledge for organisational competitiveness. Human capital management is recognised as a strategic leverage for organisational competiveness, there is a tension within universities on the management of this human capital for knowledge creation. Clearly, knowledge creation and innovation is dependent on the efforts of academic staff. However, the role of academics has been altered due to the changing priorities of universities. Academics face greater complexity in their teaching, research and administration roles (Enders 1999). Much of this is driven from greater accountabilities, increased student numbers and the use of a peripheral workforce. This has resulted in increased job intensification, job insecurity, role overload, increased levels of stress and an altered quality of life.

Driven by the desire for greater efficiency in universities has seen an increased used of a peripheral workforce (Enders 1999). It is now common practice within universities to fill teaching gaps with contractual and casual academics. The use of contractual and casual staff members includes the use of sessional staff (Enders 1999; Eveline 2004). These peripheral staff members are also referred to as the academic underclass (Altbach 2002) or the ivory basement

(Eveline 2004). These are the academics with little ability to reach the top but remain essential to the optimal, cost efficient functioning of universities. Altbach (2002) noted that the use of this type of academic workforce is often driven by an attempt to meet fluctuations in student and institutional requirements. Permanent academics can suffer as a result as it puts increasing pressure on the core workforce to increase their output and the need to work harder to demonstrate their relevance (Solondz 1995). This can often result in issues of job insecurity for permanent academics, because there is a peripheral workforce that although not contributing to the research profile of the university is at times more efficient to fill a teaching role. For academics with a limited research profile and a greater teaching focus this can cause issues and stress related to their perceived relevance. Kinman (1998) noted in a UK academic sample that job insecurity was a leading cause of stress, with almost half of the sample reporting a lack of security in their jobs.

Driven by the Dawkins reforms of the 1980's there was increased push to make a Higher Education accessible for everyone rather than elitism (Gibbons et al. 1994; Molony 2000). The increased focus on student intake has had a significant effect on academics. Student/staff ratios have raised over the years as described above and there has been a concomitant increase in international students on shore. The result, using the Department of Education, Science and Training (DEST) 2005 data reported by Niland (2008), indicates that 25% of students enrolled in Australian universities are international students. There are some universities with nearly 50% of their student population being international students. Greater numbers of full fee paying students has generally not been sought as an attempt to increase diversity and knowledge or idea production in universities but to generate extra revenue (Eveline (2004). Increased student numbers and increased international students put greater pressure on academics (James 2007; Karmel 2000). This adds increasing pressure to the academics already increasing load, with also the extra administration and the pressure to research and publish. Fisher (1994) notes that increased student ratios in universities have contributed to increased stress levels for academics. This is evident in the example given by Fisher who says dealing with larger student cohort groups contributes to added workload especially in the sense of the student enquires and assistance. This adds to the accountabilities that academics must face as part of their everyday management of their job and could be resulting in lower engagement levels.

Born from the move to managerialism and the new management ethos in universities, academics now face greater accountabilities with more job requirements. There are increased pressures on academics to produce research that is published in reputable high ranking journals, in addition to balance teaching and administrative functions. The number and quality of publications are often tied to promotions and job opportunities. There is now greater imperative to research to

demonstrate individual value. In the competition era there is an increased need to get research funding both internally and externally to the university. Governments are providing less funding to universities so this increases the reliance on grants to fund research (Houston, Meyer & Paewai 2006; Molony 2000). The lack of funding is having a detrimental impact of Australian academics' well-being and increasing their stress levels (Winefield et al. 2003). The funding sources are often competitive and according to Fisher (1994) rejection for research funding often leads to further increases in stress levels for academics. Wood (1990) points out that getting research funding leads to higher quality research outcomes. So there becomes an overall increase in stress derived from the need to publish and the need to produce quality research outcomes. However, in the current environment research is a necessity for majority of academics and often tied to work load models.

In addition, academics now suffer greater stress especially from the increased need to perform administrative tasks. McInnes (1999) found that academics spend a substantial amount of their time on administration and they do not enjoy these tasks as much as research and teaching (McInnes 1998). There is a proliferation of extra tasks that greatly impinge on an academics' working hours (Taylor 1999, 2008), intensifying their jobs (Houston et al. 2006). Based on a 2007 survey of Australian academics, quite substantially 35% of their working week was spent on tasks other than teaching or research (Coates et al. 2008). This could have potential ramifications for engagement of the knowledge worker and the universities competitiveness. As engagement has often been linked to increased performance and performance outcomes (Harter et al. CLC 2004; Echols 2005; 2002) and a lack of engagement maybe linked to negative outcomes (Demerouti, Bakker, de Jonge et al. 2001; Leiter & Maslach 2000; Maslach, Schaufeli & Leiter 2001; Towers Perrin 2003).

In further accountability requirements in the role of teacher and subsequent course delivery there is now greater pressure to be more 'student centred, market oriented, and innovative' (McInnes 1999, p. 58). In addition to increased frustrations with research and administration, there is a greater push for the dynamic of teaching to change. Academics are now faced with increasing and changing ICT's and this has altered the way that traditional academic teaching as occurred (James 2007). Therefore academics are finding it more difficult to find a balance between their diverse functions; teaching, research and administration. Especially since, Fisher (1994, p. 73) found that role overload for academics emerged as 'the main feature of the self- reported stressful problems of academics'. Role overload was evident in academics attempting to balance teaching, administration and research effectively and this comes from an intensification of the job role. Having role clarity and a good work role it has been shown to have a positive impact on employees measured on work connectedness variable; meaningfulness, intrinsic motivation,

dedication and absorption (Coetzer & Rothmann 2007; Hallberg & Schaufeli 2006; Orpen 1997) Time management issues are also noted as another key stressor for academics especially in trying to balance and manage these three diverse work roles (Kinman 1998). This being the case Taylor (2008) noted that with the intensification of work for academics, there is less time for autonomy and academic freedom.

With increasing intensification and greater accountabilities it is becoming more difficult for academics to be autonomous in the traditional sense (Taylor 2008). Funding sources, strategic directions of universities and external businesses are increasingly seen as driving research and specific knowledge creation for academics. There is less academic discretion on the direction of their research and this calls to question issues of academic autonomy and academic freedom (Currie & Vidovich 2009; Solondz 1995; Taylor 2008). There is greater requirement for research to be aligned with the strategic direction of the university or government priorities in an attempt to generate research funding and to create value (Solondz 1995). This is reflected in government initiated funding sources such as the ARC. The conflict in autonomy is reflected by Henkel (2007, p. 97) who says 'the ideal of academe as sovereign, bounded territory, free by right of intervention in its governance of knowledge development and transmission, has been superseded by ideals of engagement within the societies in which academic institutions are 'axial structures', whose work it is important to governments, businesses and civil society'. In other words, academics are more often driven by the requirements and expectations of others. So, although, Marginson (1997, p. 75) argued that 'the neo-liberal reforms of the late 1980's had not abolished academic autonomy as many critics argued at the time, but changed its character' it is now manifested differently.

Indeed, the changed character is now directed more towards greater accountability for teaching and research outputs. Comparatively, research by Coates et al. (2008) found that majority of Australian academics do believe that they have autonomy in their position. This conflicts within the other research on autonomy in academia and perhaps the reasoning is autonomy is not clearly defined. For example when measuring the autonomy of academics is it research autonomy, teaching autonomy or autonomy derived from the overall flexibility of the position. According to Henkel (2007) academics and universities now work in a changed ideological environment and the previous defining elements of autonomy might be 'questioned as unrealistic or of uncertain value in a changed environment' (Henkel 2007, p. 94). However, issues of autonomy, whether altered or diminished have had a resounding impact on the role of the academic, as they are increasingly accountable through publication and evaluation. This calls into question the quality of life for the academic within the current changed environment.

The research on the impact of the changes in the academic indicates a changed quality of life. Research by McInnes (1999) found that academic work had the greatest impact on female academics' quality of life compared with males. Further, McInnes also found that half of the Australian academics surveyed (56%) saw their job as their greatest source of stress. Similarly, Abouserie (1996) found that 74% of academics rated work as their most significant cause of stress. Coates et al. (2008) found that nearly two thirds of their Australian academic sample believed that their working conditions had deteriorated and this significantly impacted on the academic ability to do their job well. And as noted previously the effect of work intensification has a great impact on levels of stress and wellbeing for academics generally. In the UK, trying to balance the demands of academic work and family life is the leading cause of stress for academics (Kinman 1998). Stress has many detrimental impacts; psychologically, socially, and physically (Antonovsky 1987; Frone, Russell & Cooper 1995; Halbesleben & Buckley 2004; Kinman 1998; Maslach 1982).

In similar work, Martin (1999) found that the changes in Higher Education had a profound effect on academics and their quality of lives. Her findings were focused in four main areas: lack of consultation, too much accountability, lack of vision and lack of value for the people and their worth. Many of these things led to a sense of disempowerment, low morale and lack of trust within universities. Notably, the absence of consultation goes against the grain of collegiality, 80% of non leader academics believed that there were too many accountability measures, 72% of non leaders believed that there was a clear lack of vision in their institutions. Support from the institution is of increasing importance and many academics believe that there is a lack of support, loyalty and commitment to them (Winter & Sarros 2002). If the university does not provide a supportive environment then it is likely to result in negative outcomes like a lack of involvement and commitment. One of the major outcomes from working in a stressful environment is detachment from the job and burn out (Maslach 1982; Maslach & Leiter 1997; Schaufeli, Taris & vanRhenen 2008; Schaufeli & Taris 2005) (see section 2.3.2), these are sometimes seen as the antipole to engagement. The research indicates that the changed academic role is more stressful than previously reported (Winefield et al. 2003) and this has been driven by an increased managerialism and changed management ethos (Fisher 1994). If humans are key competitive assets in universities and the knowledge economy, this does not bode well for the overall competitiveness of universities.

Many of these changes within the Higher Education sector impact on the fundamental role of academics as well as their overall wellbeing. Engagement has been approached from a well being perspective, demonstrating the relationship between engagement and a positive well being at work (Harter et al. 2003; Schaufeli, Salanova et al. 2002). Academics are now said to be

working harder and longer than they ever have before (Coates et al. 2008; Harman 2003; Houstan et al. 2006; McInnes 1999) which could be impacting on their overall work well being. Coates et al. (2008) found that Australian academics on average work more than 50 hours per week, well in excess of the standard full time hours. Academics are now more highly qualified; they are less satisfied, less committed and less involved with their institutions (Bellamy et al. 2003; Harman 2003; Lacy & Sheehan 1997; Maynard & Joseph 2008; Winter & Sarros 2002; Winter et al. 2000). Academics are not as committed as they once were, and recent research suggests that their resistance to managerialism is more covert rather than overt (Anderson 2008). There is limited research that explores the nature of resistance and the relationships with the work connectedness variable outcomes such as commitment. The manifestations of the changed role of the academic are within the bounds of the changes to the Australian Higher Education sector and many of the impacts on the academic has come about because of a greater focus on accountability, quality and attempting to demonstrate their worth and self preservation within the current systems.

In the current context in which academics operate it is imperative to understand engagement and what drives them to engage with their universities. An under-performing workforce could have a detrimental effect on a university and its ability to compete in the current competitive markets (see section 2.1). Conversely, the effective leverage of the academic human capital within universities can see academics operating more fully at their full capacity (Coleman 1988) and contributing to the strategic direction and competiveness of their universities (Boxall & Purcell 2008). This underpins the justification for research in this sector, as academics contribute so fundamentally to the knowledge economy.

Engagement with its many manifestations becomes an important consideration in this continual changing climate of Higher Education. There has been little exploration of engagement within this sector and in Australia. This research will therefore bring a greater understanding of the engagement of academics to enhance universities competitiveness. The next section will explore the specific organisational characteristics in the Higher Education sector.

3.3. Organisational Characteristics of Universities

Universities are often characterised as being different from other organisations. Much of the differentiation stems from the depiction of a flexible and autonomous workplace and job. In this sense, the operating environment in which academics work can be viewed as unique. In the knowledge economy in which universities operate, employees are seen as investors in their organisations (Kelloway & Barling 2000). In turn, these organisations need to provide the right

conditions to stimulate their employees' investment. This section examines the impact of support in the academic environment as well as the specific characteristics of academic jobs.

3.3.1.   A Supportive Work Environment

Having a supportive work environment is essential to the effective functioning of most workers. There is a gamut of research which identifies the links between support and employee outcomes such as increased commitment (Bishop et al. 2005; Eisenberger et al. 2004; Luthans et al. 2008; O'Driscoll & Randell 1999; Rhoades, Eisenberger & Armeli 2001; Saks 2006; Yoon & Thye 2002). One theory developed which supports this idea is organisational support theory (OST) developed by Eisenberger et al. (1986). OST is the perceived amount of support that organisations give to their employees, particularly the degree of commitment to their employees. For example, if a university supports its academics then those academics will likely reciprocate with higher levels of commitment. Clearly such a strategy would be desirable in a competitive environment (Bayona-Saez, Goni-Legaz & Madorran-Garcia 2009).

OST has typically been measured by the degree of perceived organisational support (POS). It is based on two key premises: that work is a social and economic exchange (Blau, P 1964); and the personification of the organisation. Personification can be envisaged as the actions taken by those within the organisation become representative of the organisation (Levinson 1965). It is suggested that POS is actually a reflection of the commitment of the organisation to the employee (Eisenberger et al. 1990). The measure of POS has been seen as a strong predictor of affective commitment (Hutchison 1997; McFarlane Shore & Wayne 1993; O'Driscoll & Randell 1999; Rhoades Shanock & Eisenberger 2006), organisational citizenship behaviours (McFarlane Shore & Wayne 1993), job involvement (O'Driscoll & Randell 1999) and job satisfaction (Eisenberger et al. 1997). Due to the operation of OST on social exchange some studies have looked specifically at the reciprocal relationship that POS has with affective commitment (McFarlane Shore & Wayne 1993). In the Higher Education environment, academics have identified support (or a lack of) as a significant problem (Martin 1999). Winter and Sarros (2002) found that many academics believed that there was a lack of support, loyalty and commitment to them from their university. Other research has shown that academics demonstrate waning levels of commitment and satisfaction (Bellamy et al. 2003; Juric et al. 2004; Lacy & Sheehan 1997; Winter & Sarros 2002). The current climate of managerialism in the Australian Higher Education sector may present potential perceptions of support. Especially, as managerialism is focused on cost minimisation, increased efficiency and productivity, these attributes add increased pressure to the academic. The academic maybe less likely to view the university as supportive given the increased pressure on them to perform (see section 3.1.3).

Support in the job has been shown to increase intrinsic motivation, dedication, absorption, vigour and meaningfulness (Bakker et al. 2007; Coetzer & Rothmann 2007; Olivier & Rothmann 2007). Developing a culture of support may come from practices such as open communication channels, recognition, career management, opportunities for growth and development. These are key drivers and have been found to be linked to enhanced engagement dimensions (Coetzer & Rothmann 2007; Latham & Pinder 2005; Lawler & Hall 1970; McDade & McKenzie 2002; Winter et al.2000; Zhou & Li 2008).

Having a supportive organisation is thought to be an instrumental antecedent in developing the engagement of academics in the Higher Education sector. This is due to the sector being characterised as autonomous and flexible and giving the indication that to have these dimensions requires a degree of organisational support. However, the research suggests that there is a lack of support for Australian academics by their organisations (Winter & Sarros 2002; Winter, Taylor & Sarros 2000). University management need to ensure that the human capital perceives a supportive environment in order to contribute effectively and successfully to the required outcomes and the competitiveness of the university.

3.3.2. Key Job Characteristics

The design of the job is another instrumental antecedent in the relationship with various measures of organisational related constructs. In the Higher Education sector the job role is often typified as having different job dimensions in comparison to other sectors. Typically the design of the job has been measured by the job characteristics model (Hackman & Oldham 1975, 1980) which measures the following attributes of the job: autonomy, task identity, task significance, skill variety and feedback from the job. These core job characteristics fulfil personal needs and then lead to the psychological states: through experienced meaningfulness, experienced responsibility and knowledge of results. There is an important role for job characteristics in eliciting key outcomes for academics (Winter & Sarros 2002). Winter et al. (2000, p. 291) found in their sample that academics had high levels of task identity, autonomy, skill variety and job challenge. As characterised as having a degree of individual control this is inconsistent managerialism and the drive for knowledge creation in universities. In principle then they are a group of workers who would ordinarily predict positive psychological states associated with engagement.

In section 2.2.2 of Chapter 2, it was demonstrated that the psychological states are important considerations in understanding engagement. Kahn (1990) also acknowledged the importance of the psychological states. May et al (2004) confirmed the role of the psychological states in understanding Kahn's conceptualisation of engagement (see also Olivier & Rothmann 2007).

Finally, Saks (2006) confirmed that the job characteristics model is an important antecedent to both job and organisational engagements. This supports the contention by Hackman and Oldham (1980) that having the core job dimensions will lead to an enhanced psychological state which is a subsequent determinant of job satisfaction and a source of motivation. Some job characteristic elements have been found to have negative impact on academics, and these have been the elements contributing to increased stress, time pressures, lack of resources, over-worked and demoralised (Eveline 2004; Solondz 1995; Winter & Sarros 2002; Winter, Taylor & Sarros 2000). This set of findings also indicates the uniqueness of the academic sample.

In many of the studies where job characteristics have been measured as an antecedent it has been significantly linked to constructs such as organisational commitment (Knudsen et al. 2003; Yoon & Thye 2002), perceived organisational support (Yoon & Thye 2002), job involvement (Winter & Sarros 2002), job satisfaction (Hackman & Oldham 1975, 1980; Winter & Sarros 2002), intrinsic work motivation (Fried & Ferris 1987; Hackman & Oldham 1980) and absenteeism (Fried & Ferris 1987). In an academic sample Winter and Sarros (2002) found support for the link between job characteristics and overall organisational commitment, where the job characteristics incorporated autonomy, task identity, feedback and job challenge. Additionally, there are negative job characteristics that have been found to increase the stress levels for academics; time pressures, lack of resources, being overworked and demoralised (Eveline 2004; Solondz 1995; Winter & Sarros 2002; Winter et al. 2000). This indicates that the characteristics of the job also can have a negative impact on the academic. Job redesign has been identified within the research literature as a way to increase and drive the core job dimensions (Hackman & Oldham 1975, 1980; Nogradi & Anthony 1988; Orpen 1997)

Job characteristics have been found to represent a key antecedent dimension in many studies and many samples (Fried & Ferris 1987; Knudsen, Johnson & Roman 2003; Winter & Sarros 2002; Yoon & Thye 2002). The research on academic samples suggests that these workers have the core job dimensions that are required to engage at work. This is evident in both the literature on academia and in the general literature. The unique job characteristics assist the academic to work effectively, which would result in increased job satisfaction and motivation which would lead to better overall performance and effective leverage of human capital. The next section turns to examine the key contextual variations affecting university academics.

3.4. Contextual Variations within Academia

Academics as a professional group have some unique contextual variables that may indicate important variations within this group. The unique contextual variables that are explored in this section fall under two categories: personal variables and structural organisational variables. The

personal variables are those that academics have limited or no ability to alter, for instance their age and gender. The structural organisational variables are those that academics can work to change and these encompass: the type of university employing them and their academic classification levels (lecturer level).

As one of the personal variables, the age of academics has been shown to be important. The academic sector in Australia is characterised as one of the oldest workforces operating. Staff in universities are heavily concentrated in older age groups (Hugo 2005). This is because in most instances to become an academic requires a Higher Education (post-graduate) degree with greater importance placed on PhDs as a requirement. This contributes to a large proportion of time spent studying usually before the commencement of the academic career. Alternatively some academics commence after first gaining expertise in the workforce of other sectors. Given the older age profile of the profession it is not surprising that many refer to times past in the Higher Education as the 'golden era' (Taylor 2008), a time when there was a true collegial environment. Many in the older age group of academics have experienced the changes to the sector during their working lives (DEEWR 2008) so the age of academics becomes a crucial factor when thinking about researching in the academic context. The idea of a golden age could also be having a profound negative effect on younger academics. It may impede their commitment to opportunity and future changes their university faces as they view their universities through this critical lens (Taylor 2008). However, the Golden era was also a time characterised as inefficient and ineffective (Harman & Treadgold 2007) where practices were in place that did not encourage accountability.

The other personal variable within universities is gender. Hugo (2005) identified considerable gender inequities in academia, where women are significantly underrepresented. The academic literature on gender issues have provided marked differences between the genders. For instance, males perceive greater support and job design characteristics than compared to women and greater participation in university decision making (Winter & Sarros 2002). Male academics have also been found to be more satisfied (Lacy & Sheehan 1997). As academics, males and females differ on what they are more satisfied with. Females consider themselves more satisfied with teaching while males are more satisfied with level of job security, opportunities to pursue their own ideas and the job as a whole (Lacy & Sheehan 1997). These findings from previous studies may indicate that men will perceive the characteristics of their jobs differently to women; especially because they view that they have greater control to pursue their own ideas. There may be gender differences on the perceptions of organisational support especially since in prior research males have found that they have greater participation in decision making. Age and gender are therefore both considered to be important factors when researching academia.

In addition to the personal variables there are two structural organisational variables; university grouping and lecturer level. Universities in Australia fall within five major groups and of these groups, the more elite branded of the universities is the Group of Eight. This group represents a higher level classification on the Academic Ranking of World Universities (ARWU 2008) compared to the other University groups. Three of the groupings are official classifications, with official university membership: Group of Eight (Go8), Australian Technology Network (ATN) and Innovative Research Universities (IRU). These three are overseen by a secretaire and have their own websites. The other two are not official, however, the Australian Vice Chancellors Committee (AVCC) and the Australian Education Network (AEN 2007) recognise four groupings: the three official groups and New Generation Universities (NGU). Regional Universities make up the fifth classification and this group includes those universities that are not part of the other four groupings. For the benefit of this research each of the five groups will be used to provide a board from which to compare universities. Table 3-1 outlines the universities with their classification as used for this thesis.

Table 3-1 Australian University Classification

Go8	ATN	IRU	NGU	Regional
*Australian National University *Monash University *The University of Queensland *The University of Sydney *University of Adelaide *University of Melbourne *University of New South Wales *University of Western Australia	*Curtin University of Technology *Queensland University of Technology *Royal Melbourne Institute of Technology *University of South Australia *University of Technology, Sydney	*Flinders University *Griffith University *Latrobe University *Macquarie University *Murdoch University *University of Newcastle	* Australian Catholic University * Central Queensland University * Edith Cowan University * Southern Cross University * University of Sunshine Coast * University of Ballarat *University of Canberra * University of Southern Queensland * University of Western Sydney * Victoria University	*Charles Darwin University *Charles Sturt University *Deakin University *James Cook University *Swinburne University of Technology * University of New England * University of Tasmania * University of Wollongong

The Go8 university group is recognised and marketed throughout the world. These universities are the oldest of the universities in Australia. They are highly competitive for students because of their elite status and they produce three times as many research publications than compared to the other groups (Harman 2003). There is an indication that this group may vary to the other university groups in terms of perception of support. For instance their higher publication rates might predict greater resources or time provided to academics for that purpose.

As well as the university group, lecturer classification is another contextual variation in the study of academia. In Australian universities there are various academic levels dependent upon

qualifications and work rate output, from Assistant Lecturer (level A) to Professor (Level E). Academics in the role of Professor and Associate Professor would be expected to have more senior responsibilities than in comparison to lower level lecturers (Winter & Sarros 2002; Winter et al. 2000). Professors have been found to receive greater challenges from their jobs and use a greater skill variety (Winter & Sarros 2002). Professors and Associate Professors were also found to have greater involvement and participation in university decision making than those at lower academic levels. Participation has been noted as a key driver for the enhancement of engagement (Antonovsky 1987; Coetzer & Rothmann 2007). In a South African University, Barkhuizen and Rothmann (2006) found that Professors also had greater work engagement (using the UWES) than academics at lower levels. There are therefore clear differences at work for different academic classifications associated with the characteristics of the job and the support from the organisation. Academics at higher classification levels would be expected to be older than lower classified academics and this may also contribute to their greater view that a golden age of Higher Education has passed them by (Taylor 1999). This may be slightly jading their perceptions of their current situations within the university.

The contextual variations in academia clearly identify two key groups of variations: personal and structural. The personal variables of age and gender as well as the structural variables of university group and lecturer classification present variations seen from past research. The contextual variations also indicate possible areas for future research where there may be important variation. The variables are used in this thesis and their use in the engagement model is discussed further in the next chapter.

3.5. Chapter 3 Summary

There have been considerable changes within the Australian Higher Education system. It was documented throughout this chapter that various governmental reforms have had a significant impact on academics. This has included: opening universities up to market forces to increase competition and quality; cutting back government funding; and increasing student numbers. These reforms have occurred alongside globalisation, the increase in ICT's, societal changes and competition. The result has been a change to fundamental core and the ethos of Higher Education institutions. Higher Education managers now take a more managerialist approach to the operation of their institutions which has resulted in an increased commercialisation and a consumer focus for education as a product.

Within the context of change, the role of academics has altered. Academics have a greater work load to balance with greater student numbers, more accountability for quality and more regulations; they work harder and longer than before but as a group they appear not to be faring

well. This chapter has argued that this is to the detriment of the university. In this environment engagement has paramount importance. Personal and structural variables were introduced that have considerable importance for academics and the study of academia, these contextual variables may shape differences within this thesis on engagement.

The next chapter explores the conceptual framework for this study, building on the academic context for this research and on the engagement framework developed in Chapter 2.

Chapter 4 : CONCEPTUAL FRAMEWORK AND MODEL DEVELOPMENT

The previous chapter detailed the changing context of the Higher Education system and the changing role of academics. This chapter brings together the various dimensions of engagement identified in Chapter 2 with the dimensions identified from the academic context in Chapter 3 to develop the conceptual framework and the model of engagement used in this research. This chapter begins detailing the underlying theme of engagement as: emotions, cognitions and physical, rational and behavioural attributes.

The research propositions are then developed based on the theories and past research in the field. The chapter then moves to the development of an argument for the presence of higher order engagement constructs characteristics indicative of the engagement contributions (section 4.2). The potential common underlying constructs are presented with empirical justification for their existence based on previous research.

4.1. Development of the Engagement Framework

This section brings together the various engagement concepts to build the framework used for this thesis and from this develops the research propositions. As described in Chapter 2 the common underpinning theme of engagement research is the presence of emotional, cognitive and behavioural/physical/rational outcomes aspects of engagement representing outcomes. The past literature gives three dimensions of engagement. The definitions used in this research for each are the:

- Emotional dimension (having the emotional capacity and capabilities to engage);
- Cognitive dimension (thinking capacity and capabilities to engage) (ISR 2004a; Schaufeli, Martinez et al. 2002); and
- Physical dimensions (the outcome responses) (Kahn 1990).

The engagement model that is developed for this research equates the physical element of engagement with behavioural and rational engagement dimensions for the following reasons (see discussion in section 2.4.2). Firstly, many of the consultants introduce elements within their engagement conceptualisations that can be linked to outcome based derivatives such as physical and behavioural dimensions. For example, Towers Perrin claims that rational engagement leads to discretionary effort (see also CLC and IES). Discretionary effort is often noted as an outcome and a behavioural component; physically acting in a particular way, staying back to assist a colleague (Organ, Podsakoff & Mackenzie 2006). Furthermore, the ISR

specifically include an 'act' engagement dimension, which includes extra effort (discretionary effort) and stay with the organisation, indicating outcomes which link to behaviour and physical dimensions. Similarly, the CLC, who identified that engagement, results in discretionary effort and intention to stay with the organisation. Secondly, making a move from the consultants, behavioural engagement (Macey & Schneider 2008; Newman, DA & Harrison 2008) is seen as incorporating outcome dimensions that encompass behaviours and physical reactions. In a sense the physical dimensions of engagement are linked to behaviours. Whilst rational engagement suggests a cognitive connection, the rational engagement dimensions are often linked to outcome behaviours like discretionary effort and intention to stay with the organisation. Therefore within this thesis, this engagement dimension will refer to individual engagement outcomes rather than physical and behavioural.

This thesis further proposes that the emotional and cognitive engagement dimensions lead to the engagement outcomes. The emotional and cognitive engagement dimensions predict the engagement outcomes, which are the outcomes of engagement as an emotional/ cognitive state, similar to Schaufeli, Martinez et al. (2002). These ideas are taken up throughout this chapter, in the development of the conceptual framework and in the development of the research propositions. The engagement model proposed for this research is presented in Figure 4-1 and this is based on engagement having 3 key dimensions emotional, cognitive and outcomes.
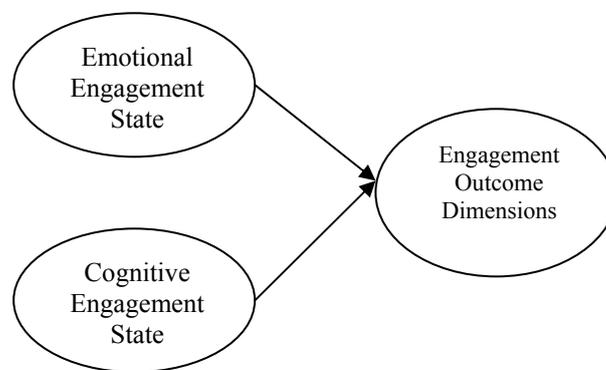
Figure 4-1 Dimensions of Engagement

Emotional and cognitive engagement dimensions are thought to work together to produce the individual engagement outcomes. The literature on the links between emotions and cognitions suggests that the relationship between the two is complex; however, there is an interaction between them (Izard 1993; Lazarus 1994; Lord & Kanfer 2002). There is argument within the consultant literature that the dimensions of engagement do not act alone but they are synergistic (ISR 2004a; Robinson, Perryman & Hayday 2004). Kahn (1990) in his work did not specify the interactions between the engagement dimensions. With engagement consisting of interrelated

dimensions there is an expectation that the way a person feels (emotions) and their thoughts (cognitions) will impact their behaviours and attitudes to the job, work and organisation (physical, rational and behaviour). The thoughts and feelings will impact on the outcomes; these linkages are demonstrated in Figure 4-1. There is support within the wider literature, beyond engagement that identifies these types of causal linkages (Bakker et al. 2007; Mauno, Kinnunen & Ruokolainen 2007; Saks 2006)

Taking this idea of interacting, yet distinct components, this research uses the framework as outlined in Figure 4-2 where engagement can be seen as the interacting relationship between emotions and cognitions which leads to the individual engagement outcomes. Further, there are two key engagement components at play: individual engagement capabilities and individual engagement outcomes. Engagement capabilities refer to the ability of employees to be engaged at work because they have the requisite set of emotional and cognitive capabilities. These individual capabilities lead to individual engagement outcomes. The model is defined in terms of the capabilities needed to engage: the feelings and thinking, which lead to subsequent engagement outcomes in the form of appropriate behaviours.

Figure 4-2 demonstrates these causal linkages. These linkages were also observed by Macey and Schneider (2008) who argued that state-type engagement results in 'behavioural' engagement or behavioural outcomes. Similarly, the CLC (2004) and IES (Robinson et al. 2004) also identified a behavioural component of engagement outcomes in the form of discretionary effort. In other words it is argued that individual engagement capabilities will have a direct impact on individual engagement outcomes. This leads to the first proposition;

*Proposition One; The **individual engagement capabilities**, as defined by emotions and cognitions will positively affect the **individual engagement outcomes**. (*Figure 4-2, *P1)*
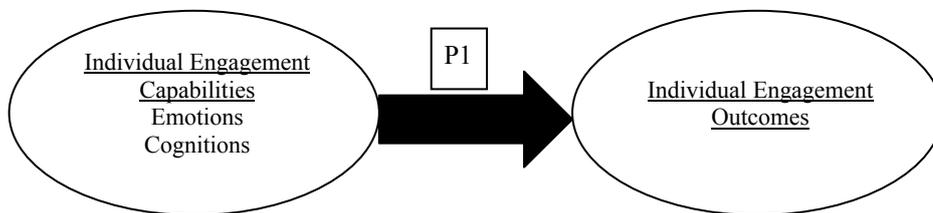
Figure 4-2 Conceptualization of the Overarching Causal Linkages

4.1.1. Individual Engagement Capabilities

Individual engagement capabilities as outlined above are those capabilities, both emotional and cognitive, that are needed to engage and to be psychologically present at work. It is proposed in this thesis that these capabilities will impact on individual engagement outcomes (Figure 4-2).

This section develops the propositions for the individual engagement capabilities; the emotional and cognitive engagement capabilities.

4.1.1.1. Emotions in the Engagement Process

From the research literature it is clear that emotions play some role in the engagement process. The section briefly considers the role of emotion at work including meaningfulness and affect. It is argued that emotion may predispose workers to perform to a certain level of output and therefore may be a component of individual engagement capabilities.

Many researchers have highlighted emotions as a key dimension of engagement (CLC 2004; ISR 2004a; Kahn 1990; May, Gilson & Harter 2004; Schaufeli & Bakker 2004). Kahn (1990) defines emotional engagement in terms of being able to engage oneself emotionally at work as having the emotional capacity and capabilities to engage. The study of emotions at work is not new. Hochschild (1983) is said to be the pioneer of the study and her work has since been confirmed by others (Baruch & Winkelmann-Gleed 2002). According to Brown (1996) emotions play an important role in organisations as they indicate the types of behaviours that workers exhibit. For example, employees feeling disgruntled or upset by an occurrence at work may have a negative impact on the level of customer service offered. Emotions are said to become 'very much a part of the task and social components at work' (Waldron 1994, p. 389) because they influence the manner in which the work is done. Sandelands and Boudens (2000) argue that emotions at work are important in understanding where the feelings of interest lie. Arguably, this indicates the link between emotions to engagement outcomes.

The dimension of meaningfulness was found by Sandelands and Boudens (2002) to be a major contributor to emotion, particularly in terms of employees developing meaningful connections to others in the workplace. The authors noted that: 'feelings are strongly identified with a person's place and activities in the life of the group and the place of their work in the larger scheme of things' (Sandelands & Boudens 2000, p. 52). More specifically meaningfulness at work is where 'feelings and doing are coexistent, coterminous, and coordinate. Feelings merge with doing and are experienced as a quality of its form' (Sandelands 1988, p 439). This indicates that the feelings are important in the determination of specific outcomes and they are linked to and are part of behaviours. In other words, the authors argue that having meaningful relations with co-workers (the work feeling) may impact upon levels of engagement outcomes (the doing). Perceptions of meaningfulness are not just specific to employees' relationships at work. Kahn (1990) noted that meaning is derived from the connections made with the organisation (see section 2.3.3). Whilst in some workplaces there is an increasing focus on enhancing performance and this can threaten a person's sense of meaning due to the specific

performance focuses. The loss of meaning can affect an employee's attitudes, behaviours and mental stability (Chalofsky 2003). Meaningfulness is an important emotional consideration at work.

The consultant literature also demonstrated an emotional dimension in the conceptualisations of engagement. Towers Perrin (2003) viewed engagement as having both emotional and rational components, in a similar way to the CLC framework of emotional commitment (see also Hewitt Associates 2005). To define emotional engagement Towers Perrin (2003) suggested that it is a personal feeling that employees have about their jobs. The CLC (2004) found that emotional commitment is evident in the degree of discretionary effort (outcome) that an employee puts in at work, which indicates a consequence of engagement rather than a personal feeling about the job, the work and/or the organisation.

In other research on emotion at work, the ISR (2004a; 2004b) list an affective component in their engagement framework that indicates a 'feel' aspect. It is defined in terms of having a sense of belonging and attachment to, as well as pride in, the organisation in which one works. Belonging and attachment to the organisation have similarities to the definitions of affective commitment by Meyer and Allen (1984; Allen & Meyer 1990; Meyer & Allen 1991). The importance of emotion in engagement is apparent; employees need emotional capabilities which transfer into particular outcomes.

The emotional engagement capabilities are the emotional abilities and the potential to be able to engage at work; in effect it is the emotional empowerment to engage. This is evident in the immense literature on engagement particularly in the consultant domain which links engagement and it sub dimensions to outcomes and enhanced organisational performance (Echols 2005; Gubman 2004; Harter, Schmidt & Hayes 2002; Towers Perrin 2003). Therefore the second proposition for this thesis is that emotional engagement, or employees' investment of themselves in their work roles and their work relationships (degree of psychological presence) will impact on engagement outcomes this leads to the next proposition;

*Proposition Two: Individual engagement capabilities - **Emotions (emotional engagement capabilities)** will have a positive effect on the **individual engagement outcomes**. (Figure 4-3, P2)*

4.1.1.2. Cognitions in the Engagement Process

This section canvasses the engagement literature to demonstrate how cognition plays a role in the engagement process and can be considered a component of the individual engagement capabilities.

Cognitive theory is a component of the study of behavioural responses (Aronson 1997; Festinger 1957). Cognitions are the thoughts and thinking associations with the task, the work, the organisation and co-workers. The ISR (2004a, 2004b) denotes cognitions as the intellectual understanding, acceptance and support of the organisations values and goals. They labelled this as the 'think' aspect of engagement. It gives consideration to the thought processes involved in the determination of the feeling and its subsequent outcomes. It is believed that the cognitions associated with engagement are important as an individual engagement capability as well as having a direct association with the individual engagement outcomes. Schaufeli et al. (2002) defined work engagement as an affective- cognitive state, that requires both a thinking and feeling for the development of work engagement. The cognitive dimension of engagement has largely been neglected (or ignored) in the research literature as a specific engagement state and importantly as an instrumental part of the engagement process. Nevertheless, Kahn (1990) identified the importance of cognitive engagement, stating that employees' thinking capacity is important in determining their psychological presence at work. This means that cognitive engagement capabilities represent the potential to engage at work, and can be described as a cognitive empowerment to engage. It is argued here that to be engaged one needs to be cognitively involved and have the cognitive capabilities to be psychologically present which results in specific engagement outcomes. Therefore the next proposition is that cognitive engagement capabilities 'the thinking' would be expected to impact directly on the individual engagement outcomes, leading to the next proposition:

Proposition Three: Individual Engagement Capabilities - **Cognitions (cognitive engagement capabilities)** *will have a positive effect on the* **individual engagement outcomes.** *(*Figure 4-3*, P3)*

4.1.1.3. The Relationship between Cognitions and Emotions

The linking of cognitions and emotions observed in the organisational psychology literature has been subject to considerable debate and analysis (Lord & Kanfer 2002). It has been argued that cognitions facilitate the link between the environmental input, emotion and the behavioural outputs (Lazarus 1994; Scherer 1994). In defining engagement as an affective-cognitive state, Schaufeli et al. (2002) identify a link between these dimensions for the benefits of engagement (section 2.3.3.2). Similarly Kahn (1990) and the ISR (2004) also link emotions and cognitions

together as part of their engagement conceptualisations. Finally, Maitland (2007) found that cognitive engagement was just as important as emotional engagement, particularly for optimal performance at work.

But as argued in Section 4.1, the nature of the relationship between these two engagement dimensions is not straightforward. Cognitions (the thinking associations) are important in the determination of one's emotions. However, emotions are not always reliant on a cognitive assessment of a situation to lead to an outcome. One can react on one's emotions without thinking about it. For instance, Izard (1993) states that emotions do not always need a cognitive assessment of the environment. Izard also argues that emotions that occur can automatically lead to response, in this case an outcome (this is apparent in proposition two). It is proposed here that whilst the cognitive engagement capabilities are important in the assessment of emotional engagement capabilities, the emotional engagement capabilities do not always need an assessment of the cognitive engagement capabilities (Figure 4-3). Therefore;

Proposition Four: Individual engagement capabilities - **Cognitions (*cognitive engagement capabilities*)** *will have a positive effect on the* **emotional engagement capabilities**. *(Figure 4-3, P4)*
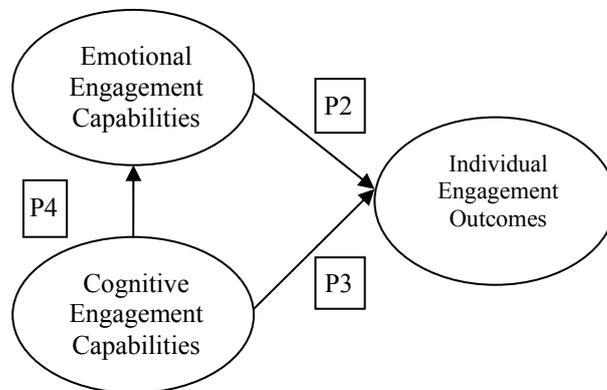
Figure 4-3 Engagement Proposition Relationships

This section has identified each of the individual engagement capabilities and proposed specific relationships between the emotional engagement capabilities and the cognitive engagement capabilities with respect to their impact on individual engagement outcomes. It was proposed that the emotional and cognitive engagement capabilities will directly impact on the individual engagement outcomes. In addition it was proposed that there will be a specific directional relationship between the capabilities; the cognitive engagement capabilities will directly impact on the emotional engagement capabilities. Four research propositions were developed that will assist in the overall understanding of engagement and the testing of the developed engagement

framework. These propositions are summarised in Table 4.1 along with the propositions relating to antecedents to engagement which are described next.

4.1.2.   Organisational Antecedent Characteristics for Engagement

In addition to the interaction of the engagement factors there are a range of factors that may act as antecedents on the dimensions of engagement (capabilities and outcomes). Chapter 3 provided the context of Higher Education for this thesis and identified that both a supporting environment in which to work and specific job characteristics can lead to positive outcomes (see section 3.3), including increased commitment, satisfaction and motivation in academic samples (Lacy & Sheehan 1997; Winter & Sarros 2002; Winter et al. 2000). These can be considered antecedents to engagement.

The right conditions in the knowledge economy can stimulate employees' investment of themselves into the organisation (Kelloway & Barling 2000). In the conceptual model of engagement developed here, it is envisaged that a supportive environment and job characteristics will play an important antecedent role, especially since engagement research has identified these aspects as key dimensions impacting engagement (Macey & Schneider 2008; Saks 2006).

Building on the framework presented in Figure 4-2, the antecedent relationship along with propositions is reflected in Figure 4-4. This section will explore the organisational characteristics and draw on the propositions regarding their impact on and association with the individual engagement capabilities and outcomes.

4.1.2.1. Supportive Organisational Environment

Having a supportive organisation is thought to be an instrumental antecedent to developing the engagement of academics. In the literature on academics, as outlined in Chapter 3 (section 3.3.1), academics at their various levels of classification vary according to their perceptions of support (Winter and Sarros 2002). Organisational support theory predicts a social and economic exchange and a personification of the organisation through the actions of those within the organisation, such as managers to which employees respond (Eisenberger et al. 1986). The phenomenon is often measured with the scale of perceived organisational support, which is classified as the commitment of the organisation to the employee (Eisenberger, Fasolo & Davis-LaMastro 1990). In the Higher Education environment, academics have identified support (or rather the lack of it) as a significant problem (Martin 1999). Winter and Sarros (2002) found that many academics believed that there was a lack of support, loyalty and commitment to them from their university. Treating academics as unique with strategic value (Lepak & Snell 1999, 2007) would enhance the perception of support from their university.

In many studies a supportive environment has been captured as a significant antecedent to many other major constructs of work behaviour (Hutchison 1997; McFarlane Shore & Wayne 1993; O'Driscoll & Randell 1999; Rhoades Shanock & Eisenberger 2006). Because organisational support theory operates through social exchange, some studies have specifically examined the reciprocal relationship that perceived organisational support has with affective commitment (McFarlane Shore & Wayne 1993). From these studies it can be concluded that organisational support theory has a significant impact on the various constructs. Briefly, if employees perceive that their organisation supports them (or is committed to them) then using the two premises of organisational support theory, obligations and personification, there is a corresponding positive impact on employee emotions and cognitions and consequently a positive impact on engagement outcomes. Further, if employees perceive that their organisation supports them then this impacts on the thinking that is required for the job and the feelings associated with the job, work and organisation, which leads to positive engagement outcomes. This leads to the next proposition:

*Proposition Five; Organisational Characteristics - A **supportive organisational environment will have a positive effect on each of the individual engagement capabilities (emotions and cognitions) and the individual engagement outcomes.** (*Figure 4-4, P5)

4.1.2.2. The Design of the Job

Another organisational characteristic which can be seen as an important antecedent to engagement is the design of the job. Job design is most often measured according to the job characteristics model developed by Hackman and Oldham (1975, 1980). This instrument measures the job attributes of: autonomy, task identity, task significance, skill variety and feedback from the job. In Chapter 3 (Section 3.3.2) various job dimensions were identified as important for academic engagement such as: task identity, autonomy, job challenge and skill variety (Winter & Sarros 2002). These core job characteristics fulfil employees' personal needs and lead to the psychological states: through experienced meaningfulness, experienced responsibility and knowledge of results. It was argued in Chapter 3 that the academic population is unique for its high levels of autonomy and flexibility and so academics should ordinarily be more likely to have these job attributes. However, given the negative impact of the dramatic changes to the Higher Education sector on that group of workers, many studies have found them to exhibit increased stress; and to report time pressures, lack of resources and over-worked (Eveline 2004; Solondz 1995; Winter & Sarros 2002; Winter, Taylor & Sarros 2000). In other words, despite their relatively high levels of autonomy and flexibility academics appear to be less engaged than their organisational characteristics would predict.

Chapter 2 presented an argument derived from Kahn (1990), May et al. (2004) and Olivier and Rothman (2007) that the psychological states are important for employee engagement to develop (section 2.2.2). Saks (2006) identified that the job characteristics model represents an important antecedent to both job and organisational engagement, which supports the Hackman and Oldham's (1980) contention that having the set of core job dimensions will lead to an enhanced psychological state which is a subsequent determinant of job satisfaction and a source of motivation.

Job characteristics have been found to be a significant antecedent in research on work behaviours and these were detailed in Chapter 3 (section 3.3.2). In an academic sample Winter and Sarros (2002) found support for the link between job characteristics and overall organisational commitment, where the job characteristics incorporated: autonomy, task identity, feedback and job challenge (Section 3.1.3). With regards to the emotions and cognitions, it is believed that if one has the job design or the job characteristics that are keys to job enrichment (Hackman & Oldham 1980) then this should impact both on one's thinking and one's feelings with regards to the job, work and organisation and subsequent engagement outcomes. Similarly, Renn and Vandenberg (1995, p. 299) found that the core job dimensions have a direct impact on different outcomes stemming from the immediate affective response to the job from the activation of cognitions. This suggests a key link between cognition and emotion as was discussed in the individual engagement capabilities section: 4.1.1.3. This leads to the next proposition;

*Proposition Six; Organisational Characteristics - The **design of the job** (job characteristics) will have a positive effect on the **individual engagement capabilities (emotions and cognitions) and the individual engagement outcomes.** (*Figure 4-4, *P6*)

4.1.2.3. Job Design (characteristics) and a Supportive Environment

Taken together both of the organisational characteristics discussed above are antecedents to the individual engagement capabilities and the individual engagement outcomes. The previous section and Chapter 3 (section 3.3.1 and 3.3.2) canvassed the literature and developed theoretical arguments for both perceived organisational support and the job characteristics as key antecedents to the engagement dimensions (Saks 2006). This was supported in the engagement literature, the wider literature and the in studies conducted in the context of academia (eg Winter and Sarros (2002). These two organisational characteristics are positioned as integral to the development of the knowledge worker and the engagement of this unique workgroup.

Despite the research using these two dimensions, evidence of a causal nature between the two is limited. Hutchison (1997) found perceived organisational support to be an intermediate link between various antecedents and affective commitment. These antecedents were; role related variables, structural and work experiences. Mowday et al. (1979) developed and tested these antecedents variables in a previous organisational commitment study. The study by Hutchison (1997) indicates that POS can be an intermediate link with affective commitment, and the characteristics of the job may then act as the antecedent. The characteristics of the job may encapsulate some of the ideas captured by Mowday et al. (1979) antecedents, particularly, the structural and work experience variables.

Hutchison (1997) also proposed a two stage model of antecedents and affective commitment with perceived organisational support as the intermediate link. In that model, stage one antecedents were evaluated as a source of support that is attributed to the actions of management. In this case, the characteristics of the job are attributable to management. In other words, the job has been designed by management to have certain characteristics and supply certain information such as autonomy, task identity, task significance, skill variety and perceived feedback from the job. Using the logic of Hutchison, this would impact on the perceived level of support. In stage two, the perception of support mediates the effect of the antecedent (characteristics) on the outcome. In Hutchinson's scenario this is affective commitment. But this may extend to other variables, especially considering previous research links to both job characteristics and a supportive organisation. It may for this thesis mean that the design of the job will impact on the perception of a supportive environment (Figure 4-4). If university management provides the key job characteristics (autonomy, task identity, task significance, skill variety and feedback from the job) then it will be more likely that academics will view the organisation as supportive (committed to them). This leads to the next proposition:

*Proposition Seven; The **design of the job** (characteristics) will positively affect the perception of a **supportive organisational environment**. (Figure 4-4, P7)*
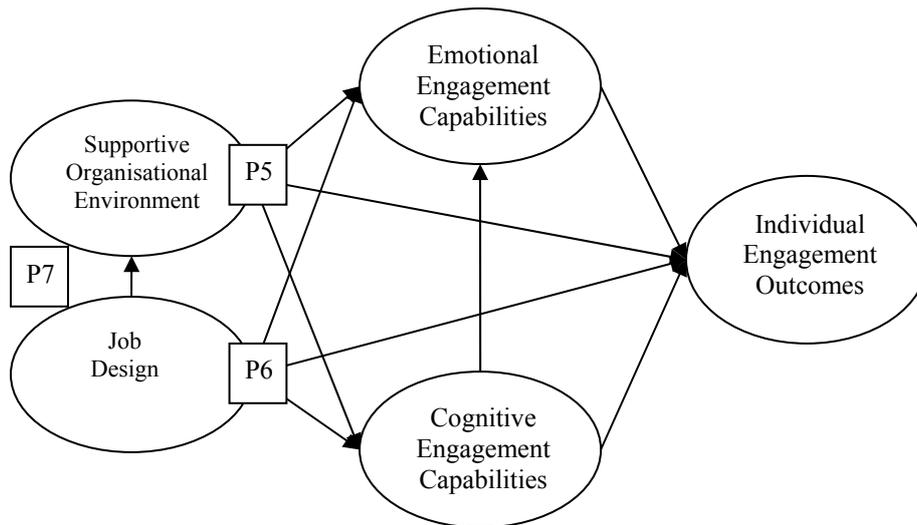
Figure 4-4 Proposition Relationships for the Organisational Antecedents to Engagement

In this section two organisational characteristics were argued to be antecedents to the engagement dimensions: perceived organisational support and the job characteristics. Both of these organisational dimensions were considered in the context of academia and it is proposed that they would both individually impact on the emotional engagement capabilities, the cognitive engagement capabilities and the individual engagement outcomes. This thesis argues that these two organisational characteristics are considered to be key antecedents to all the dimensions of engagement. The relationships are illustrated in Figure 4-4, which identifies the three research propositions introduced in this chapter. Within the wider literature there is limited research to support a specific casual relationship between perceived organisational support and job characteristics; it was therefore proposed that there was a relationship between the two and three research propositions were developed. The next section moves to consider the contextual variables for this study.

4.1.3. Contextual Variables

Whilst it is proposed that the engagement capabilities and outcomes are affected by organisational characteristics, there are specific contextual variations for the sample group that may also influence engagement. Chapter 3 presented the Higher Education environment and discussed the uniqueness of academics as a sample group. Academics are faced with certain contextual dimensions different from other sample groups which may impact the results if not these are controlled for. This section identifies the composition of the workforce and the nature of the job as unique factors for this sample group (section 3.3).

Chapter 3 introduced two groups of contextual variables which were personal and structural organisational variables. The personal variables were identified as those that academics have limited or no ability to influence to change. These variables were identified as their age and gender. As explained in Chapter 3, the academic workforce is older than many others, and the starting age is older (Hugo 2005). Furthermore the perceptions male and female academics have on many elements of working life has shown considerable variations (Lacy & Sheehan 1997; Winter & Sarros 2002). It is believed that both of these need to be controlled for due to variations on perceived organisational support and job characteristics they create. The structural organisational variables are those that can be influenced or controlled by the academic, such as university grouping and lecturer classification level. As outlined in section 3.3 in Chapter 3 there are five key universities groupings, and the Group of Eight have been noted as being more prestigious than the Australian universities. The Group of Eight universities are ranked higher on the Academic Ranking of World Universities (ARWU) and they publish three times as many journal articles than other university groups (Harman 2003). This group may yield differences on the perceived organisational support and job characteristics. Additionally, lecturer classification levels have been shown in previous research to present differences in roles (job characteristics) and perceptions of support (Barkhuizen & Rothmann 2006; Winter & Sarros 2002; Winter, Taylor & Sarros 2000). This research contends that the contextual variables will directly impact on the organisational characteristics. This will then account for the indirect effect on the engagement dimensions. These relationships are pictorially represented in Figure 4-5. The research proposes the following proposition;

*Proposition Eight; Contextual Variables – The **personal variables** and the **structural organisational variables** will have a direct association with the **organisational characteristics** (perceived organisational support and job characteristics) and an indirect association with the **engagement capabilities** and **outcomes**. (*Figure 4-5, P8)

4.1.4. Overview Of Conceptual Framework for Thesis

In summary, this thesis has proposed that the individual engagement capabilities of emotions and cognition are instrumental in the achievement of certain individual engagement outcomes. The framework identified the relationship between the emotional engagement capabilities, cognitive engagement capabilities and the individual engagement outcomes. It also contended that the cognitive engagement capabilities come before the emotional engagement capabilities, within the model.

Based on theoretical evidence this section also positioned two organisational characteristics as key antecedents in the investigation of the engagement dimensions. These are the job

characteristics and the perception of a supportive organisational environment. These two sets of organisational characteristics have been embedded in previous literature as key antecedents to many outcome-based variables linked to work connectedness variables. In addition the relationship between job characteristics as antecedent to perceived organisational support was also defined.

Two groups of contextual variables were introduced that could have a direct effect on the perceptions of support and the job design characteristics. These were identified as dimensions critical to the uniqueness of the sample with potential to impact results. Overall, eight key propositions for this thesis were revealed that capture the essence of the conceptual framework. These eight propositions are presented in
Table 4-1 Proposition **Summary**.

Table 4-1 Proposition Summary

Proposition One P1	*The **individual engagement capabilities**, as defined by emotions and cognitions will positively affect the **individual engagement outcomes**.*
Proposition Two P2	*Individual engagement capabilities - **Emotions (emotional engagement capabilities**) will have a positive effect on the individual **engagement outcomes**.*
Proposition Three P3	*Individual Engagement Capabilities - **Cognitions (cognitive engagement capabilities**) will have a positive effect on the individual **engagement outcomes**.*
Proposition Four P4	*Individual engagement capabilities - **Cognitions (cognitive engagement capabilities**) will have a positive effect on the **emotional engagement capabilities**.*
Proposition Five P5	*Organisational Characteristics - A **supportive organisational environment** will have a positive effect on the **individual engagement capabilities (emotions and cognitions) and the individual engagement outcomes**.*
Proposition Six P6	*Organisational Characteristics - The **design of the job** (job characteristics) will have a positive effect on the **individual engagement capabilities (emotions and cognitions) and the individual engagement outcomes**.*
Proposition Seven P7	*The **design of the job** (characteristics) will positively affect the perception of a **supportive organisational environment**.*
Proposition Eight P8	*Contextual Variables – The **personal variables** and the **structural organisational variables** will have a direct association with the **organisational characteristics** (perceived organisational support and job characteristics) and an indirect association with the **engagement capabilities** and **outcomes**.*

Figure 4-5 depicts the relationships between the variables which are highlighted in the conceptual framework. The eight propositions seek to address research questions 3 and 4. Research question 3 asks: to what extent do emotional and cognitive workplace

connectednesses variables explain additional variation in the individual workplace connectedness outcomes after university structure, demographics and the work context variables are controlled for? This was specifically addressed by proposition 1 where it is proposed that together emotions and cognitions impact on the individual engagement outcomes. Research question 4 addresses a model of engagement organised into emotional, cognitive and outcomes that can identify pathways of engagement and provide insight into academic engagement in Australia. Research question 4 is addressed with propositions 2-8 that aim to identify some of the pathways for engagement. The next section will explore in greater detail the individual engagement capabilities and outcomes.

CONTEXTUAL VARIABLES

ORGANISATIONAL CHARACTERISTICS

INDIVIDUAL ENGAGEMENT CAPABILITIES

INDIVIDUAL ENGAGEMENT OUTCOMES

P1

Personal Variables

Structural Organisational Variables

Supportive Organisational Environment

Emotional *Engagement Capabilities*

Job Design/ Characteristics

Cognitive Engagement Capabilities

Individual Engagement Outcomes

P2

P3

P4

P5

P6

P7

P8
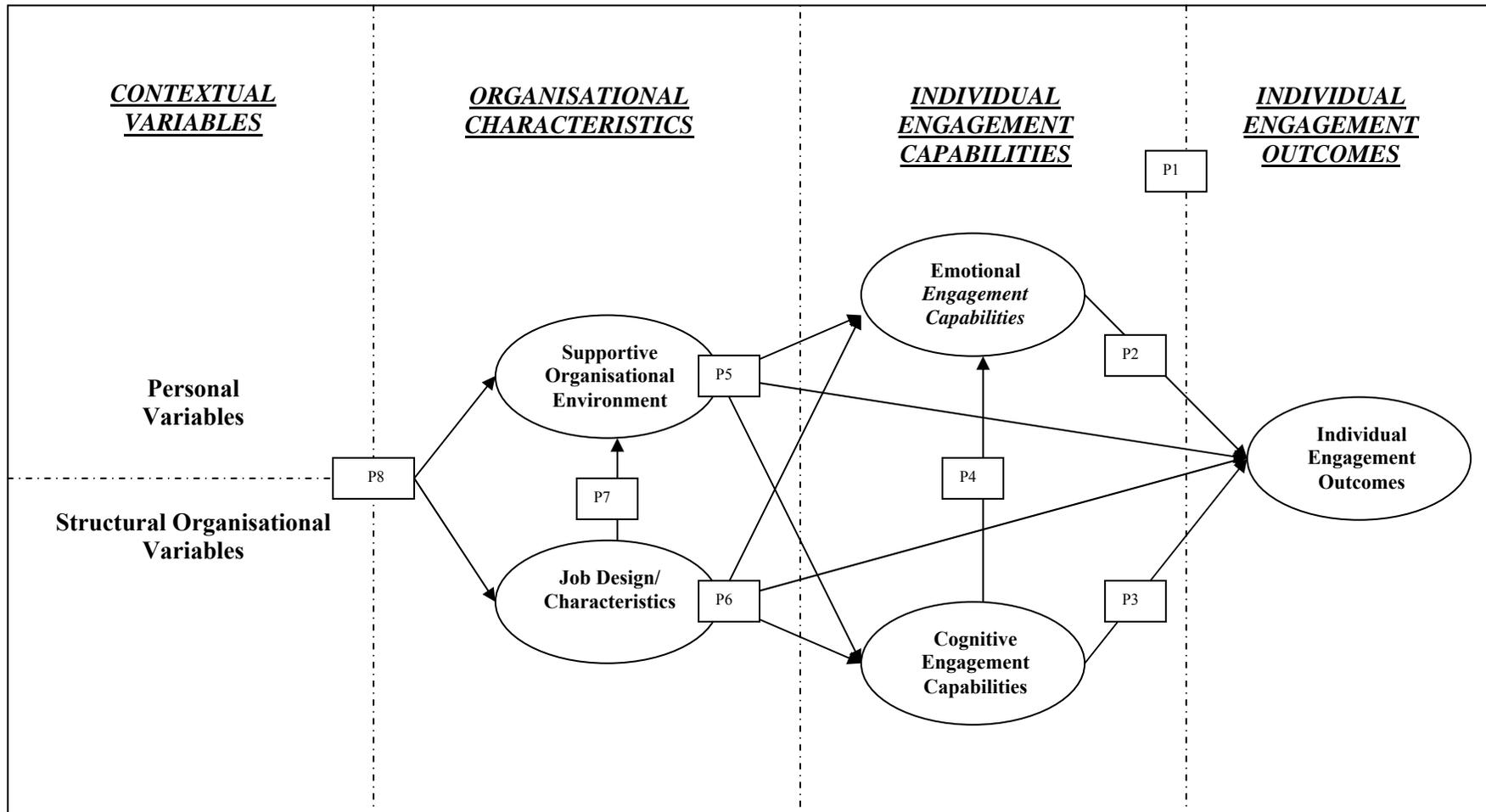
Figure 4-5 Conceptual Framework with Propositions

4.2. Refining Conceptual Ideas: Individual Engagement Capabilities and Outcomes

Higher order constructs are important when it is believed that the primary factors identified have a narrow scope within the research framework. Higher order constructs are often referred to as second order constructs. These differ from first order constructs, because first order constructs deal with a single domain whereas second order constructs encapsulate a bigger domain of first order constructs. Engagement in this study has been presented as an overarching concept, encompassing the many available engagement dimensions. A higher order construct in this thesis will provide a wider scope to the research domain and make the results of broader theoretical importance (Gorsuch 1983). Using this logic this study will test whether the engagement constructs together have the characteristics of a higher order construct.

The cognitive and emotional engagement capabilities and the individual engagement outcomes are outlined in this section for the purpose of providing propositions for each of the engagement dimensions as potential higher order constructs. This approach addresses the second research question (RQ2) for this thesis: does engagement consist of common underlying constructs that subsume many of the existing concepts of individual workplace connectedness along emotional, cognitive and outcome dimensions? In determining the potential existence of common underlying constructs, past literature is presented, bringing together the many engagement dimensions and relating it to each of the proposed engagement dimensions; capabilities and outcomes. Chapter 2 presented the consistencies and inconsistencies within the engagement literature (RQ1). This section uses those consistencies in the research on engagement to make assertions on the potential relationships between the constructs. Additionally, the empirical results of past research are consulted for assessment of the correlations between the constructs to assist in the development of the argument for higher order constructs.

The reason why this is appropriate in this study is that many of the primary factors (first order constructs) that will be explored in the following sections are correlated with each other and according to Gorsuch (1983, p. 240) 'when factors are correlated, some generalisation is possible. These areas of generalisation across the primary factors form the higher order constructs.' But whilst higher order constructs are important they are not any more important than the primary factors because they all contribute to a greater understanding of the research domain. The assessment of the relationships will be derived from the reported correlations of the primary factors (Pearson's product moment correlation coefficient, r). The correlation is the expression of the linear relationship between two variables and it allows the researcher to make

some comments about the strength of the relationship (Cohen 1988). There are no set rules that guide the identification of the strength of the relationship. In general terms Cohen (1988) states that a small effect size is r=0.10, medium is r=0.30 and large is r=0.50. These effects sizes are essentially rules of thumb and have formed conventions but these can alter according to the domain of study. Therefore the following section discusses the relations between the variables (primary factors) before moving on to a discussion on the correlations between some of these constructs to support the propositions of a higher order construct for emotional and cognitive engagement capabilities and individual engagement capabilities.

4.2.1. Emotional Engagement Capabilities As A Common Construct

An emotional engagement capability is one of the two that contribute to the overall individual engagement capabilities. In an earlier section (4.1.1.1) emotions were identified as being crucial for engagement because they help to determine the individual engagement outcomes (ISR 2004a; Kahn 1990; Schaufeli, Martinez et al. 2002). It is proposed that emotional engagement capabilities are a combination of the work relatedness variables; perceptions of meaning from the job, degree of vigour, degree of availability, psychological resources and psychological safety. This section expands the emotional engagement capabilities and positions it as a common underlying construct of each of the above mentioned constructs.

From the academic field a number of components make up measures of engagement which can be linked into an emotional engagement component. For example vigour is one sub-variable of the UWES (Schaufeli & Bakker 2004) developed to measure work engagement (as discussed in section 2.3.3.2, in Chapter 2). Schaufeli et al. (2006) noted that 'vigour is characterised by high levels of energy and mental resilience while working, the willingness to invest effort on ones work and persistent even in the face of difficulties'. Vigour is sought through questioning such as, 'at work I feel bursting with energy' (2001, In Schaufeli & Bakker 2004). Although the question asks about a physical dimension (energy) it is actually focused on asking about the feeling of that physicality. This is consistent for the other vigour questions and it is consistent with the definition of work engagement provided by Schaufeli and Bakker (2001, in Schaufeli & Bakker 2004) as an affective/ cognitive state.

In some studies the UWES has been used as a composite measure of engagement, measuring vigour, dedication and absorption or even just vigour and dedication (Coetzer & Rothmann 2007). This is because the UWES does not represent a two or three factor model but rather it supports a one factor model. In other studies using the UWES two and three factor models have been identified (Bakker, Demerouti & Schaufeli 2005; Bakker et al. 2007; Hallberg & Schaufeli 2006; Langelaan et al. 2006; Llorens et al. 2007; Schaufeli & Bakker 2004). This justifies and

supports the splitting of the measures into their underlying contribution to the engagement dimensions. Schaufeli et al. (2002) discuss engagement as being a cognitive – affective state. Many studies that stem from their work on 'work engagement' depict vigour linked and explicitly related to dedication. Due the nature of the questioning to determine vigour it is postulated that it is distinct and although clearly related to dedication, the question relates to an emotional component. Therefore vigour is treated as an independent emotional dimension in this thesis.

In addition to vigour as an emotional state, Kahn (1990) notes the importance of the psychological states in determining and contributing to psychological presence (Section 2.2.2.). He argued that meaningfulness (the values of a work goal or purpose, judged in relation to an individual's own ideals or standards May et al. 2004, p. 14), psychological safety (Feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career, Kahn 1990, p. 702) and availability (the readiness, or confidence of a person to engage in his/her work role given that individuals are engaged in many other life activities. May et al. 2004, p.17) are critical for engagement. All three of these variables when developed into measures by May et al. (2004) reflected emotional based questioning. Meaningfulness for example, is reflected in 'my job activities are personally meaningful to me' (May et al. 2004, p.36). In May et al.'s (2004, p.36) study, availability is reflected in the statement: 'I feel confident in my ability to handle competing demands at work'. These types of survey items suggest something about the feeling involved with regard to the work, job and the organisation. May et al. (2004) use these psychological states as antecedents to engagement and then measure them against an engagement questionnaire as antecedents. This thesis contends that engagement is all encompassing and degrees of meaning, availability and safety are critical in the emotional engagement capabilities. Although treated as antecedents by May et al. (2004), in this study these are treated as an integral part of the emotional engagement capabilities. This will result in enhanced individual engagement outcomes.

A further emotional dimension of the emotional capabilities to engage is what is termed the psychological resources. This construct also developed by May et al. (2004) is explicitly linked to availability. The authors proposed that a degree of psychological resources must be available in order to engage. They defined this as 'the degree to which individuals possess the resources to become available for engagement' (May et al. 2004, p. 22). There were many other measures introduced by May et al. (2004), however, it was the psychological resources variable that was found to have a strong relationship with availability (Olivier & Rothmann 2007) and a direct relationship with engagement (May et al. 2004; Olivier & Rothmann 2007). These were discussed in Chapter 2 (section 2.2.2.). As evident in Table 4-2, the psychological resources

variable was significantly correlated with each of the psychological states: meaningfulness, availability and safety (May et al. 2004; Olivier & Rothmann 2007). Due to the direct relationship with the engagement dimensions, psychological resources are used in this thesis as an emotional engagement dimension.

Also apparent in Table 4-2 is a lower correlation value for psychological safety found in the study by Olivier and Rothmann (2007) with a poor Cronbachs alpha ($\alpha = 0.41$). The lower correlational values and alpha coefficient may be due to finding in their sample that one of the items did not fit the construct of psychological safety. That item was deleted and this resulted in a two item factor, which could have had an impact on their results. The values of the correlations of each of these emotional capabilities (expect safety) suggest that there may be a common underlying construct that links each of these dimensions, representative of a higher order construct. Each of the measures demonstrate moderate to high correlations (Cohen 1988), without being too high to suggest that the measures are measuring the same domain. Arguably this indicates that the measures shared variance actually represents a higher order construct (Gorsuch 1983).

Table 4-2 Correlations of Variables of Emotional Engagement Capabilities from Previous Studies

	Meaningfulness	Availability	Safety	Resources
Meaningfulness	1	0.4	0.27	0.37
Availability	0.44	1	0.21	0.45
Safety	0.29	0.45	1	0.41
Resources	0.35	0.58	0.4	1

NOTE: Top half of the diagonal are the correlations from Olivier and Rothmann (2008), the correlations on the bottom half of the diagonal are from May et al. (2004). All correlations were significant at least at the $p<0.05$ level.

Emotional engagement extends beyond that of personal feelings about the job. It includes emotions about the work being done and the organisation that for which the employee is working and the people worked with. This would contribute to an overarching emotional engagement state. To distinguish this emotional framework from other contributions (i.e. Kahn 1990, Towers Perrin 2003; CLC 2004) it is termed here as the 'emotional engagement capabilities'. It can be described thus: as an employee one needs not only have the emotions, one needs to ensure that one has emotional capabilities to be psychologically present and engage, which is consistent with Kahn (1990). The emotional engagement capabilities are defined as the emotional abilities and potential to engage at work: the emotional empowerment to engage. Based on theoretical and empirical evidence from past research this thesis contends that the emotional engagement capabilities may act like a higher order construct based on the constructs of vigour, meaningfulness, psychological safety, psychological resources and availability. These constructs represent emotional constructs that were argued would be related

and represent a common underlying construct. The common underlying construct is visually presented in Figure 4-6. Therefore;

*Proposition Nine: **Emotional engagement capabilities** can be represented as a common underlying construct comprising the variables of vigour, meaningfulness, safety, availability and psychological resources.*
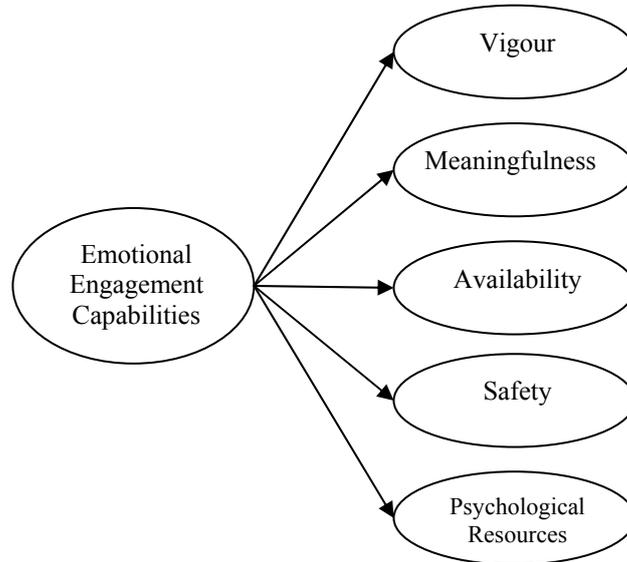
Figure 4-6 Proposed Higher Order Construct – Emotional Engagement Capabilities

4.2.2.   Cognitive Engagement Capabilities As A Common Construct

Cognitions were identified as being an important dimension for engagement (section 4.1.1.2). The cognitive engagement capabilities were identified as the thinking capabilities needed to engage the self at work. It was explained in section 4.1.1.2 that research on cognitions and engagement has been limited with the key contributors having made the link between cognitions and engagement being Kahn (1990), Schaufeli and Bakker (2001; 2004) and the ISR (2004) consultant group. This section explores the various cognitive work connectedness variables and argues that cognitive engagement capabilities have the properties of a higher order construct of these. However, due to the limited nature of comparison research, an in depth empirical assessment of the correlations cannot be provided so the potential for a common underlying construct presented here is based on theoretical arguments. It is proposed that the variables that represent cognitive engagement capabilities are: attention, absorption, dedication, job involvement and intrinsic motivation.

The measures of attention and absorption were conceptualised by Rothbard (2001) in her interpretation of role engagement (Chapter 2, section 2.3.2.1). Attention is defined as the time

spent thinking about and concentrating on the role, which is clearly a cognitive process. Absorption indicates the intensity of one's focus and mental preoccupation regarding work duties (Rothbard 2001). In her study both attention and absorption were highly correlated (r=0.56). The notion of absorption has been linked to ideas first proposed by Goffman (1961) and Kahn (1990) regarding the state of absorbing oneself in a role. Schaufeli and Bakker (2001; 2004) also conceptualised engagement as having a dimension called absorption, which is the state of being fully concentrated and engrossed in a role (UWES). Mauno et al. (2007) suggest that absorption as proposed by Schaufeli and Bakker (2001) is consistent with that provided by Rothbard (2001). This idea suggests that the definitions of absorption are all very similar, and refer to the same cognitive state. As outlined in Chapter 2 (section 2.3.2.2) absorption is often linked to the positive psychology state of 'flow' (Csikszentmihalyi 2002; Seligman & Csikszentmihalyi 2000), however, Langelaan et al. (2006) have argue that flow would act as a consequence to engagement and Schaufeli, Martinez et al. (2002) argued that absorption is more enduring as a state. Therefore to be engaged there needs to be a degree of attention and absorption to the work role, and extending the definitions provided by Rothbard (2001), to the organisation and to the job itself. It is difficult to be engaged with the role without attention given to the organisation and the work, and absorption needs thought and concentration on the task which is related to both the job and the organisation. This thesis argues that both of these cognitive states (capabilities) are related to the higher order construct of cognitive engagement capabilities.

Another cognitive related engagement aspect is dedication which is an integral part of the UWES as proposed by Schaufeli and Bakker (2001; 2004). Dedication is defined as 'being strongly involved in ones work and experiencing a sense of significance, enthusiasm, inspiration, pride and challenge' (Schaufeli et al. 2006, p. 702). There are strong relations between absorption and dedication with correlations ranging from 0.57 (Bakker et al. 2007) to 0.88 (Hallberg & Schaufeli 2006) (See also Schaufeli, Taris & van Rhenen 2008, r=0.72). There is an indication that absorption and dedication do represent a higher order construct in some studies (Coetzer & Rothmann 2007), which according to Schaufeli and Bakker (2001) is work engagement. The state of dedication has often been likened to that of job involvement (Hallberg & Schaufeli 2006; Saks 2006).

Job involvement is defined as 'the degree to which a person identifies psychologically with their work, or the importance of the work on total self image' (Lodahl & Kejner 1965, p. 24). In contrast Kanungo (1982) defines job involvement as the cognitive psychological attachment that is motivationally based and directed at meeting the needs and expectations of the individual. Hallberg and Schaufeli (2006) have statistically differentiated job involvement from

a composite measure of engagement using the UWES. (The relationship between these constructs was detailed in Chapter 2, section 2.3.2.2.). Although clearly related they found significant differences between job involvement and engagement. In their study a one factor model of engagement (vigour, dedication, and absorption) was used because the inter-correlations between the constructs were extremely high. For this reason it is argued here that dedication and vigour were measuring the same construct, which may have resulted in the significant relationship with the concept of job involvement. No study has provided correlations with each of the UWES subscales and job involvement. An article by Newman and Harrison (2008) related the questions from the dedication scale from the UWES to organisational commitment, job involvement, positive affect and job satisfaction. They reported that the measures of the UWES theoretically are not distinct, even though Hallberg and Schaufeli (2006) have empirically made this distinction. Given these considerations and the relationship with the UWES, this thesis argues that job involvement is an important engagement consideration particularly because of the impact on the overall cognitive assessment of the work and experienced significance in addition to dedication, absorption and attention. Another cognitive work connectedness variable is intrinsic motivation and this has been explicitly linked within the literature with job involvement.

A meta-analysis by Brown (1996) found that a person who is involved in a job will find it motivating and sufficiently challenging. This highlights the link between job involvement and motivation. Harter et al. (2002) state that a truly engaged person at work would experience a sense of motivation to work harder and put in the extra effort (see also Harley, Lee & Robinson 2005: Chapter Two, section 2.3.3.1.) It seems important to consider motivation in a new model of engagement. Motivation has also been considered by researchers focusing on the job demands – resources (JD-R) model, where job resources are the motivating factor for engagement as measured by the UWES (Bakker & Demerouti 2008; Llorens et al. 2007; Mauno et al. 2007). This thesis does not use the JD-R as outlined in Chapter 2. Instead, the thesis places emphasis on the role of motivation as one of the cognitive capabilities required to be engaged. It should be noted that engagement research relating engagement to motivation has yet to measure the relationships so thus a full understanding of the relationship is unknown.

Work motivation is seen as developing from the interaction of individuals with their environment and is impacted on by dispositional attributes, values, needs and contextual dimensions (Latham & Pinder 2005). Cognitions are inherent within motivation; judgement and thinking are based on the evaluation of impacting attributes, which will indicate the work motivation. According to Pinder (1998, p. 11) 'work motivation is a set of energetic forces that originate both within as well as beyond and individual's being, to initiate work-related

behaviour and to determine its form, direction, intensity, and duration.' This indicates a clear relationship to the other cognitive engagement dimensions: absorption, attention, job involvement and dedication. It is envisaged that motivation, and more specifically intrinsic motivation will form part of the common underlying construct for cognition. Intrinsic motivation is emphasised in the internal value that employees receive from the job and the work, using particular actions for their own sake and not for tangible rewards (Thomas & Velthouse 1990). This leads to and encompasses the pleasure, excitement, and interest derived from the internal value received. An engaged person would be intrinsically motivated by the task (Thomas & Velthouse 1990) and the work (Latham & Pinder 2005). In addition a person will be intrinsically motivated by the core job dimensions (Hackman & Oldham 1980).

Cognitive dimensions in the engagement framework help to identify the thinking that is involved in engagement, as well as the thought capabilities that are needed by employees to engage. The constructs that were presented in this section were cognitive constructs thought to encapsulate the cognitive engagement capabilities. On an individual level, these are the thinking capabilities that employees needs to engage, and this incorporates ideas such as absorption, attention, dedication, job involvement and intrinsic motivation. More specifically, cognitive engagement capabilities have the properties representative of a higher order latent construct of these related cognitive items. For the purpose of this thesis this dimension in the framework will be referred to as cognitive engagement capabilities and it will be defined in terms of the thinking capabilities involved for an employee to engage to the organisation, the work and co-workers. It can be described as: having the cognitive capabilities to be psychologically present to engage which incorporates the work connectedness constructs of absorption, attention, dedication, job involvement and intrinsic motivation. This proposed common construct is pictorially represented in Figure 4-7. This leads to the next proposition;

*Proposition Ten: **Cognitive engagement capabilities** are a common underlying construct comprising the constructs of attention, absorption, dedication, job involvement and intrinsic motivation.*
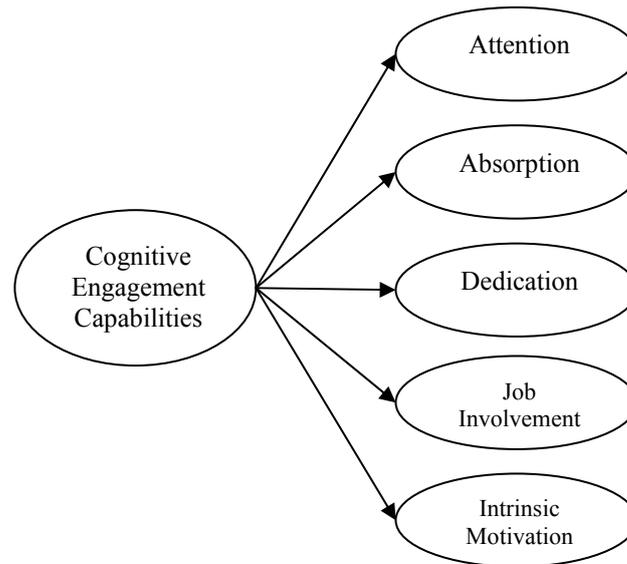
Figure 4-7 Proposed Higher Order Construct – Cognitive Engagement Capabilities

4.2.3.   Individual Engagement Outcomes As A Common Construct

The earlier sections of this chapter on the role of emotions and cognitions have all led to specific outcomes or responses and these were termed the individual engagement outcomes (section 4.1). The propositions take each of the individual engagement capabilities and the organisational characteristics to these engagement outcomes (section 4.1). In other words, when fully engaged, employees need to employ themselves physically, as well as emotionally and cognitively. An example provided by Kahn (1990, p. 701) from his case study where a participant 'employed himself physically, darting about checking gear and leading the dive.' This demonstrates and reinforces the link between being physically and behaviourally engaged. In addition the consultants also highlight a rational or behaviour engagement aspect (BSI-Consulting 2007; CLC 2004; Towers Perrin 2003). The transition and connecting from physical, behavioural and rational engagement dimensions was also discussed in section 4.1. This section explores the contention that each of the potential individual engagement outcomes together may represent have a common underlying construct. This will include a discussion on the constructs: affective commitment, job satisfaction, intention to quit, disengagement and exhaustion.

Many researchers consider organisational commitment an important aspect of engagement (Australian Public Service Commission 2006; CLC 2004; Hallberg & Schaufeli 2006; Macey & Schneider 2008; Robinson et al. 2004). This is often because affective commitment and engagement are used interchangeably in the literature and many of the contributions particularly that of the consultants support engagement as the degree of affective attachment to the

organisation (See sections 2.3.3. & 2.4.1.). Although many researchers identify its importance for engagement, there is still a lack of consensus regarding what role affective organisational commitment plays in engagement. For example Macey and Schneider (2008) propose that organisational commitment forms part of their state engagement and some consultants view commitment as part of the outcome of being engaged (BSI-Consulting 2007; CLC 2004; Robinson et al. 2004). As discussed in Chapter 2 (2.4.2), these terms are used synonymously; it is not the intention of this research to ignore this overwhelming contribution. This thesis contends that affective commitment is an important dimension to the individual engagement outcomes; however, it is believed that it does not explain engagement fully. The definitions encapsulating commitment are broad.

Porter et al. (1974) identified three components of commitment: employees' acceptance of the organisation's values and goals; their desire to exert extra effort for the benefit of the organisation; and their desire to remain with the organisation. This definition extends beyond loyalty to the organisation (which is a common variation made by other researchers). Reliance on organisational loyalty has been described as being a parsimonious or simplistic way of referring to commitment (Price & Mueller 1981; 1986). Instead, commitment has been described as encompassing 'an active relationship with the organisation such that individuals are willing to give something of themselves in order to contribute to the organisation's wellbeing' (Mowday et al. 1979, p. 226). Consequently, the main body of commitment research uses Porter et al.'s (1974) definition or variations of this definition (Benson 1988; Bishop & Dow Scott 1996; Deery & Iverson 1998; Mowday et al.1979; Price & Mueller 1986). Allen and Meyer's (1990) conceptualisation of commitment includes the concepts of affective commitment, continuance and normative commitment. They describe affective commitment as 'an affective or emotional attachment to the organisation such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organisation' (Allen & Meyer 1990, p.2). Affective commitment is seen as going beyond the call of duty, putting in the extra effort on behalf of the organisation. This is more closely related to Kahn's (1990) conceptualisation of engagement (section 2.2)

Continuance commitment is the concept of staying with the organisation based upon the cost of not staying (Allen & Meyer 1990). Employees with continuance commitment see themselves as being long term members of the organisation. Normative commitment is seen as the feelings of loyalty and obligation to remain with the organisation. Clearly, the concepts of continuance and normative commitment are related given that those with greater loyalty will have the intention to remain with the organisation (Mueller, Wallace & Price 1992). Whilst there is a separate debate between typical psychological/ management/ sociological definitions with the more

economic based definition that focuses on the costs of staying with the organisation, the transactional relationship, this thesis limits itself to the idea of affective commitment. Measuring only affective commitment is common practice within the international research literature (Luthans et al. 2008; Reid et al. 2008). Engagement has been related to the affective attachment that employees have with their organisations (Macey & Schneider 2008; Saks 2006).

Another construct with outcome potential for engagement is job satisfaction. There is research evidence to suggest that commitment and job satisfaction are related concepts. Job satisfaction is the degree to which an employee is satisfied with the job (Brayfield & Rothe 1951). There is some research that has made the link between commitment and satisfaction and the correlations outlined in Table 4-3 demonstrate this association. According to an analysis of the causal relationship between the two by Currivan (1999), the relationship is purely spurious with no direct association. This is contrary to many other researchers who have tested the factors together as mediators (Lok & Crawford 2001) or together as dependant variables (Reid et al. 2008). The correlations are quiet high and they do suggest, even considering the various measures of commitment (affective and overall commitment) and job satisfaction, that there is a rather large effect between them (Cohen 1988). The largest of the effect sizes was between measures of affective commitment (Mowday et al. 1979) also called attitudinal commitment and overall job satisfaction. The reason that various measures of commitment and job satisfaction are being reported is due to the focus on correlational relationships only and to add further support to the relationship due to the breadth of measures for each. In a study by Allen and Meyer (1990) each of the components of commitment were measured, as well as the overall commitment measures. The authors found a strong correlation between the measure of affective commitment and the organisational commitment scale developed by Porter and et al. (1974) (r=0.83, p<0.05). The relationship between the two scales is quite strong and indicates a strong shared variance between the two (r^2= 0.69). This provides further evidence of a strong relationship between affective commitment and job satisfaction and firmly establishes affective commitment as a distinct measure. More recently this relationship was reinforced by Luthans et al. (2008) with correlations ranging from 0.53- 0.67.

For Macey and Schneider (2008), in addition to their conceptualisation of state engagement incorporating commitment, it also incorporates job satisfaction which they highlight as an important dimension of engagement. They articulate that engagement should encompass affective satisfaction dimensions, incorporating enthusiasm, energy and an overall positive affective state to the job, drawing on a comparison to the UWES and the definition incorporating an affective / cognitive state (Schaufeli, Salanova et al. 2002). Essentially like

affective commitment, satisfaction is an attitude, but satisfaction reflects the feelings (affective state) about the job. This is consistent with the early ideas on satisfaction (Brayfield & Rothe 1951; Smith, Kendall & Hulin 1969). In addition, Harter et al. (2002; Harter et al. 2003) identified that engagement is essentially being satisfied and involved in the job. This has been measured by the Gallup Workplace Audit (GWA) (Buckingham & Coffman 1999) (see section 2.3.3.1). The GWA measure essentially identifies the 'conditions under which people work' for them to be satisfied but not the actual engagement state (or satisfaction) as a totality (Macey and Schneider 2008, p.7).

Other consultant groups have also made the link between engagement and job satisfaction (Seijts & Crim 2006; Towers Perrin 2003). The links from previous research identify job satisfaction as an important engagement outcome. So whilst affective commitment and job satisfaction are related to emotional dimensions they are dealt with in this thesis as outcome variables as is common practice within the literature (Luthans et al. Gaiduk, Gaiduk & Fields 2009; 2008; Reid et al. 2008). In summary, when engaged an employee is both satisfied and affectively committed. Job satisfaction and affective commitment are both important considerations for engagement, especially for the individual engagement outcomes. To be engaged it is considered an important dimension have an affective attachment with the organisation as well as be satisfied with the job and this is impacted by the cognitive and emotional engagement capabilities.

Table 4-3 Correlations of Variables of Individual Engagement Capabilities from Previous Studies

	Affective Commitment	Job Satisfaction	Disengagement	Exhaustion	Intention to Quit
Affective Commitment	1	0.55a 0.68b			
Job Satisfaction	0.65c 0.79d	1			
Disengagement	-	-	1		
Exhaustion	0.36 (-0.21)e	-0.22f	0.44g	1	
Intention to Quit	0.67h -0.60i	-0.66j	-	0.23k	1

NOTE: a= Job satisfaction scale (Price & Mueller 1990) and overall commitment measure (OCQ) Brooke et al. (1988); b= Deery et al. (1994).

c= This correlation is an overall weighted correlation. Other correlation ranges 0.56-0.65 (Meyer et al. 2002); 0.51 (Sims & Kroeck 1994); d= (Reid et al. 2008)

e= Emotional Exhaustion (MBI-GI) Llorens et al. (2006).

f= Measure of Emotional Exhaustion (MBI-GI) and job satisfaction (Schaufeli et al. 2008)

g= Demerouti et al. (2003). Demerouti et al. (2001) r=0.39; Halbesleben & Demerouti (2005) range 0.16-0.34; Fritz & Sonnentag (2006) range 0.24-0.4.

h=This is a positive association because it is a measure of Intention to Stay with Organisation (Ko, Price & Mueller 1997); i= (Iverson & Buttigieg 1999).

j= Total job satisfaction (MSQ) (Sims & Kroeck 1994)

k= This correlation reflects turnover intentions and emotional exhaustion (MBS-GI) Schaufeli & Bakker (2004). Janessen et al. (1999) r=0.17

The other constructs that are considered an important individual engagement outcome are intention to quit (intention to remain, turnover intentions) and burnout. Intention to quit has been linked to both commitment (affective) and job satisfaction as a possible outcome of the two (Iverson & Buttigieg 1999; Ko, Price & Mueller 1997; Tett & Meyer 1993). In the organisational attachment literature quit intentions is placed at the opposite end of the continuum to affective commitment (Casper & Harris 2008; Gaiduk, Gaiduk & Fields 2009; Mano-Negrin 1998; Riketta & Dick 2005). As noted in Table 4-3 intention to quit has a strong relationship with both affective commitment and satisfaction (correlational range – 0.6-0.68 both positive and negative). According to Saks (2006) the consequences of what he terms job and organisational engagements are commitment, satisfaction and intention to leave. However, his measures do not necessarily reflect each of the engagement dimensions as proposed in this thesis. Although, the linkages between each of these factors is supported (Casper & Harris 2008; Lok & Crawford 2001; Sims & Kroeck 1994). As with commitment and satisfaction there are various measures and conceptual names for intention to quit including turnover intentions and intention to stay as positive approaches to the same idea. These can be measured using items such as: 'I have an intention to remain with the organisation' which would be opposite to asking an employee's 'intention to quit', however, they are essentially the same idea, just the reverse scored. The definition of 'intention to quit' is the prospect of the continuance of the job into the future (Saks 2006). In the engagement arena, there are not many studies that link engagement with an intention to quit the organisation or an intention to remain.

A strong correlation between emotional exhaustion and intention to leave the organisation is evident in Table 4-3 (Janssen, De Jonge & Bakker 1999; Schaufeli & Bakker 2004). Emotional exhaustion is measured by the Maslach Burnout Inventory (MBI-GI) (Maslach 1982) which is a well developed burnout measure (section 2.2.3.2). Intention to quit the organisation as an individual engagement outcome is important because if employees were truly engaged, with the appropriate emotional and cognitive engagement capabilities then there should be no intention to leave the organisation because as they would be working to their 'best' and getting what they need to be psychologically present (see section 4.1.1.)

The other individual engagement outcome that is considered here to be important is burnout which was discussed in Chapter 2 (section 2.2.3.2). In many studies engagement and burnout have been explicitly linked (Bosman, Rothmann & Buitendach 2005; Leiter & Maslach 2000; Maslach et al. 2001; Schaufeli, Martinez et al. 2002; Timms, Graham & Cottrell 2007). It has been argued that engagement is the exact anti-pole to burnout; however, this argument no longer is supported within the literature (Schaufeli et al. 2002). Maslach (1982; Maslach & Leiter 1997) suggests that burnout incorporates exhaustion, cynicism and lack of professional

efficacy. According to the measure MBI-GI which captures these concepts, if employees are not burnt out then they are engaged, so low scores on this measure indicates engagement. Schaufeli and Bakker (2001 cited in Schaufeli & Bakker 2004) argue that the ideas are linked but not the exact opposites. Another burnout conceptualisation that has more recently emerged is that proposed by Demerouti et al. (2001) where burnout comprises a measure of exhaustion and disengagement (Oldenberg Burnout Inventory, OLBI). A multi-trait multi-method analysis of both measures (MBI-GI and OLBI) has found that the measures of exhaustion both load on the same dimension, the cynicism and disengagement measures also load on the same dimension (Demerouti et al. 2003; Halbesleben & Demerouti 2005). Both conceptualisations have an exhaustion component and the difference between them exists in the emotional-only focus of the MBI-GI compared with exhaustion in the OLBI measure which covered emotional, cognitive and physical exhaustion (Demerouti et al. 2003; Halbesleben & Demerouti 2005). The breadth of the OLBI is thus much broader and captures a greater portion of burnout dimensions compared to the MBI-GI. And because the OLD-I captures a large portion of the burnout dimensions, this can also be suggested as not being the anti-pole of engagement (Schaufeli et al. 2002).

As part of the OLBI, disengagement is the 'distancing [of] oneself from one's work and experiencing negative attitudes to the work object, work content , or one's work in general' (Demerouti et al. 2003, p. 14). The disengagement questions encompass the willingness to remain within the organisation and the identification with the work, job and organisation (Bakker et al. 2004). This makes an explicit link between the factor of disengagement and intention to quit (remain) the organisation that has not previously been explored. Exhaustion (emotional MBI-GI) has been shown to be related to turnover intentions. However, as presented in Table 4-3 there is not a large effect size here, and with the consideration of a broader exhaustion conceptualisation (emotional, cognitive and physical) this effect size maybe increased. For example an employee's intention to quit the organisation may be higher if he or she is exhausted in all three areas. The definition of exhaustion according to the OLBI is the emotional, cognitive and physical strain incurred from the prolonged intensity of the job (Demerouti et al. 2003). The effect size between disengagement and exhaustion is considered medium to large ($r=0.24$-0.44) (Cohen 1988). Although these constructs together are considered as a combined measure of burnout, they are considered as individual dimensions in this thesis because the effect size is not too high. There is significance for both of these dimensions in an engagement study because if burnout is the anti-pole of engagement, then disengagement and exhaustion become important dimensions. If employees have the individual engagement capabilities to be able to be engaged and be psychologically present then they will have low scores on the OLBI dimensions.

Many of the constructs identified as part of the individual engagement outcomes, have been tested as antecedents and outcomes of each other. For example the impact of job satisfaction on commitment (Elliott & Hall 1994), or commitment on satisfaction (Lok & Crawford 2001; Yoon & Thye 2002), and both job satisfaction and commitment on intention to quit the organisation (Allen & Meyer 1990; Iverson & Buttigieg 1999; Sims & Kroeck 1994). Within this thesis the sequential nature of these variables with the other is not the focus and as such the thesis is suggesting that there is a relationship between each of the constructs that subsumes the higher order construct of individual engagement outcomes.

The other two engagement constructs, disengagement and exhaustion, are thought to share variance with the other variables. But they have limited associations in the research to determine their relationship with the other primary factors. However, the purpose of the individual engagement outcomes is not to determine the temporal relations or the causal impacts between these primary factors but to link them to each other via the shared variance underlying all of them: individual engagement outcomes. It is suggested here that the constructs when measured at the same time, although they may be causal in their effects on each other, are related to a higher order construct. For example, research has shown the causal link between commitment on intention to quit the organisation (Allen & Meyer 1990; Iverson & Buttigieg 1999; Sims & Kroeck 1994). This thesis argues that a sense of affective commitment as well as an intention to quit will occur simultaneously according to the presence of a common underlying construct that links the two together.

This thesis is focused on the individual engagement outcomes as an outcome of the individual emotional and cognitive engagement capabilities. It is proposed that the individual engagement outcomes will have the properties of a higher order construct as represented by the individual responses of affective commitment, job satisfaction, intention to quit, exhaustion and disengagement. This proposed common underlying construct is presented in Figure 4-8. This leads to the next proposition;

*Proposition Eleven: The **individual engagement outcomes** are a common underlying construct comprising the constructs of affective commitment, job satisfaction, intention to quit, exhaustion and disengagement.*
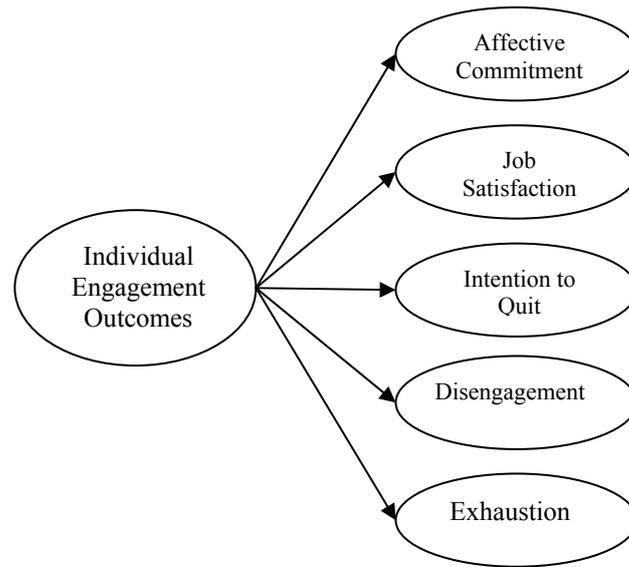
Figure 4-8 Proposed Higher Order Construct – Individual Engagement Outcomes

4.2.4. Summary Of The Common Underlying Relations

In bringing understanding to the first aim of the research, this section focused on bringing some clarity and a greater understanding to the current engagement contributions, through addressing the second research question (RQ2) of the thesis. RQ2 focused on the existence of potential common underlying constructs which subsume the engagement contribution. This thesis has brought together the many work connectedness variables related to engagement and organised them as a combination of emotions and cognitions, which form the individual engagement capabilities and the engagement outcomes. Under the headings of emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes, theoretical and empirical arguments were proposed to support each of these dimensions having the characteristics representative of higher order constructs. The emotional engagement capabilities were proposed to represent the constructs of meaningfulness, availability, safety, vigour and psychological resources. The cognitive engagement resources were argued to represent absorption, attention, dedication, job involvement and intrinsic motivation. And finally, the individual engagement outcomes were argued to represent the constructs of affective commitment, job satisfaction, intention to quit, disengagement and exhaustion.

4.3. Chapter 4 Summary

The engagement research domain is replete with a variety of definitions and conceptualisations. Most of these can be traced back to Kahn's (1990) underlying conceptualisation of engagement with dimensions representing emotional, cognitive and physical engagements (Chapter 2, Section 2.4.2). This idea has been adapted to present a new framework of engagement for this

research thesis. The initial parts of this chapter developed eight research propositions for engagement and identified the many pathways for engagement in Business Academics. These propositions (P1-8) address research questions 3 & 4. The engagement framework also proposed two organisational characteristics, namely a supportive organisational environment and the job characteristics that were each proposed to act as antecedents to each of the engagement dimensions (capabilities and outcomes). There was strong literature support for a supportive organisational environment and job characteristics as antecedents and these were also identified as crucial in academia. In addition, the present literature on these dimensions has largely ignored the directional relationship between the two, it was propositioned that these were related to each other.

The contextual variables were then introduced, incorporating personal variables and structural organisational variables. The personal variables were identified as the variables that academics have no ability to change (age and gender). The structural organisational variables were identified as those that academics have some ability to influence or change (university group and lecturer classification level). Each of the contextual variables was considered important to control for variation on the antecedents to engagement.

Propositions were also developed to indicate the presence of common underlying constructs. These propositions aimed to address the second research question for this thesis. Each of the engagement dimensions was placed in a theoretical and empirical argument to justify their inclusion as relating to higher order (common) constructs. This resulted in a set of higher order constructs including emotional engagement capabilities (meaningfulness, psychological availability, psychological safety, psychological resources and vigour); cognitive engagement capabilities (attention, absorption, dedication, job involvement, and intrinsic motivation) and individual engagement outcomes (commitment, job satisfaction, intention to quit, disengagement and exhaustion).

Overall there are eleven propositions that were developed for this research. The thesis suggests that by utilizing the framework presented (Figure 4-5) many of the current engagement contributions can be investigated which will provide greater clarity in the area of engagement. This provides some scope to first aim of this study to bring clarity to the current engagement domain.

In the next chapter, the conceptual framework is discussed in light of hypothesis development and research design. The next chapter also details the methods used to explore engagement based upon the conceptual framework.

Chapter 5 :   HYPOTHESIS   DEVELOPMENT   AND RESEARCH DESIGN

The previous chapters presented engagement as an area of investigation that has been subjected to criticism and research from three key disciplines. The aim of this thesis is to provide a more holistic understanding of engagement that encompasses the many areas and disciplines applied to the context of Higher Education business academics. The conceptual framework (Chapter 4) specified the impacts of the organisational characteristics (perception of supportive organisation and job characteristics) on the engagement dimensions. Each of the engagement dimensions was presented as a potential higher order construct, where it was theoretically and empirically argued that the various pre-established variables together will have the properties representative of a higher order construct. Eleven propositions were developed and these will be developed into specific testable hypotheses in this chapter.

This chapter begins with the justification of the design adopted and an analysis of the measures identified to capture each of the areas within the conceptual framework. Hypothesis development on the engagement dimensions as having common underlying constructs (characteristics of higher order constructs) and the specific relationships within the engagement model is then introduced based on the measures previously defined. The chapter then develops the research design needed to test the developed hypotheses and details the sample, questionnaire development and the statistical techniques used. The statistics are presented in a step through process, detailing each specific stage of the complex design.

5.1. Justification of the Research Design

Research design, according to Creswell and Plano Clark (2007), is the plan of action which links the underpinning assumptions and frameworks in the methods and techniques used. The research design is important because it provides the underlying structure for the integration of all the components of the study and also to ensure that the outcomes of the research are valid (Anderson Dannels 2010). Clarification of the key terms is essential to understanding the various parts of this chapter. In general, the term *methodology* refers to the philosophical assumptions and frameworks that guide the research whereas the term *method* refers to the actual techniques that have been used (Creswell & Plano Clark 2007). The methodology adopted for this research is based upon a post-positivism philosophical assumption. Positivism uses an objective research approach that usually forms a quantitative research method, as this research does. The quantitative method is evident through the use of a questionnaire that as outlined in the previous chapter is the measure of a variety of different constructs.

The engagement literature demonstrates that the phenomenon has been explored through a variety of techniques. Kahn (1990) in his pioneering work on engagement used a qualitative ethnography case study approach to understanding engagement. The use of questionnaires, surveys and scales of engagement are now common practice in the investigation of engagement and this is evident in the different contributions to the area (Buckingham & Coffman 1999; May et al. 2004; Rothbard 2001; Saks 2006; Schaufeli, Salanova et al. 2002; Towers Perrin 2003). A questionnaire is used in this study utilising the various work connectedness constructs in an effort to bring a greater, all encompassing understanding to engagement. The conceptual framework for this thesis presents a unique approach to the study of engagement in a way that the many research contributions to engagement research so far, have not done.

5.2. The Measures

The individual engagement capabilities and outcomes were identified as potential higher order constructs of groupings of primary variables (pre-established constructs). In this section each of the measures used in this research will be identified and justified in terms of their reliability and validity for the use in this thesis. In total the questionnaire used 17 pre-established measures and their summary definitions are presented in Table 5-2. All the measures used in this study were measured on a seven point Likert scale (1=strongly disagree to 7=strongly agree, with 4 as the neutral) unless otherwise stated. The criteria for the selection of the measures used in this study are: the measure needs to be established within the extant literature; it needs to be accessible; not covered by copyright restrictions; in a format conductive to the presentation of the questionnaire.

For consistency, the each of the measures will be presented as they are tested, under their respective common underlying construct. Table 5-1 summarises the reliability of the measures derived from previous studies to support their case for inclusion. Table 5-2 presents the measurement summary statistics for the measures as found in this study. The emotional engagement capabilities are presented first, followed by the cognitive engagement capabilities and the individual engagement outcomes.

5.2.1. Measures of Emotional Engagement Capabilities

It was proposed in Chapter 4 that the emotional engagement capabilities are the emotional capabilities needed to engage the self at work (Proposition 9, section 4.2.1.). It was argued that the emotional engagement capabilities incorporated the constructs meaningfulness, psychological safety, availability, vigour and psychological resources. This section explores each of the measures of these constructs, and presents their viability as a measure of the construct.

Table 5-1 Summary of the Measures used in the Questionnaire

MEASURE	DEFINITION	ALPHA
EMOTIONAL ENGAGEMENT CAPABILITIES		
Meaningfulness	The values of a work goal or purpose, judged in relation to an individual's own ideals or standards. (May et al. 2004, p.14)	0.90 (May et al. 2004)
Availability	Belief that an individual has the physical, emotional and cognitive capabilities to engage the self at work, Kahn 1990. "the readiness, or confidence of a person to engage in his/her work role given that individuals are engaged in many other life activities (May et al. 2004, p.17)	0.85 (May et al. 2004)
Psychological Safety	Feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career.(Kahn 1990, p. 708)	0.71 (May et al. 2004)
Psychological Resources	The degree to which individuals possess the capabilities to become available for engagement (May et al. 2004, p. 22)	0.91 (May et al. 2004)
Vigour	Characterised by high levels of energy and mental resilience while working, the willingness to invest effort on ones work and persistent even in the face of difficulties (Schaufeli et al. 2006, p. 702).	Sample 1 0.68, Sample 2 0.81 (Schaufeli. Salanova et al. 2002)
COGNITIVE ENGAGEMENT CAPABILITIES		
Intrinsic Motivation	Degree to which a job holder is motivated to perform well because of some subjective rewards or feelings that he expects to receive or experience as a result if performing well. Lawler and Hall 1970	0.90 (Kim & Jogaratnam 2010)
Absorption	Characterised by being fully concentrated and happily engrossed in one's work (Schaufeli et al. 2006, p. 702) associated with the intensity of one's focus on a role (Rothbard 2001, p. 665)	0.75 (Schaufeli. Martinez et al. 2002)
Attention	Duration of focus and mental preoccupation with work. Time spent thinking about and concentrating on role (Rothbard 2001, p. 665).	0.78 (Rothbard 2001)
Job Involvement	The degree to which a person identifies psychologically with their work, or the importance of the work on total self image (Lodahl & Kejner 1965, p. 24)	0.87 (Frone, Russell & Cooper 1995)
Dedication	Being strongly involved in ones work and experiencing a sense of significance, enthusiasm, inspiration, pride and challenge (Schaufeli et al. 2006, p. 702).	Sample 1 =0.91 Sample 2 =0.91 (Schaufeli. Salanova et al. 2002)
INDIVIDUAL ENGAGEMENT OUTCOMES		
Disengagement	Distancing oneself from one's work and experiencing negative attitudes to the work object, work content , or one's work in general (Demerouti et al. 2003).	0.83 (Demerouti et al. 2003) 0.76-0.83 (Haslbesleben & Demerouti 2005)
Exhaustion	The emotional, cognitive and physical strain incurred from the prolonged intensity of the job (Demerouti et al. 2003).	0.82 (Demerouti et al. 2003) 0.74-0.87 (Haslbesleben & Demerouti 2005)
Affective Commitment	The degree of an employee's emotional attachment to, identification and involvement with the organisation. (Allen & Meyer 1990)	0.88 (Chang & Chelladurai 2003) 0.79 (Iverson & Buttigied 1999) 0.87(Allen & Meyer 1990)
Job Satisfaction	Degree of Satisfaction that one has with their job (Brayfield & Rothe 1951)	0.88, 0.91 (Price & Mueller 1986)
Intention to Quit	Prospects of the continuance of the job into the future	0.75 (Colarelli 1984) 0.86 (Saks 2006)
ORGANISATIONAL CHARACTERISTICS FOR ENGAGEMENT		
Perceived Organisational Support	Perception of support from the organisation to the employee. (Eisenberger et al. 1986)	0.97 (Eisenberger et al. 1990) 0.89 (Saks 2006)
Job Characteristics	Job Diagnostic Survey. The characteristic of the job; autonomy, task identity, task significance, skill variety and feedback from the job. (Hackman & Oldham 1975, 1980)	0.79 (Saks 2006)

5.2.1.1. Meaningfulness, Availability, Psychological Safety and Resources

The measures for availability, psychological safety and psychological resources were developed by May et al. (2004) based on Kahn's (1990; 1992) engagement conceptualisation. The measure for meaningfulness was based on Kahn's conceptualisation but the questions were drawn from Spreitzer (1995) and May (2003). Meaningfulness, availability and safety were tested by May et al. (2004) for their mediating effects on engagement. But as argued in Chapter 4 these psychological conditions are believed to be part of an all encompassing engagement (section 4.2.1). Previous research has demonstrated that the measures are reliable (within the limits according to Cronbach 1951, see Table 5-1). The reliability and subsequent validity of these measures was reinforced in a more recent study by Olivier and Rothmann (2007). In their study the data were derived from an oil company located in Africa which provided a unique context for engagement research. However, there were concerns with the reliability of the measure of psychological safety and a question was deleted (leaving two items to measure safety), nonetheless it was still included as a measure in their research and thus included in this thesis. The African sample may have impacted the reliability of psychological safety. Psychological resources was originally conceptualised as an antecedent to the psychological conditions (May et al. 2004). However, both Olivier and Rothmann (2007) and May et al. 2004 demonstrated a strong directional relationship with availability (the full argument for the inclusion of this variable was outlined in Chapter 4, section 4.2.1). There are limited available measures that capture these psychological conditions in one research setting as most other research deals specifically with the individual variables (see Chalofsky 2003, meaningfulness; Edmondson 1999, psychological safety in teams). The measures that have been used have been found to adequately represent the constructs; they were easily accessible and had been developed based on the engagement work of Kahn (1990). The Cronbach alpha for this study is presented in Table 5-2.

5.2.1.2. Utrecht Work Engagement Scale (UWES) – Vigour

The measures of vigour, dedication and absorption all form part of the overall 'Utrecht Work Engagement Scale (UWES) developed by Schauflei and Bakker (2001). The Vigour items used in this study were taken for the long version of the UWES and the items were measured on a 7 point frequency scale (1 = never- 7 = always). A rationale for the use of the longer version is provided by Hallberg and Schaufeli (2006) who identified that the short version of the UWES represents only one underlying dimension: work engagement. The long version of the scale has been found to represent the three distinction dimensions: vigour, absorption and dedication (Schaufeli et al. 2006; Schaufeli, Martinez et al. 2002; Schaufeli, Salanova et al. 2002). The vigour measurement has been found to be consistently reliable and valid in many research settings (Bakker, Demerouti & Schaufeli 2005; Barkhuizen & Rothmann 2006; Hakanen,

Bakker & Demerouti 2005; Timms, Graham & Cottrell 2007). The vigour component of the UWES meets the criteria of a good scale, has been widely used and in particular, has been established in the Higher Education sector (Barkhuizen & Rothmann 2006). Vigour was measured using a total of six items.

5.2.2. Measures of Cognitive Engagement Capabilities

It was proposed in Chapter 4 (Proposition 10, section 4.2.2.) that the constructs of absorption; dedication; attention; job involvement; and intrinsic motivation would together have the properties representative of a higher order construct representing the cognitive engagement capabilities. This section explores the measures of these constructs.

5.2.2.1. Utrecht Work Engagement Scale (UWES) – Absorption and Dedication

As previously examined in section 5.2.1.2, the UWES in its long version represents three constructs: vigour, absorption and dedication. The measure of dedication provided by the UWES has been found to be reliable (Table 5-1) and valid. In an example, Hallberg and Schaufeli (2006) found that the validity of the measures of the UWES were not distinct when using the short version, suggesting a lack of discriminant validity. To counteract this concern the longer version of the dedication scale from the UWES was used here, which has long been established as reliable and valid settings (Bakker, Demerouti & Schaufeli 2005; Barkhuizen & Rothmann 2006; Hakanen, Bakker & Demerouti 2005; Timms, Graham & Cottrell 2007). Dedication was measured on a 7 point scale frequency scale (1 = never- 7 = always) addressed as five items.

Absorption is the third dimension of the UWES. Again this measure has been found to be a distinct dimension using the longer version of the UWES (Bakker, Demerouti & Schaufeli 2005; Barkhuizen & Rothmann 2006; Hakanen, Bakker & Demerouti 2005; Timms, Graham & Cottrell 2007). There are various measures of absorption (such as Rothbard's 2001) but the one developed as part of the UWES was considered the most appropriate given the common use of this engagement measure in the international research (section 2.3.2). Absorption was measured on a 7 point scale frequency scale (1 = never- 7 = always) presented as a three item scale.

5.2.2.2. Role Engagement – Attention

In the initial development of measures for role engagement Rothbard (2001) developed a set of four measures for attention each set out on a 7 point Likert scale (Strongly disagree – strongly agree). Past research has found this measure of attention to be reliable (Table 5-1) but because it has not been subject to a focused study in the research literature, the validity of the measure has

not strongly established. However, the initial tests in this sample have established the measure as having discriminant validity (Table 6-2) and as reliable (Table 5-2).

5.2.2.3. Job Involvement

Job involvement (the degree of psychological attachment to one's job) was another of the measures used in this study. It was developed by Frone et al. (1995) and is an adaption of the measure developed by Kanungo (1982). A commonly used alternative measure was developed by Lodahl and Kejner (1965). However, this latter measure has been questioned because of its lack of clarity from other concepts (Kanungo 1979). Brown (1996, p.252) suggests that the measure by Kanungo (1982) has 'less potential from contamination from extraneous conceptual content' so should be the preferred measure. Frone et al. (1995) used the 10 item measure developed by Kanungo and adapted it for their study. This adaptation has since been used by Janessen (2003) who used a shortened version where it was found to be a reliable measure ($\alpha = 0.84$) and a valid representation of the original measure. The extensive testing of this measure has reinforced the measures validity and reliability (Table 5-1). This scale meets the criteria for selection for use in this research; it is measured on a refined 5 item scale.

5.2.2.4. Intrinsic Motivation

The measure of intrinsic motivation was originally developed by Lawler and Hall (1970) as a four item measure that when entered into a factor analysis all loaded highly on one factor. Although other measures of intrinsic motivation were applicable (Warr, Cook & Wall 1979), the instrument by Lawler and Hall (1970) has consistently been found to have validity and reliability over time (Blau, GJ 1985; Cummings & Bigelow 1976; Kim & Jogaratnam 2010). Most recently, Kim and Jogaratnam (2010) using the same measure found a strong inter-item consistency with an alpha coefficient of 0.90 as presented in Table 5-1. This is similar to reliability coefficient found for this measure in this study (Table 5-2)

5.2.3. Measures of Individual Engagement Outcomes

The individual engagement outcomes were proposed to represent a common underlying construct that encompasses the constructs of affective commitment, job satisfaction, intention to quit, exhaustion and disengagement (Proposition 11, section 4.2.3.). This section identifies the measures used to capture these constructs.

5.2.3.1. Affective Commitment

The affective commitment measure was developed by Meyer and Allen (1984; Allen & Meyer 1990, 1991). Meyer and Allen's (1984) measure incorporates three types of commitment: affective, continuance and normative. As detailed in Chapter 4 the commitment focus for this study is affective commitment. This measure has been successfully used as its own measure

(without continuance and normative measures) in many studies (Jaros 2009; Luthans, Fred. et al. 2008; Meyer 2009; Reid et al. 2008; Rhoades et al. 2001). An alternative affective commitment measure is provided by Mowday et al. (1982). However, the affective commitment scale does not have the levels of validity as found in Meyer and Allens (1984) concpetualisation (Van Scooter 2000). The measure developed by Meyer and Allen (1984) is well established in the literature as reliable and valid (Table 5-1) and it met the selection criteria for inclusion in this thesis. Some of the questions were altered to reflect the specific work context for this study for example where organisation was mentioned this was replaced with university. For example, 'I would be happy to spend the rest of my career with this university'. Affective commitment was measured on a 8 item scale, 7 point Likert style scale.

5.2.3.2. *Job Satisfaction*

Job satisfaction was measured using the short version of the Brayfield and Rothe (1951) 'Index of Job Satisfaction' scale. The short version has been used and verified in research by Price and Mueller (1986) and confirmed by Brooke, Russell and Price (1988) (see Table 5-1). There are many different job satisfaction scales (for example Lawler & Hall 1970; Wanous, Reichers & Hudy 1997; Warr, Cook & Wall 1979). The most common is the 'Job Diagnostic Instrument' (JDI) (Smith, Kendall & Hulin 1969) which presents 18 adjectives and asks the participant to indicate the degree to which the adjective describes their job. In comparison, the Brayfield and Rothe (1951) questionnaire is presented in statement form with a Likert scale rating (1-7), and it met the inclusion criteria for this study. In tailoring the scale to the specific context of this research one question that referred to the 'worker' was altered in the final questionnaire to 'academic'. For example the statement now looks like 'I like my job better than the average academic does'. The short version of this question was used, which consisted of 6 items.

5.2.3.3. *Intention To Quit*

Intention to quit was measured using three items, developed by Colarelli (1984) and recently reinforced by Saks (2006). There are many measures of intention to quit and as discussed in previous chapters, variations include intention to remain (statements versed in the positive), quit intentions, turnover intentions. The measure by Colarelli (1984) was considered the best option because Saks (2006) had used this measure successfully in an engagement study (see section 4.1.2.2). In both instances this measure of Intention to Quit was found to be reliable (Table 5-1) even considering the small item numbers.

5.2.3.4. *Oldenburg Burnout Inventory – Disengagement and Exhaustion*

Burnout was measured using the 'Oldenburg Burnout Inventory (OLB-I)' developed by Demerouti et al. (2003). It measures two specific constructs: disengagement and exhaustion,

which are analysed as distinct constructs. As consistent with Demerouti et al. (2003) overall burnout was measured using 16 items on a 4 point Likert scale (1= Strongly disagree – 4 = Strongly Agree). The four selections provide a forced choice, either agree with or disagree with the statements. An English translation of the OLB-I has been developed, verified and reinforced (Halbesleben & Demerouti 2005) and established in an Australian context (Timms et al. 2007). The Cronbach alpha of both the dimensions has been shown from previous studies to be within acceptable limits (Table 5-1) accordning to Cronbach (1951) and conceptually and empirically distinct from the other (Demerourti et al. 2003). As discussed in Chapter 4, the other popular measure of burnout is the MBI-GS (Maslach 1982; Maslach & Leiter 1997). This was considered an equally acceptable measure of burnout but due to the copyright restriction was more difficult to obtain, so it was not used. Each of the scales (disengagement and exhaustion) had eight items, and within this study each was found to have inter-item consisitency (Table 5-2).

5.2.4. Measures of the Organisational Characteristics

In addition to the measures that have properties representative of higher order constructs, two organisational characteristics were proposed to have direct antecedent effects on each of the engagement dimensions (Proposition 5 & 6, section 4.1.2). The organisational characteristics were identified as the perception of organisational support and the perception of the job characteristics. This section details the measures used to capture these constructs.

5.2.4.1. Perceived Organisational Support

Organisational support is the most commonly measured using the perceived organisational support (POS) scale developed by Eisenberger et al. (1986). It is an 8 item scale measured on a 7 point Likert scale (Strongly disagree – strongly agree). This is an established measure that had been subjected to a lot of psychometric testing and meta-analyses (Eisenberger et al. 1990; Rhoades et al. 2001; Rhoades Shanock & Eisenberger 2006; Saks 2006). The validity and reliability of POS as a measure of organisational support is well established (reliability presented in Table 5-1) this is further extended in this study. Others measures of supportive environments are available; however, they lack psychometric credibility of POS.

5.2.4.2. Job Characteristics

The design of the job or the characteristics of the job are most commonly measured by the job characteristics model developed by Hackman and Oldham (1975, 1980). As outlined in Chapter 4 (section 4.1.2.2) there are many measures for job characteristics and design, however, as was described many of the other measures of design/characteristics encompass a number of different

measures together. For example, Reid et al. (2008) approach job characteristics as different measures of goal setting, role ambiguity, task variety, inter-group conflict and subjective stress. The job characteristics measure as developed by Hackman and Oldham (1975, 1980) is well established as a valid and reliable measure (Table 5-1) (Saks 2006) and the format fits within the format for the questionnaire. The questions concentrate on the core job characteristics: autonomy, task identity, skill variety, task significance, feedback from others and the job. In total there are six questions, measured on a 7 point Likert scale. Each question (statement) is presented in two ways, as consistent with the format used by Saks (2006). An example of the question is 'How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?'

5.2.5. Summary of the Measures

In summary, a total of 17 measures were used in the development of the questionnaire for this thesis. This section introduced each of the measures and justified their selection against the selection criteria, on the value of their applicability and fit within this thesis as well as their established psychometric value (presented in Table 5-1). Table 5-2 presents the summary statistics of the measures as tested on the specified sample, indicating the established reliability of the measures. The next section uses the measures to establish the testable hypotheses for this thesis.

Table 5-2 Summary Statistics of the Measures used in this Study

Measures	Mean	Standard Deviation	Variance	Alpha
Meaningfulness	5.913	.98	.954	.937
Psychological Resources	4.426	1.27	1.61	.855
Vigour	5.08	.98	.956	.837
Availability	5.614	.918	.842	.859
Absorption	4.699	1.15	1.32	.781
Attention	5.605	.967	.936	.937
Dedication	5.306	1.11	1.23	.905
Intrinsic Motivation	6.188	.881	.777	.901
Job Involvement	4.46	1.28	1.63	.894
Commitment	3.91	1.22	1.5	.846
Job Satisfaction	4.914	1.14	1.29	.877
Disengagement	2.982	.529	.28	.734
Exhaustion	2.689	.625	.389	.836
Intention to Quit	4.767	1.67	2.79	.796
Perceived Organisational Support	5.104	.948	.899	.91
Job Characteristics	3.675	1.31	1.7	.731

5.3. Hypothesis Development

In Chapter 4 a series of research propositions were developed incorporating the relationships between individual engagement capabilities and outcomes, organisational characteristics and the contextual demographic variables (section 4.1). The individual engagement capabilities and the individual engagement outcomes were presented and argued as having the properties of higher order constructs (section 4.2).

This section commences with hypothesis development for the potential higher order constructs and then moves on to hypothesis development for the various engagement relationships that were identified in the conceptual framework. The proposition development chapter presented and argued for the various relationships first and then proposed the existence of common underlying constructs that linked the various primary factors together. It is necessary to present the common underlying constructs (properties of higher order constructs) first in the hypothesis development and subsequent testing, because if the hypotheses are rejected (no existence of common underlying constructs) then the relationships argued cannot be tested and verified. A summary of the propositions and corresponding hypotheses is presented in Table 5-3.

5.3.1. Higher Order Constructs: Individual Engagement Capabilities and Individual Engagement Outcomes.

As outlined in Chapter 4, some of the work connectedness variables were argued to represent the possibility of three common underlying constructs that had the properties representative of higher order constructs. It was proposed that there would be three common constructs: emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes (section 4.2). In section 5.2 of this chapter the measures that could potentially represent these higher order constructs were introduced. This section develops testable hypothesis for each proposed common construct.

The emotional engagement capabilities were proposed (section 4.2.1) to represent the primary factors of meaningfulness, availability, psychological safety, psychological capabilities and vigour (P9). Empirically, correlations from previous research were presented (section 4.2.1) and these indicated the possible presence of a higher order (common underlying) construct (Gorsuch 1983) based on the research of others (May et al. 2004). Then using the measures of each of the variables as outlined in an earlier section of this chapter (5.2.1.1 and 5.2.1.2) leads to the hypothesis:

H1 – The measures of meaningfulness, availability, psychological safety, psychological capabilities and vigour together have shared variance which will have the properties of a higher order construct: emotional engagement capabilities.

The cognitive engagement capabilities were propositioned in the previous chapter (section 4.2.2) to have a common underlying construct of the variables (P10): job involvement, dedication, attention, absorption and intrinsic motivation. In setting the proposition for the cognitive engagement capabilities, the interrelationships between the variables were argued to have the characteristics of a higher order construct. Using the measures of each of the variables that are outlined earlier in this chapter (section 5.2.2.1, 5.2.1.2, 5.2.2.3 and 5.2.2.4) leads to the following hypothesis:

H2- The measures of attention, absorption, dedication, job involvement and intrinsic motivation together have shared variance which will have the properties of a higher order construct: cognitive engagement capabilities.

In the previous chapter (section 4.2.3) the individual engagement outcomes were proposed to be the engagement outcomes that are impacted on by the individual engagement capabilities (emotions and cognitions). It was proposed that the individual engagement outcomes encompassed the constructs of affective commitment, job satisfaction, intention to quit, disengagement and exhaustion (P11). The previous chapter also argued for the inter-relationships that exist between these constructs in their various forms and presented empirical evidence (correlations) that argued that together they would have the properties representative of a higher order construct. Using the measures of these variables as outlined (section 5.2.3.1, 5.2.3.2, 5.2.3.3 & 5.2.3.4) leads to the next hypothesis:

H3 – The measures of affective commitment, job satisfaction, intention to quit, disengagement and exhaustion together have shared variance which will have the properties of a higher order construct: individual engagement outcomes.

5.3.2. Hypotheses – Individual Engagement Capabilities and Individual Engagement Outcomes

This thesis has identified individual engagement capabilities and outcomes as possibly have the properties representative of higher order constructs, with common underlying shared variance. In the previous section these were developed into hypotheses as measured by specific variables. In Chapter 4 (section 4.1) the conceptual framework proposed the following relationships between each of these engagement dimensions (Figure 5-1) (P1).
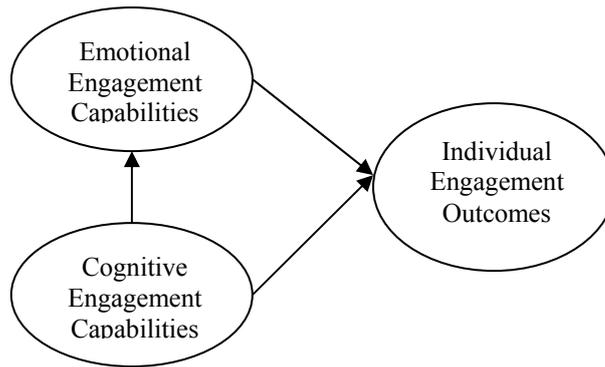
Figure 5-1 Dimensions of Engagement for Hypothesis testing

It was argued that the individual engagement capabilities (emotions and cognitions) will each impact on the individual engagement outcomes (P2 & P3). It was further argued that the cognitive engagement capabilities will impact on the emotional engagement capabilities (P4), where cognitions lead a feeling, and feelings do not always need a cognitive assessment to result in an outcome (section 4.1.1.3). Both will have subsequent impacts on the individual engagement outcomes. Where emotional and cognitive engagement capabilities are both dimensions of the individual engagement capabilities that are needed to engage. This results in the following hypothesis;

H4a: Emotional engagement capabilities will have a positive effect on the individual engagement outcomes.

H4b: Cognitive engagement capabilities will have a positive effect on the individual engagement capabilities.

H4c: Cognitive engagement capabilities will have a positive effect on the emotional engagement capabilities.

As it is hypothesised there are direct relationships between each of the engagement dimensions, especially that from the cognitive engagement capabilities to both the emotional engagement capabilities and the individual engagement outcomes. With this being the case there may be an indirect relationship between cognitive engagement capabilities and individual engagement outcomes as indirectly impact by emotional engagement capabilities (P3). Therefore;

H4d: Cognitive engagement capabilities will have an indirect effect on the individual engagement outcomes as mediated through emotional engagement capabilities.

In addition, the following hypothesis represents the entire framework as presented in Figure 5-1, where together the emotional engagement capabilities and the cognitive engagement capabilities will together impact on the outcomes, as reflected in proposition 1 (P1).

H5: The individual engagement capabilities (emotional and cognitive engagement capabilities) will have a positive effect on the individual engagement outcomes.

5.3.3. Hypotheses –The Organisational Characteristics and Engagement

The organisational characteristics of engagement have been identified as important antecedents in the engagement framework (section 4.1.2). The organisational characteristics were proposed to be both the perceptions of a supportive organisation (as measured by POS – section 5.2.4.1) and the characteristics of the job (as measured by the job characteristics model – section 5.2.4.2). The conceptual ideas on engagement posed that the organisational characteristics would have positive effect on each of the engagement dimensions. This is exhibited in the following hypothesis for the impact of both POS and Job characteristics.

POS has been demonstrated as having an important relationship with the engagement dimensions and this was demonstrated in section 4.1.2.1. (P5). The link between POS and the individual engagement outcomes has been reinforced in much of the literature on POS, especially with affective commitment (Hutchison 1997; Rhoades et al. 2001) and job satisfaction (Eisenberger et al. 1997). The argument for the links between POS and the emotional and cognitive dimensions were established. This leads to the following hypothesis:

H6a: POS will have a direct positive effect on the emotional engagement capabilities.
H6b: POS will have a direct positive effect on the cognitive engagement capabilities.
H6c: POS will have a direct positive effect on the individual engagement outcomes.

The job characteristics model in previous research has been found to have a positive effect on the psychological states (Hackman & Oldham 1975, 1980; May et al. 2004; Saks 2006) and the psychological states are believed to represent emotions and cognitions (this has been discussed in sections 2.2.2, 2.3.3.1 and 4.1.2.2). In addition it has been demonstrated that the job characteristics serve as an important antecedent to many constructs, especially those that are measured as part of the individual engagement outcomes: job satisfaction (Hackman & Oldham 1975, 1980) and affective commitment (Hutchison 1997; Winter & Sarros 2002). Chapter 4 outlined the role that the job characteristics may have on the engagement dimensions (P6) suggesting that if the academic has the core job dimensions then the results will be more positive. The job characteristics as an important antecedent are represented in the following hypothesis:

H7a: Job characteristics will have a direct positive effect on the emotional engagement capabilities.
H7b: Job characteristics will have a direct positive effect on the cognitive engagement capabilities.
H7c: Job characteristics will have a direct positive effect on the individual engagement outcomes.

Finally, the relationship between job characteristics and POS has not been strongly established as directional within the literature. It was argued in Chapter 4 (section 4.1.2) that there was a

relationship between the two. This is evident in the work of Hutchinson (1997) who identified POS as a mediator between various antecedents and an outcome variables. One of the antecedents was job characteristics. It was proposed in this thesis that the job characteristics would positively impact the perceptions of support (P7). If an academic had the core job dimensions then this would lead to greater perceptions of support from their university. The hypothesis is as follows:

H8: The job characteristics will have a positive effect on POS.

5.3.4. Hypotheses – Contextual Variables

The contextual variables identified for this research incorporate both personal and structural organisational variables (P8). Various contextual variables have been established as important in Chapter 3 (section 3.4) and given the context of the research domain these areas have been identified as potentially having a direct impact in the organisational characteristics. In the conceptual engagement model, this would then lead to an indirect effect on the engagement capabilities and outcomes. The personal variables of gender and age were considered as important dimensions within the model. In previous research both of these variables have had significant impacts on perceived organisational support and the job characteristics, also within the context of the research domain. Age in academia has been identified with unequal outcomes (Hugo 2005), and in a strong male dominated workforce this could be considered as developing important variations on the perceptions of support and characteristics. Gender differences too have been found in perceptions of support (Rhoades & Eisenberger 2002) and within academia (Winter & Sarros 2002). In addition gender and job characteristics have found differences (de Jonge et al. 2001) and within academia (Lacy & Sheehan 1997). This leads to the following hypothesis:

H9a: Gender will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
H9b: Gender will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
And
H10a: Age group will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
H10b: Age group will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.

In addition to the personal variables, the structural organisational variables of university group and lecturer level are considered to have a direct association with POS and Job Characteristics. Previous research has demonstrated that academics perform different work at different classification levels and lecturer levels have been found to differ significantly on both perceptions of support (Winter & Sarros 2002) and job characteristics (Barkhuizen & Rothmann

2006; Winter et al. 2000). This has also been found to impact on engagement (Barkhuizen & Rothmann 2006).

It has been shown that the Group of Eight University group are elite branded because of their high ranking on Academic Ranking of World Universities (ARWU 2008). This group is seen to have a greater capacity for research, with subsequently less time allocated for teaching. There is a perception that due to the large research focus, this group has greater control over their time which could impact the job characteristics and perceptions of support and leads to higher levels of engagement. This results in the following hypothesis:

H11a : Academic lecturer level will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
H11b : Academic lecturer level will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
And
H12a : Group of Eight universities will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
H12b : Group of Eight universities will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.

5.3.5. Hypothesis Summary

In summary this section has presented 12 overarching hypotheses with various sub-hypotheses. The first three hypotheses represent the common underlying constructs of emotional and cognitive engagement capabilities and the individual engagement outcomes. The other hypotheses focus on the exact testable relationships between all of the engagement dimensions as argued in the conceptual framework as presented in Chapter 4 (section 4.1). A proposition and hypothesis summary is presented in Table 5-3 and a diagrammatical hypothesis summary is presented in Figure 5-2. The next section explores the statistical techniques used to test the hypotheses.

Table 5-3 Summary of Research Propositions and Corresponding Hypotheses

Proposition		Hypothesis	
P1	*The **individual engagement capabilities**, as defined by emotions and cognitions will positively affect the **individual engagement outcomes**.*	H5	The individual engagement capabilities (emotional and cognitive engagement capabilities) will have a positive effect on the individual engagement outcomes.
P2	*Individual engagement capabilities - **Emotions** (**emotional engagement capabilities**) will have a positive effect on the individual **engagement outcomes**.*	H4a	Emotional engagement capabilities will have positive effect on the individual engagement outcomes.
P3	*Individual Engagement Capabilities - **Cognitions** (**cognitive engagement capabilities**) will have a positive effect on the **individual engagement outcomes**.*	H4b	Cognitive engagement capabilities will have a positive effect on the individual engagement capabilities.
		H4d	Cognitive engagement capabilities will have an indirect effect on the individual engagement outcomes as mediated through emotional engagement capabilities.
P4	*Individual engagement capabilities - **Cognitions** (**cognitive engagement capabilities**) will have a positive effect on the **emotional engagement capabilities**.*	H4c	Cognitive engagement capabilities will have a positive effect on the emotional engagement capabilities.
P5	*Organisational Characteristics - A **supportive organisational environment** will have a positive effect on the **individual engagement capabilities** (emotions and cognitions) and the **individual engagement outcomes**.*	H6a	POS will have a direct positive effect on emotional engagement capabilities.
		H6b	POS will have a direct positive effect on cognitive engagement capabilities.
		H6c	POS will have a direct positive effect on individual engagement outcomes.
P6	*Organisational Characteristics - The **design of the job** (job characteristics) will have a positive effect on the **individual engagement capabilities** (emotions and cognitions) and the **individual engagement outcomes**.*	H7a	Job characteristics will have a direct positive effect on emotional engagement capabilities.
		H7b	Job characteristics will have a direct positive effect on cognitive engagement capabilities.
		H7c	Job characteristics will have a direct positive effect on individual engagement outcomes.
P7	*The **design of the job** (characteristics) will positively affect the perception of a **supportive organisational environment**.*	H8	The job characteristics will have a positive effect on POS.
P8	*Contextual Variables – The **personal variables** and the **structural organisational variables** will have a direct association with the **organisational characteristics** (perceived organisational support and job characteristics) and an indirect association with the **engagement capabilities** and **outcomes**.*	H9a	Gender will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
		H9b	Gender will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
		H10a	Age group will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
		H10b	Age group will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
		H11a	Academic lecturer level will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
		H11b	Academic lecturer level will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
		H12a	Group of Eight universities will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
		H12b	Group of Eight universities will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
P9	***Emotional engagement capabilities** can be represented as a common underlying construct comprising the variables of vigour, meaningfulness, safety, availability and psychological resources.*	H1	The measures of meaningfulness, availability, psychological safety, psychological capabilities and vigour together have shared variance which will have the properties of a common underlying construct: emotional engagement capabilities.
P10	***Cognitive engagement capabilities** can be represented as a common underlying construct comprising the measures of attention, absorption, dedication, job involvement and intrinsic motivation.*	H2	The measures of attention, absorption, dedication, job involvement and intrinsic motivation together have shared variance which will have the properties of a higher order construct: cognitive engagement capabilities.
P11	*The **individual engagement outcomes** can be represented as a common underlying construct comprising the factors affective commitment, job satisfaction, intention to quit, exhaustion and disengagement.*	H3	The measures of affective commitment, job satisfaction, intention to quit, disengagement and exhaustion together have shared variance which will have the properties of a higher order construct: individual engagement outcomes.
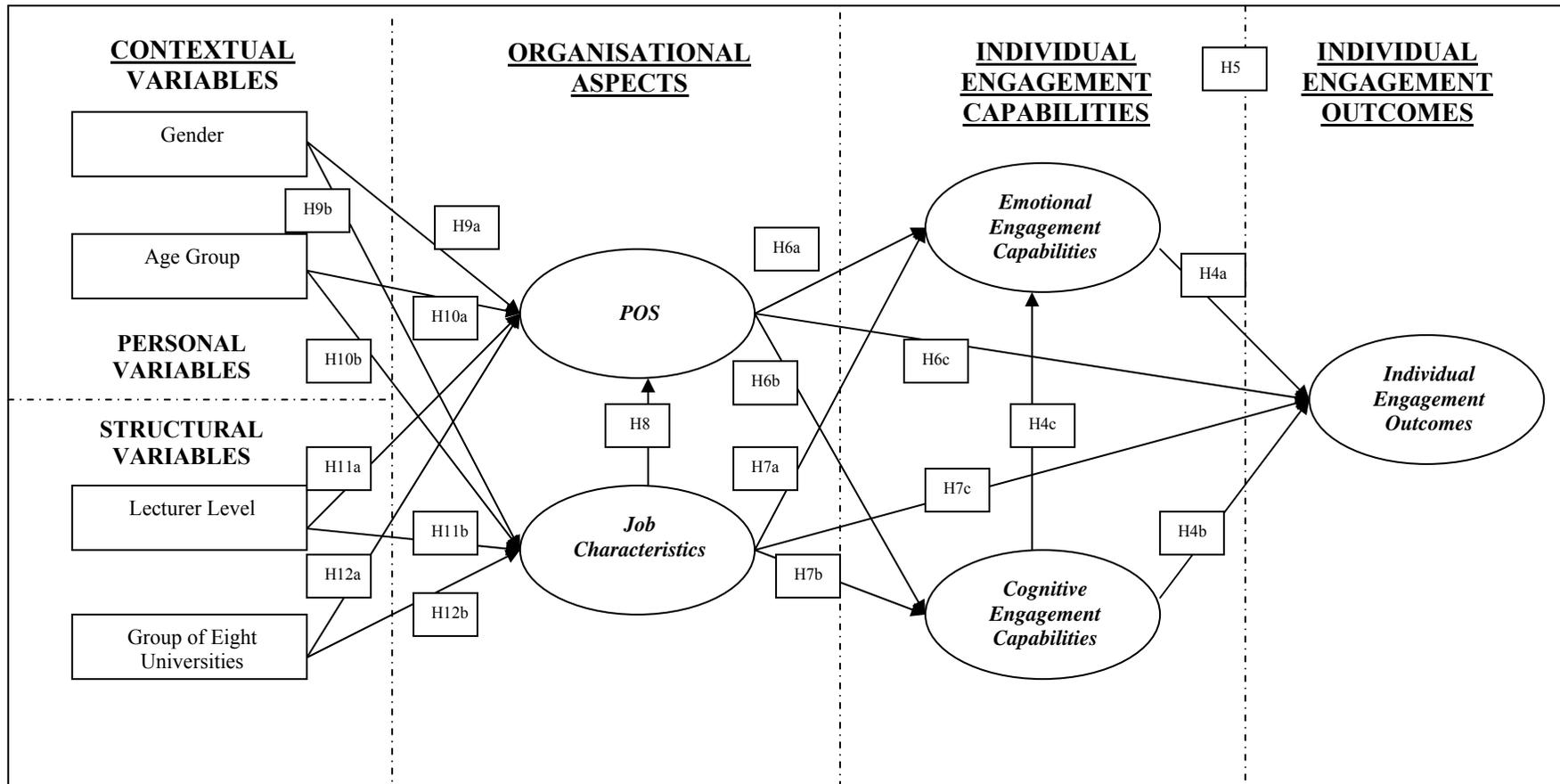
Figure 5-2 Hypothesized Relationships

5.4. The Research Method

This section of the chapter will outline the methods used in the data collection beginning with the participant selection before moving to questionnaire development and the pre-test of the questionnaire.

5.4.1. The Sample

Chapter 3 set the context for this research: business academics within the Higher Education sector in Australia. Much of the engagement literature has ignored academics as a sample group, with the exception of Barkhuizen and Rothmann (2006) who studied work engagement in a Southern African university. There is a clear gap in the literature in this sector on engagement. This research approached the investigation of business academics as a sector-wide analysis of all permanent business academics within the 37 publicly funded Australian universities.

There are a number of reasons to justify the selection of business academics as opposed to other disciplines within this sector. Typically within most universities in Australia business academics make up the bulk of the academics and students. This group would be quite distinct from other disciplines for this reason. One limitation of studying this group as part of a PhD is the necessary time constraints and as such this research needed to be limited in its scope. For instance, the study sought to use a sector wide approach of an entire discipline, rather than a limited coverage over all the disciplines. Whilst this poses a limitation to this study, future research may want to explore other disciplines as a comparison.

The participants recruited for the pre-test of the questionnaire, were academics in the Faculty of Business and Law at Victoria University. This was a convenience sample as information was easily accessible. Nevertheless, this is a valid data source for preliminary information (Cavana, Delahaye & Sekaran 2001). A list of business academics from Victoria University was compiled from the University's internet site (N=175). Following University Ethics approval, each academic was sent an introductory letter and a questionnaire via the internal mail. The questionnaires were sent during September 2007 and a follow up email was sent at the end of September. 175 questionnaires were posted out with 46 usable returns, a response rate of 26%. Five follow up interviews were conducted which helped to clarify some of the inconsistent findings as the questionnaire had asked participants to consider volunteering for follow up interviews. This is considered an appropriate strategy for the recruitment of interviewees. The interviewees consisted of one academic from each of the lecturer classification levels (A-E) from a variety of schools within the faculty. Further discussion of the pre-test is provided in section 5.4.3.

After consideration of the findings from the pre-test the final questionnaire was mailed out to the full sample (November 2007) which consisted of business academics from 36 of the 37 publicly funded universities. The researcher compiled a database of the details of the academics from each of the corresponding business faculties from the 36 university websites. This database approach was used by Bellamy, Morley and Watts (2003) to survey Australian business academics. As there was no known database other than that composed by Bellamy et al. (2003), the researcher in this instance developed a new, more current database. A total of 4454 questionnaires were posted out from which 704 (16%) questionnaires were returned and of these 664 were deemed usable responses. A usable response rate of 15% was achieved. The response rate is relatively low however, considering the questionnaire was sent to the entire population of business academics from Australia's 37 publicly funded universities, the responses provide a good sample of the entire population. For this reason it was not considered necessary to follow up on the questionnaire given that the entire population was sent the questionnaire. A sample size of 664 is considered to be large which allows for the use of a calibration/validation split sample which will be discussed in section 5.6.4.

Following the guidelines of the Victoria University Ethics Committee the questionnaires are now stored in a secure location. All research log books and information from the preparation of the research are stored with the questionnaires and these are accessible on request.

5.4.2. Questionnaire Development

The measures that formed the questionnaire were detailed in section 5.2. The questionnaire was designed with four distinct sections comprising demographic questions and a section representing each of engagement dimensions. Under each of the engagement dimensions the associated measures as described in the conceptual framework in Chapter 4 were presented. The questionnaire items that refereed to 'organisation' were altered to reflect the university and worker was changed to academic. The full questionnaire is presented in Appendix A1.

The questionnaire met the design elements proposed by Babbie (2005) and Cavana et al. (2001), for an effective questionnaire design:

> ➢ Introductory comments.
> ➢ Basic Instructions – questions that can be answered with minimal effort and time.
> ➢ Organised logically and neatly – created in logical sections and the questioning flows.
> ➢ An introduction to each of the different sections.
> ➢ Question alignment is neat, logical and consistent.

The participants were provided with a cover sheet introducing the research, the questionnaire and a return envelope. They were given space on the questionnaire to provide comments if they required. The participants were assured of the confidentiality and anonymity in the write up of this study. The participants were supplied with the contact details of the researchers so that if they needed clarification, assistance or questions they could directly contact the researchers. Furthermore, as per requirements of the Victoria University Ethics Committee, the committee details were also provided.

5.4.3. Pre-Test of Questionnaire

As discussed above, upon approval from the Victoria University Ethics Committee, the questionnaires were sent via internal mail to all academics within the Faculty of Business and Law at Victoria University (N=175). Pre-test participant details were provided in section 5.4.1. The data was analysed for reliability using SPSS. Even though the measures were pre-established, the changing climate in higher education, and the limited testing of some of the measures within this context (for example, disengagement and exhaustion) it was deemed necessary to reinforce the appropriateness of the measures for this sample. The goodness of the data was considered with the use of frequency analysis, the reliability of the measures was calculated and the Pearson's correlation matrix was calculated to ensure that the correlations between the measures were at appropriate levels (Cavana et al. 2001). The reliability coefficients of the measures ranged between 0.7-0.9 which are within acceptable levels (Cronbach 1951) except for the measures psychological safety (0.57), dedication (0.33), absorption (0.48) and intention to quit (0.6). The poor reliabilities for these measures may be due to random error caused from a small sample size (N=46) or from the small number of items per scale. After the pre-test no additional changes were made to the final questionnaire. The next section will identify the key limitations with the methods adopted for this study.

5.5. Limitations of the Research Design

Four broad limitations can be identified in from the research design. First, in developing each of the engagement dimensions as having the properties of a higher order constructs one limitation evident is in the relationships between variables. The thesis developed arguments both empirical and theoretical to join and test particular variables together. This approach was somewhat exploratory in nature, as many of these variables had never been linked together in the past. It called for some intuitive assessments of the relationships, albeit with the support of theory and in most cases, empirical evidence. Furthermore, many researchers in the engagement field particularly those in management academics and consultants have identified organisational citizenship behaviours as a key engagement dimension (Robinson et al. 2004). This was purposely not included because measuring organisational citizenship behaviour often requires a

supervisory assessment or self rating on terms; this type of approach did not fit in the overall structure of the Likert type questionnaire that was developed. This thesis does not assume to have exhausted all possible contributing factors to engagement but rather has used some available scales to understand and develop a more holistic engagement.

The second limitation of the study arises from its cross-sectional approach. The results were analysed on two samples (calibration and validation) to bring robustness to the results reported. The key limitation of this cross-sectional approach is the timing of the questionnaire distribution and return which could have influenced the results. There is argument in the academic literature on the nature of engagement (enduring or transient) however, it is not conclusive or full established due to the lack of definitional consensus (Hallberg & Schaufeli 2006). The questionnaires were sent out at the end of the teaching year (November) semester two had just ended and the timing could have impacted on the results of some of the measures. Further, respondent biases from those who replied could have also impacted the results.

Thirdly, the questionnaire received a low response rate and it may be argued that the questionnaire should have been followed up with a reminder. Due to the scope and number questionnaires distributed it was not deemed appropriate and within the budget of the research to follow up on those who did not respond. Equally, the questionnaire was sent to the entire population of business academics within Australia's publically funded universities and the sample is based on that population, which makes it a valid representation of the population of business academics.

Finally, common method variance can warrant as a significant limitation. Common method variance has the potential to 'inflate the observed correlation between two types of variables artificially' (Lindell & Whitney 2001, p. 114). This could be due to the self report nature of the questionnaire, the single data collection method (predictor and outcome variables measured in the same way). These concerns may have caused spuriously inflated relationships.

5.6. Statistical Techniques

In this section of the thesis the statistical techniques that were used to investigate the hypotheses will be detailed and explained. The statistical techniques incorporated simple statistics to prepare the data, the measures and provide overview of the sample. Advanced statistical techniques were used to test the hypotheses, these were: Higher Order Confirmatory Factor Analysis (CFA); Hierarchical Regression; and Structural Equation Modelling (SEM). A calibration/validation sample is discussed as an additional method for reinforcement and robustness of results. The complexity of the design was to ensure that the results are firmly

established and reinforced. Figure 5-3 provides a diagrammatical outline of the steps involves in the data analysis. Each of these steps is now discussed.

5.6.1. Data Preparation

In preparation of CFA and SEM, the data needed to be prepared for analysis. The data were coded, and entered into Microsoft Excel. The data was checked for missing values and these were checked against the questionnaire; every 20 questionnaires were checked against the database to ensure correctness of data entry. The items that were reversed scores were altered through formula changes in Microsoft Excel, composite variables (means of scales) were calculated, and where required some of the demographic variables were dichotomised. The database was opened as a SPSS (version 15) file to begin the preliminary analysis. The frequency statistics were analysed because there was a need to check for representativeness of the population and to check that each of the categories had meaningful representation. Frequency analysis also assisted in determining out of range values, which indicates possible errors in the data entry (Tharenou, Donohue & Cooper 2007).

One of the requirements of SEM is to have a full set of data without any missing values. In addition to checking against the questionnaire for missing data another way to deal with the missing values is the estimation-maximation (EM) data replacement available in SPSS. This method is recommended above listwise or pairwise deletion for SEM because these methods can result in biased parameter estimates and inflated chi-square values (Peters & Enders 2002). The EM method estimates the means, the covariance matrix and the correlation of quantitative variables with missing values using an iterative two-step process (Allison 2003; Peters & Enders 2002). The EM method is an appropriate technique when missing data is missing at random and missing data is less than 5% (Allison 2003; Kline 2005; Peters & Enders 2002). The next section outlines the overview statistics used in data analysis.

5.6.2. Overview Statistics

Various overview statistics were used including mean, standard deviation, percentages, minimum and maximum values, correlations, and Cronbach's alpha. These statistics were calculated for each of the variables within this thesis. The mean, standard deviation, minimum and maximum values are commonly used overview statistics (Hair et al. 2006). The mean is the arithmetic average of the scores in a distribution, the standard deviation is the measure of spread (of data) using the same unit of measurement as the data, minimum and maximum are the lowest and highest values of the measures (Bordens & Abbott 2005). Pearson's correlation (r) is the most common correlational measure; it measures the magnitude and direction of the correlational relationship (between any two metric variables) (Bordens & Abbott 2005; Hair et

al. 2006). It is a measure of -1 to +1 where 0 indicates no relationship and 1 (+or -) indicates the strongest relation. A correlation matrix was created for all the variables within the study. Cronbachs alpha (α) was also used to determine inter-item consistency of the measures; it is discussed in the next section (5.6.3).

5.6.3. The Measurement Dimensions

The measures that were outlined in section 5.2 were each subjected to an analysis of the Cronbachs alpha (α). The measures used were all previously established and reliable measures as specified in section 5.2, it was necessary to establish the measurement dimensions of each of the measures used in this study. Cronbachs alpha is a test of the inter-item consistency within a selected measure (Babbie 2005), alpha levels of 0.6 -0.7 are considered moderate and are the suggested lower limits for acceptable alpha levels (Hair et al. 2006). For the initial analysis the measures were tested for reliability once established they were then tested for discriminant validity. Pearson's correlations (see section 5.6.2) were used to establish discriminant validity. Discriminant validity is a reflection of the distinctiveness of a measure from other measures. Correlations of r=0.5 are considered appropriate. Anything over 0.8 but especially 0.9 indicates that the measures are not capturing something unique. Once each of these dimensions was established then the sample was split in two.
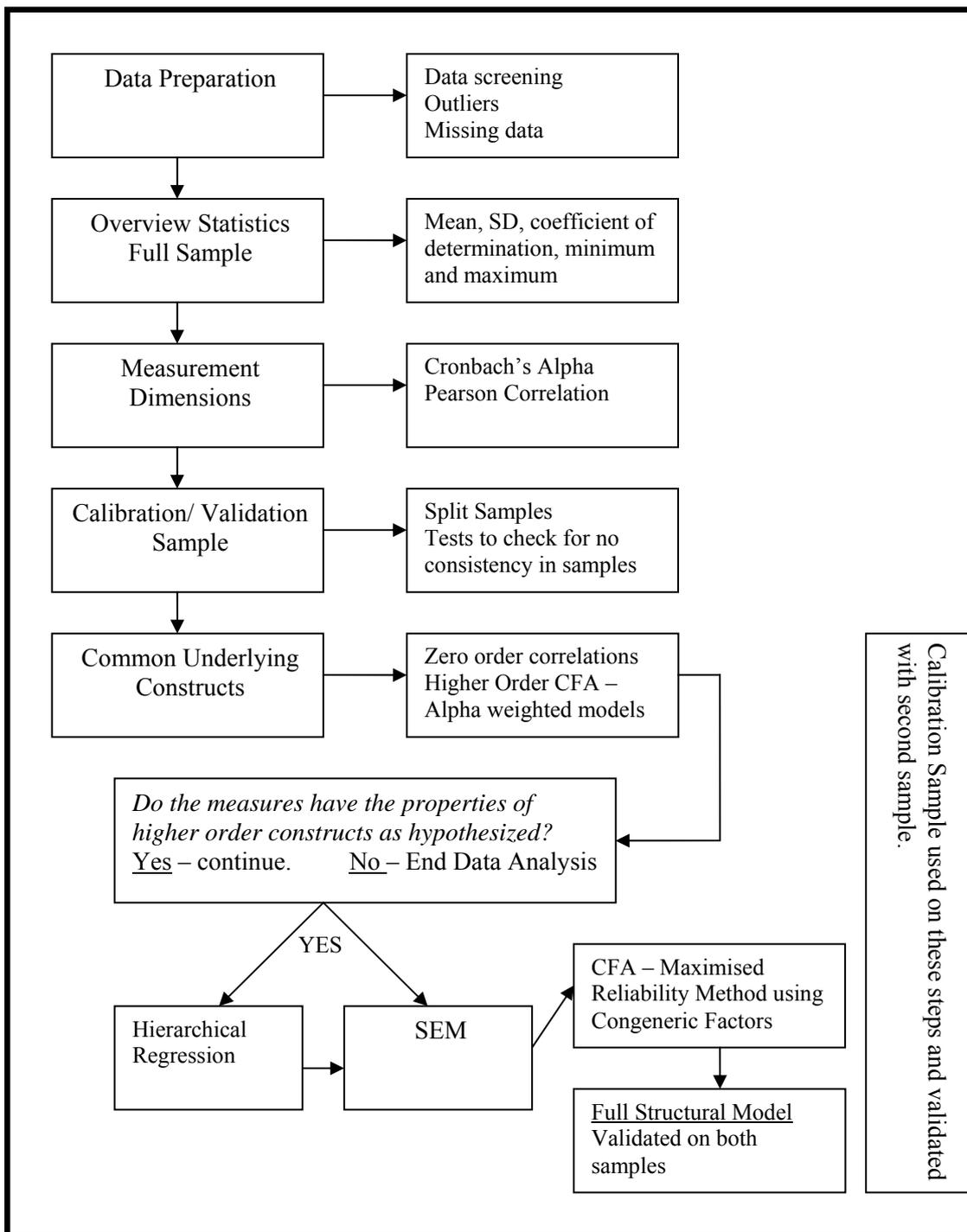
Figure 5-3 Outline of the Data Analysis

5.6.4. Cross Validation – Calibration/ Validation Sample

There is much dispute within the domain of SEM regarding sample size. As SEM deals with usually large numbers of parameters as well as variables, the expectation is for larger sample sizes. Larger sample sizes are often needed to maintain power and to obtain more stable parameter estimates and measurement error (Schumacker & Lomax 2004, p. 49). Some researchers suggest samples between 250-500 people (Schumacker & Lomax 2004), others

suggest 100-150 as a minimum (Ding, Velicer & Harlow 1995), whereas others suggest that the sample size needs to reflect the number of parameters in the sample (Byrne 2001; Kline 2005). For example 5- 10 subjects per parameter used (Holmes-Smith et al. 2005). The sample for this thesis is within all these limits and this justifies the use of this method type.

The size of the sample obtained in this study allowed for the use of a calibration / validation sampling method and remains within the limits specified. Essentially this method also referred to as an analysis/ holdout sample, requires the random splitting of the sample. This is a commonly used approach to gain greater empirical support in SEM (as well as other complex statistical techniques) (Pedhazur 1997; Schumacker & Lomax 2004). Empirical support is most often gained through replication studies but the validation method allows for validation of adjustments and changes within the one study on a separate independent sample. The validation approach is considered more cost effective. In other words, where changes are made on the model these changes can be validated (replicated) with another independent sample within the same study.

The sample was randomly split in SPSS; each sample was saved as the calibration or validation sample. T-test's were used to ensure that there were no significant differences between the two samples. A t-test for equality of means and Levene's test for equality of variances were the tests used to establish no significant differences between groups. The split sample is used for all hypotheses testing as specified in Figure 5-3.

5.6.5.   Testing for Properties of Higher Order Constructs

For this stage of the research, it was hypothesized that there were three potential common underlying (higher order) constructs that were each represented by a series of related engagement variables (see section 5.3.1). Higher order CFA was used to test whether the constructs had properties that indicated the presence of a common underlying construct that accounts for shared variance. This was first done using mean scale alpha to see whether they form a scale then CFA. This method was approached and reinforced in a three tier analysis and subsequent validation with the second sample.

In preparation for the higher order CFA, the construction of item bundles or item parcels was required (Hair et al. 2006). Item parcels are 'combining measured variables into sets of variables by either summing or averaging several items. These parcels can then be used as indicators when the total number of indicators is unmanageable' (Hair et al. 2006, p. 771). The parcels were calculated as the average of the measurement items. In addition, the item parcels also needed to be adjusted so that the measures were in the same direction, for example

disengagement, exhaustion and intention to quit are all negative measures and these were calculated into a positive derivative using the recode function in SPSS. This would enable all parcels to be positively associated. This study was unable to confirm whether the underlying constructs were second order constructs due to sample size limitations and also due to needing to split the sample into two.

5.6.5.1. Zero Order Correlations between Engagement Dimensions

Having calculated each of the measures as item parcels, it was initially required to use the item parcels as items and establish the inter-item reliability of the proposed common constructs. This was to determine whether the potential higher order constructs held at the Cronbach alpha level because this would indicate some initial support for the characteristics of higher order constructs. Furthermore, each of the common measures was then tested for zero order correlations with the other. This was to determine discriminant validity as well as ascertain the extent of the relationship between the engagement dimensions which would begin to support the hypotheses.

5.6.5.2. Higher Order CFA

The next step using the calibration sample, was the establishment of the groups of measures as having the properties of higher order constructs, this was done using higher order CFA. The justification for this type of approach was to enable the joining of many of the engagement variables to determine whether there were some underlying relationships between the variables. As detailed each of the potential higher order constructs are represented by a set of measures (see section 5.3.1), the higher order CFA allowed for the testing of higher order latent constructs and to determine whether the variables together shared an underlying variance which indicated that they had the characteristics of a higher order construct. CFA is an integral component of SEM; it is used to test the measurement model. At this stage it is being used to determine whether the measures represent a higher order model. CFA requires the researcher to 'specify both the number of factors that exist within a given set of variables and which factor each variable will load highly on before results can be computed' (Hair et al. 2006, p. 774). Within CFA the researcher makes decisions based on knowledge of the theory (a priori), it is essentially a test of confirmation of the measurement theory. 'Measurement theory specifies a series of relationships that suggest how measured variables represent a latent construct that is not measured directly (Hair et al. 2006, p.774). The higher order CFA specifies whether the measures together represent a single underlying latent construct.

Three potential common underlying constructs were identified a priori as represented in Chapter 4. The testing of these measurement models used a three tier process; a simple model,

comparison model and the alpha measurement model. The first tier used the item parcels, where each measure was treated as an item that represented the latent of either emotional or cognitive engagement capabilities or individual engagement outcomes (Figure 5-4). This stage is referred to as the simple model and the intention was to determine whether the simple model would hold. In this model E = error term.
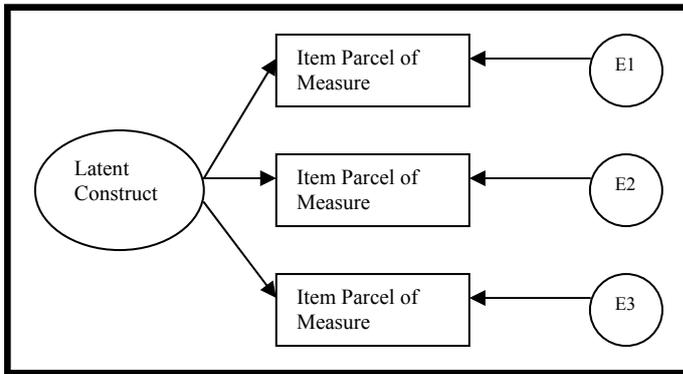
Figure 5-4 Example of Simple Measurement Model

The second tier tested each measurement model as a higher order construct. Each measure was treated as its own latent construct represented by the bundle of its measure linked to the other measures via a higher order construct (as represented in Figure 5-5). This model is called the comparison model, where the error variance (θ) is fixed at zero and the regression co-efficient (λ) is fixed at 1. E=error term and R= residual. The intention of this model to was to determine whether a higher order model would hold as hypothesized.
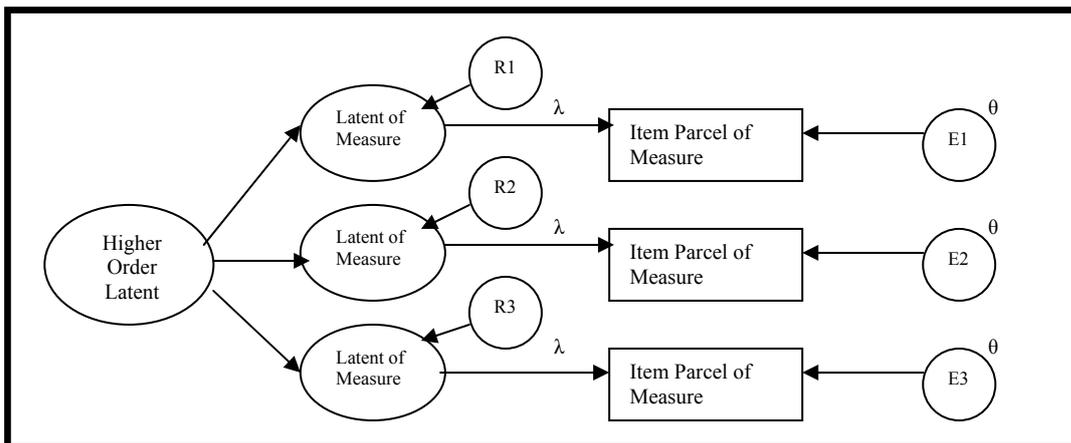
Figure 5-5 Example of a Higher Order Model

The third tier of the analysis is called the alpha weighted model. As part of the measurement model it is also possible to fix the regression coefficient (λ) and the error variance (θ) (Politis 2001), this is done using equations one and two below. Munck (1979) says that these equations work when the matrix used is a matrix of covariance as produced in AMOS. The intention of

126

this tier is to use all the available information to ensure that the measurement model is exact based on data and the Cronbach's alpha.

Equation 1 $\qquad$ $\lambda = \sigma\sqrt{\alpha}$

Equation 2 $\qquad$ $\theta = \sigma^2(1-\alpha)$

Where α = Cronbach's alpha for the construct
σ = Standard deviation of the composite measure
σ^2 = Variance of the composite measure

In the third tier of the analysis, using the Cronbach alpha coefficient of each of the measures as calculated in SPSS, formulas one and two were calculated in Microsoft Excel and fixed onto the measurement model in AMOS (Politis 2001) at the locations of θ and λ as identified in Figure 5-1. The alpha weighted model is the only model reported in the results sections, as this model uses the greater amount of available information. Models at tier one and tier two are calculated and presented in Appendix A2, these are used as a comparison and a reflection of consistency between the models. The alpha weighted model was then assessed for model fit.

5.6.5.3. *Assessment of Model Fit*

At all tiers of analysis for the higher order constructs model fit was assessed using the fit indices described in Table 5-4. In this type of statistical analysis the hypothesized model is tested against the data for a 'goodness of fit', there are many model fit indices which statistically determine this fit. Most commonly chi-square (χ^2) or normed χ^2 (ratio of chi square to degrees of freedom, χ^2/df are the reported fit statistics. However, Hair et al. (2006) argue that these are not enough because these model fit statistics can be significantly influenced by sample size. Therefore other fit indices should be considered in addition to the chi square. There are two different types of model fit indices: absolute and incremental. Absolute fit is the 'measure of absolute discrepancy between the matrix of implied variances and covariance to the matrix of empirical sample variances and covariance' (Holmes- Smith et al. 2006, pp. 3-9). Measures of absolute fit that will be used in this thesis are; normed chi square (χ^2/df), Goodness of Fit (GFI), Adjusted Goodness of Fit (AGFI), Root Mean Square Residual (RMR) and the Root Mean Square Error of Approximation (RMSEA). The incremental fit indices are how well the model fits compared to a baseline model (Holmes- Smith et al. 2006); these include the Tucker- Lewis Index (TLI) and the Comparative Fit Index (CFI). The final inclusion in Table 5-4 is the Akaike Information Criterion (AIC) this is a measure of model parsimony, there is no absolute criterion that indicates parsimony. With each new model the AIC must go down, the model with the lowest AIC is the most parsimonious. According to Holmes-Smith et al. (2006) each of these model indices together provide a comprehensive analysis of model fit.

Table 5-4 Summary of Model Fit Indices

Name	Abbrev	Type	Levels – Good fit	Notes
Chi Square	χ^2	Model Fit	p>0.05	Impacted by sample size
Normed Chi Square	χ^2/df	Absolute Model fit and model Parsimony	1.0< χ^2/df <3.0	Close to 1 good fit, less than 1 over fit
Goodness of fit and adjusted goodness of fit	GFI AGFI	Absolute Fit	>0.95	0.9- 0.95 adequate fit Difference between the two should not be more than .06
Standardized root mean square residual	SRMR	Absolute fit	SRMR <0.05	0.05-0.1 adequate fit
Root mean square error of approximation	RMSEA	Absolute Fit	RMSEA <0.05	0.00-0.1 adequate fit
Tucker Lewis, Non normed fit index or Rho2	TLI NNFI P2	Incremental Fit	TFI >0.95	0.9- 0.95 adequate fit >1 = overfit
Comparative Fit Index	CFI	Incremental Fit	CFI >0.95	0.9- 0.95 adequate fit
Akaike Information Criterion	AIC CAIC	Model Parsimony	Not defined	The model with the smallest AIC is the most parsimonious

Note: Table adapted from Holmes- Smith et al. (2005)

In addition to the three tiers of higher order construct reinforcement using the calibration sample, the higher order constructs were assessed at the alpha weighted model level using the validation sample. This was to determine whether the model held with a separate independent sample (as outlined in 5.6.4). If the constructs were found to have a common underlying construct that accounted for a shared variance, then further data analysis could continue as hypothesized and demonstrated in the data outline (Figure 5-3). At this stage if a common underlying constructs were not found then data analysis would not continue. The next stage is the analysis of the full engagement model.

5.6.6. The Full Model

This next stage of the research was the analysis of the full hypothesized engagement model as presented in section 5.2. This was approached in two ways: hierarchical regression and SEM. Hierarchical regression tests the predictor relationships of variables entered into a regression equation in a sequential order (Tabachnick & Fidell 2007). The reason for using this type of approach is to test relationships while controlling for variation caused from other variables (Pedhazur 1997). In this study, hierarchical regression was used to determine the predictability and extent of contribution for unique variation of the engagement capabilities on the engagement outcomes while controlling for variation from the organisational characteristics and contextual variables. On the other hand SEM does two things, it examines the causal processes with a series of regression equations (Byrne 2001) and factor analyses (Hair et al. 2006). It is the simulations analysis of all paths at once to determine the goodness of fit with the data

(Byrne 2001; Kline 2005). It can be argued that to test the model as described in Chapter 4 and pictorially drawn in Figure 5-2 that either statistical analysis are appropriate to determine the significance relationships. To provide greater robustness this thesis relies on hierarchical regression to test the impact of all the individual engagement capabilities (emotional and cognitive) on the individual engagement outcomes and SEM is used to test the full model and the impacts of the individual paths within the model.

5.6.6.1. Hierarchical Regression

Hierarchical regression is a technique that allows the researcher to determine the sequence of the independent variables entering the regression equation. The independent variable is assessed according to what it adds to the equation at its entry point (Tabachnick & Fidell 2007). The sequence of entry is determined either logically or theoretically. The benefit of this approach is the degree of researcher control. This technique was used in this study to determine whether the individual engagement capabilities predicated individual engagement outcomes whilst controlling for variation from the contextual variables and the organisational characteristics. Item bundles of the common underlying constructs were used, for example cognitive engagement capabilities were calculated as the mean of the absorption, attention, dedication, job involvement and intrinsic motivation. The intention was to control for variation on both the contextual variables and the organisational characteristics, and to test whether the individual engagement capabilities have a significant positive impact on the individual engagement outcomes.

Due to the hierarchical (sequential) elements of this regression, the first level introduced the contextual variables (personal and structural organisational variables). Then as specified in the conceptual framework, the organisational characteristics were both introduced (Job Characteristics and POS) then the individual engagement capabilities (emotional and cognitive engagement capabilities) all measured against the dependant variable: individual engagement outcomes. Hierarchical regression allowed the researcher to determine the predictability of the variables entering the model at each of the levels on the individual engagement outcomes and determine the unique variance accounted for. The full model was built into a hierarchical regression, as follows in Figure 5-6.
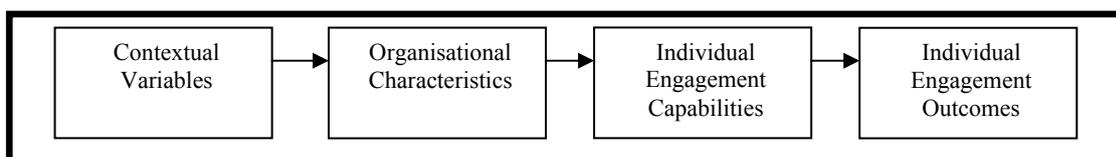
Figure 5-6 Hierarchical Regression Model

Hierarchical regression is evident where each of the dimensions (boxes within the diagram) represents the timing of the entrance into the regression equation. Once analysed the hierarchical regression may identify the importance of each of the dimensions on the individual engagement outcomes. As well as provide support for the developed hypothesis. The results were verified with the validation sample.

5.6.6.2. The Measurement Model

SEM as detailed so far, is the simultaneous analysis of all paths at once to determine the goodness of fit with the data (Byrne 2001; Kline 2005). There are two explicit methods used in the analysis of the data, CFA (measurement model) and SEM (the structural model). CFA is a common way to determine the viability of the measures, and is often the selected method in the testing of the measurement model when the measures are pre-established (see sections; 5.6.3 & 5.6.5.2). CFA is appropriate when there is some idea of the underpinning latent structures (Byrne 2001), based on the knowledge of the theory and applications the explicit variable relations are indicated within a model. The CFA extraction method that has been used is the maximised reliability with composite reliability and congeneric factors (Munck 1979; Politis 2001, 2002).

Each of the proposed common underlying constructs held at the alpha weighted level as demonstrated in section 5.6.5 therefore the item bundles of the higher order constructs were calculated. As presented previously, item parcels are useful when there is a lot of information and many items to consider (Hair et al. 2006). Given that the measures held up at the higher order alpha level they were treated as composites, each of the bundled measures will be treated as an item representing the common underlying constructs, indicating the properties of higher order constructs. These items will be bundled in the full model.

Maximised Reliability Method

The maximised reliability method is a method that like the alpha weighted model presented in section 5.6.5.2 which allows for all the data to be used to determine the λ and the θ on the model. However, the difference between the alpha weighted model and maximised reliability method is the use of composite reliability (rc). Composite reliability is built on factor score regression weights of the subjects and is calculated on the initiating structure composite score. This method is consistent with Munck (1979) and Politis (2001, 2002) and the methods are detailed below.

According to Jöreskog and Sorbom (1989) it is possible to provide an estimate score for each of the subjects using the factor score regression weights, this results in the initiating structure composite score (Equation 3).

Equation 3 $\xi i = \Sigma \ \omega i \ xi$

Where ξ_i = estimated score
ω = is the row vector of factor score regression weights
x = is a column vector of the subjects observed indicator variable

These scores are built into the full structural model. It is then possible to fix the error variances and regression coefficient using the initiating structure composite score. At this stage because the matrix used is a matrix of covariance, as produced in AMOS (Politis 2001; 2002; Munck 1979) then as used in section 5.6.5.2, the following equations are used. However, the difference exists in the use of reliability of the composite (r_c) rather than the Cronbach reliability of the measure.

Equation 4 $\lambda = \sigma\sqrt{\alpha}$

Equation 5 $\theta = \sigma^2(1-\alpha)$

Where: α = Composite reliability coefficient (r_c)
                  σ = Standard deviation of the composite measure
                  σ^2 = Variance of the composite measure

The next section will detail the steps for the determination of the composite reliability (rc) using the initiating structure composite score and the subsequent λ and θ as calculated in equation four and five. The result will be congeneric factor scores which can be fixed in the full structural model. The steps are presented in Table 5-5.

Finally, the congeneric factors can be applied to the full structural model, for this thesis the congeneric factor composites were calculated for the common underlying engagement dimensions; emotion and cognitive capabilities and the individual engagement outcomes. The full calculations are presented in Appendix A4. The measures of POS and job characteristics were assessed within the full model with alpha weighted loadings because both of these measures were pre-established as valid and reliable measures.

Table 5-5 Steps Required for the Maximised Reliability Method

Step 1	Fit the model
Step 2	Compute a composite using the factor score regression weights by; a. Sum the factor score regression weights b. Divide each factor score weight by the total to get new values. c. In SPSS, calculate the composite by running the syntax of item number multiplied by factor score weight that was generated in step 2 b.
Step 3	In SPSS, find the standard deviation, variance, minimum and maximum of the composite.
Step 4	Calculate the reliability by; a. In AMOS find the implied covariance matrix and construct matrix. b. In AMOS find the error variances and enter on the diagonal of the theta- delta matrix c. Using the recalibrated (those summed to equal 1) factor score weights to put into the WFS vector. d. Run the syntax window and record the reliability.
Step 5	Calculate the factor loading and error variances using Equation 4 and Equation 5 above.
Step 6	These values will then be used to fix the λ and θ in the full structural model.

Determining Model Significance

The model was assessed for model fit (as described in Table 5-4) and then validated using the validation sample. Once model fit was established the hypotheses (H4-H11) were considered and evaluated using path analysis. Path analysis provides in the standardised model (which is the results that will be presented) a measure of the regression co-efficient (beta – β). This is provided in the AMOS output and it measures the direct effect between two variables.

The indirect effects are estimated as a product of the direct effect, as measured as a regression coefficient (Kline 2005). It is calculated as the β of A $\rightarrow$ B and B$\rightarrow$ C, for instance βAB (βBC) = indirect effect. Using the explanation by Kline (2005) A has a direct impact on B but only part of it (βBC) is transmitted to C. The indirect effect says that the level of C will change by the indirect effect as a standard deviation for every increase in 1 full standard deviation on A prior to the effect on B. Kline (2005) also says that if the indirect effects are significant and the direct paths are not then this demonstrates the mediator effect. The total effects are the sum of the direct and indirect paths. The standardised paths are interpreted as the 1 standard deviation increase in A changes C by the total effect via all direct and indirect paths assuming that there is a direct path between A$\rightarrow$C.

Model fit and the individual path analysis will provide the analysis to support the engagement model within this thesis, and test the viability of the developed hypotheses. Once a significant model is established, then the model is fitted on to the validation sample to develop support and robustness of the findings.

5.7. Chapter 5 Summary

This chapter provided the testable hypothesis and the methods of investigation. The areas identified as part of the conceptual framework (Chapter 4) that were considered essential for engagement were developed into their specific measures (section 5.2). The breadth of measures was discussed in terms of their applicability for this study and their proven reliability and validity as pre-established measures. The measures were then formulated into testable hypotheses. In total 23 hypotheses were developed based upon the conceptual framework that included 11 propositions.

The first three hypotheses on the engagement dimensions encompassed each of the considered common underlying constructs as representing a group of pre-established measures, which together would indicate that they had the properties representative of higher order constructs. The emotional engagement capabilities were represented by vigour, meaningfulness, availability, psychological safety, psychological resources and availability. Cognitive engagement capabilities were represented by the measures of attention, absorption, dedication, job involvement and intrinsic motivation. And the individual engagement outcomes were represented by the measures of affective commitment, job satisfaction, intention to quit, exhaustion and disengagement.

The other hypotheses on the relationships between the various dimensions were identified within the hypothesis framework (Figure 5-2). It was necessary first to establish support for the common underlying constructs before the various engagement relationships could be investigated because the relationships incorporate the establishment of the potential higher order constructs. These hypotheses centred on the relationships between the engagement dimensions, the impact of the antecedent organisational characteristics and the contextual control variables.

The statistical methods for data analysis required a number of steps (as outlined in Figure 5-3) which included data preparation, overview statistics and measurement dimensions in preparation for more advance data analysis techniques. The advanced statistics incorporated higher order CFA to determine the existence of common underlying constructs. Hierarchical regression and full SEM were adopted to test the relationships using the full hypothesised model.

Using the methods for data analysis outline presented in this chapter, the next chapter presents the results of the statistics at each stage relevant to the presented hypotheses and as diagrammatically presented in Figure 5-3.

Chapter 6 : RESULTS

This chapter presents the research results for the thesis. The methods adopted for the study of engagement were presented in the previous chapter and summarised in Figure 5.3. The results presented here are organised under five key sections: sample overview, measurement analysis, higher order constructs, hierarchical regression and measurement model (SEM).

The first section presents the overview statistics of the entire sample including the demographic and frequency analysis. A calibration and validation sample was used and each sample was analysed to determine the balance between the samples. The chapter then moves to analyse the measures adopted for this study, including Cronbach's alpha and Pearson correlation to ensure they are reliable and valid.

This chapter then sets out the testing of the hypotheses. First, the hypothesized measures are investigated to see if they have the characteristics of higher order constructs using higher order CFA. Following the establishment of the common underlying constructs the next section explores the conceptual model of engagement, using both hierarchical regression and full SEM. In each of the hypothesis testing sections, verification of the results is established with the validation sample. The chapter concludes with an exposition of the results against the developed hypothesis.

6.1 Sample Overview

After data entry the standard tests were run to provide details about the data. Firstly an overview of the data set is given (descriptive and frequency statistics), the overview statistics of the sample are provided and the calibration /validation sample is discussed.

6.1.1 Sample Demographics

The sample size used was 664, of these 51.8% were male and 41.9% were female. 93.7% of the sample were fulltime permanent staff members, the other 6.3% represented part time staff members. The average length of service at the current university was 8.54 years and at the current academic classification level the average time was 5.18 years. Table 6-1 presents the percentages of the age-grouping, lecturer classification and university grouping. As can be seen majority of the academics are in the age range from 35-64, with the age range 45-54 having the highest density. It is also evident that Level B lecturers have the greatest density followed by level C classification. In terms of qualifications, 62.9% have PhD's, 25.2% have Masters

Degree, 6.2% have Bachelor degree and 5.8% represented an 'other classification category' this incorporated the Graduate Degrees and Doctor of Business Administration. As outlined in Chapter 3 focused on the publicly funded Australian universities and noted there are five university groups (both official and unofficial) all formally recognised (Australian Education Network 2007). The distribution of respondents from each university group is also presented, the Group of Eight group has the highest proportion of respondents (27.6%) and the IRU has the lowest proportion of responses (14.8%).

Table 6-1 Frequencies for Age Group, Lecturer Classification and University Group

Age Group*		Lecturer Level		University Group	
25-34	13.0	A	11.6	Go8	27.6
35-44	22.4	B	39.5	NewGen	21.8
45-54	38.6	C	24.2	ATN	16.3
55-64	23.5	D	13.1	IRU	14.8
>65 years	2.1	E	11.6	REG	19.4

* In the age group of <24years there was only one respondent (0.2%) so was not included in the analysis

6.2 Measurement Dimensions

In this section each of the measurement variables are analysed. 17 variables were identified as essential to the conceptual framework (Chapter 4) these variables were conceptualised as 17 pre-established measures outlined in Chapter 5. For this thesis each of the 17 measures has been subjected to analyses of their psychometric dimensions including Cronbach's alpha and discriminant validity. This was to ensure that the measures of each of the concepts were reliable, valid and measuring what they intended. In addition the properties of the two samples are considered, statistically determining their similarities using t-test for equality of means and Levenes test for equality of variances. This is to ensure no significant differences between the samples.

6.2.1 Measurement Properties and Reliability

Table 6-2 provides a summary of the variables measured in this study using the full sample (N=664). The table presents the mean, SD and variance, in addition the correlation matrix (Pearson's) and the Cronbach's alpha is presented. Each of the measures exhibited adequate alpha levels (.70 and above) (Cronbach 1951) all except –psychological safety.

Table 6-2 Summary Statistics of Variables Using the Full Sample (N=664)

	Mean	SD	Var	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.Meaningfulness	5.913	.98	.954	(.937)															
2.PsyCapabilities	4.426	1.27	1.61	.23(**)	(.855)														
3.Vigour	5.08	.98	.956	.47(**)	.39(**)	(.837)													
4.Avaliability	5.614	.918	.842	.24(**)	.42(**)	.51(**)	(.859)												
5.Absorption	4.699	1.15	1.32	.28(**)	-.09(*)	.38(**)	.09(*)	(.781)											
6.Attention	5.605	.967	.936	.37(**)	-.09(*)	.32(**)	.06	.34(**)	(.937)										
7.Dedication	5.306	1.11	1.23	.68(**)	.25(**)	.68(**)	.34(**)	.44(**)	.41(**)	(.905)									
8. Motivation	6.188	.881	.777	.50(**)	.17(**)	.47(**)	.22(**)	.33(**)	.37(**)	.61(**)	(.901)								
9.JobInvolvement	4.46	1.28	1.63	.54(**)	.06	.40(**)	.10(*)	.32(**)	.6(**)	.53(**)	.45(**)	(.894)							
10.Commitment	3.91	1.22	1.5	.39(**)	.29(**)	.38(**)	.26(**)	.13(**)	.19(**)	.41(**)	.28(**)	.38(**)	(.846)						
11.JobSatisfaction	4.914	1.14	1.29	.59(**)	.41(**)	.59(**)	.39(**)	.27(**)	.25(**)	.68(**)	.48(**)	.48(**)	.59(**)	(.877)					
12.Disengagement	2.982	.529	.28	-.56(**)	-.43(**)	-.56(**)	-.40(**)	-.25(**)	-.26(**)	-.64(**)	-.47(**)	-.41(**)	-.51(**)	-.72(**)	(.734)				
13.Exhaustion	2.689	.625	.389	-.18(**)	-.75(**)	-.38(**)	-.44(**)	.06	.19(**)	-.19(**)	-.15(**)	.003	-.32(**)	-.44(**)	-.44(**)	(.836)			
14.Intention to Quit	4.767	1.67	2.79	-.28(**)	-.32(**)	-.28(**)	-.19(**)	-.04	.001	-.28(**)	-.19(**)	-.20(**)	-.59(**)	-.59(**)	-.45(**)	-.37(**)	(.796)		
15.POS	5.104	.948	.899	.25(**)	.42(**)	.31(**)	.27(**)	.02	.02	.28(**)	.24(**)	.21(**)	.61(**)	.46(**)	-.43(**)	-.43(**)	-.48(**)	(.91)	
16.JobCH	3.675	1.31	1.7	.43(**)	.28(**)	.41(**)	.31(**)	.21(**)	.23(**)	.47(**)	.42(**)	.35(**)	.51(**)	.59(**)	-.59(**)	-.31(**)	-.42(**)	.50(**)	(.732)

NOTE: **Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). Cronbach Alpha of the scales on the diagonal. Variables, disengagement and exhaustion have been reduced and optimised using alpha factoring detailed in section 6.2.1.3.

In the pre-test of the questionnaire the measures of psychological safety, dedication, absorption and intention to quit all had poor alpha levels (section 5.4.3). The poor alpha levels were attributed to the small sample size. All other measures achieved greater inter-item consistency in the full sample (N=664) except psychological safety. In a comparison study by Olivier and Rothmann (2007) psychological safety was also found to have poor alpha levels. For this study an alpha level of 0.595 was considered too low to warrant inclusion in the study. According to Hair et al. (2006) 0.6 is the absolute lowest level of acceptability for Cronbach alpha. The inter-item correlations for the measure of psychological safety were consulted, however, with only three items; the alpha level could not be sufficiently increased by deleting any of the items.

6.2.1.1 *Reliability of Measures*

The reliability, or the inter- item consistency as measured using Cronbach's alpha (α) of the measures used in this study are all within the acceptable limits as discussed by Cronbach (1951) and Hair et al. (2006). For the full sample, (N=664) the Cronbach alpha levels are presented in Table 6-2. As discussed in the previous section, a calibration/ validation sample was used. To further ensure consistency between the samples, the Cronbach's alpha levels for each of the measures on each of the samples were also computed. These are presented in Table 6-3. All alpha levels are within the required limits. In producing consistency between the samples, the alpha levels are used in computing the alpha loadings using higher order CFA in hypothesis testings in section 6.4 below.

6.2.1.2 *Discriminant Validity*

Pearson's correlation is a measure of discriminant validity and measures the magnitude and direction of the correlational relationship (between any two metric variables) (Bordens & Abbott 2005; Hair et al. 2006). Correlations of 0.5 suggest that the measures represent a distinct concept, 0.8 and 0.9 suggest that the measures do not capture a unique concept. The correlations of the variables are presented in Table 6-2 and are all under 0.8 so suggest that they each are capturing a unique domain therefore demonstrating discriminant validity.

6.2.1.3 *Further Psychometric Assessment*

The measure of burnout using the OLB-I was factor analysed using alpha factoring this was done to ensure that each of the sub-variables, disengagement and exhaustion held up as independent measures. In previous research using the OLB-I medium to high cross loadings of items had been identified (Demerouti et al. 2003; Halbesleben & Demerouti 2005) and there has limited application of the OLB-I as a two variable measure. Alpha factoring is focused on the reliability coefficients, 'commonalities are estimated, using iterative procedures, that maximize coefficient alpha for the factors' (Tabachnick & Fidell 2007, p. 627). The alpha factoring using

Varimax rotation with Kaiser Normalisation revealed in a step through process identified two factors with the deletion of items, 3, 5, 9, 13, 14 and 16 because of their high cross loadings. As a sixteen item scale in the beginning the items accounted for 44% of the variance, the initial eigenvalues revealed three factors. With the subsequent deletion of the cross loading items the variance accounted for was 40.5% with two factors. Each of the factors represented the measures of exhaustion and disengagement as classified by Demerouti et al. (2001), they loaded on the expected variables. Each of the refined measures had alpha levels of 0.836 for exhaustion and 0.734 for disengagement (based on full sample analysis). Disengagement had Cronbach alphas of 0.719 and 0.735 for each of the samples; likewise exhaustion had a Cronbach alpha of 0.836 and 0.823 respectively for each of the samples (Table 6-3).

Table 6-3 Cronbach Alpha for Split Sample

Measure	Calibration α	Validation α
Meaningfulness	.919	.950
Psychological Resources	.889	.882
Vigour	.828	.884
Availability	.838	.896
Absorption	.797	.751
Motivation	.895	.896
Attention	.939	.931
Job Involvement	.896	.889
Dedication	.899	.912
Commitment	.848	.852
Job Satisfaction	.868	.852
Disengagement	.719	.735
Exhaustion	.836	.823
Intent to Quit	.771	.720
Job Characteristics	.704	.745
POS	.890	.926

6.2.2 Calibration/ Validation Sample Assessment

The calibration/ validation sample was detailed in section 5.5.4 of Chapter 5. The split sample is used for the testing of the hypothesis; therefore it is used for the higher order CFA, hierarchical regression and development of the measurement model through SEM. Table 6-4 provides an assessment of the t-test for equality of means and Levene's test for equality of variances for the two samples. Due to the nature of repeated t-tests, the significance level is set lower (0.01) to accommodate significant differences according to chance (Hair et al. 2006).

Table 6-4 reveals no significant differences between the two groups (calibration and validation samples) on each of the measures. POS showed near significance $t664=2.107$ [662], $p=.036$, however, Levene's test revealed no significant differences between variances of each of the

groups F664=1.189[662], p=.276. Therefore the difference on the t-tests after 15 other t-tests is due to chance.

Table 6-4 Calibration/Validation Sample

Variable	t-test for Equality of Means				Levene's test	
	t	Df	Sig*	Mean Diff	F	Sig
Meaningfulness	.351	662	.725	.02666	.016	.900
PsyCapabilities	1.437	662	.151	.14189	.232	.630
Vigour	-.429	662	.668	-.03258	.359	.549
Availability	1.558	662	.120	.11075	1.057	.304
Absorption	-1.201	662	.230	-.10698	.016	.901
Motivation	-1.175	662	.240	-.08032	.794	.373
Attention	-.778	662	.437	-.05856	.212	.645
Job Involvement	-.278	662	.781	-.02748	.117	.733
Dedication	-.726	662	.456	-.06412	2.982	.085
Commitment	-.228	662	.820	-.02155	.000	.986
Job Satisfaction	-.148	662	.882	-.0131	.223	.637
Disengagement	.570	662	.569	.02334	.009	.925
Exhaustion	.803	662	.422	.03891	.683	.425
Intent to Quit	.528	662	.597	.06837	.176	.675
JobCharacteristics	1.215	662	.225	.08925	3.590	.059
POS	2.107	662	.036	.21335	1.189	.276

* Significance values are two tailed.

This section demonstrated the dimensions of each of the variables used within this study. The measure of psychological safety was dropped from any further analysis due to poor reliability in both the pre-test and full questionnaire. The OLB-I was alpha factored to reduce the scale and remove cross loading factors. All the other measures of the variables were found to be both reliable and valid. The sample as split into the calibration and validation samples were found to be consistent with no significant differences between them. The next section provides the results for each of the engagement dimensions as having the characteristic of higher order constructs.

6.3   Hypothesis Testing

In Chapter 5 the hypotheses for this study were developed. Table 6-5 presents a summary of the hypotheses that were tested in this study. The hypotheses encapsulate the RQ1 and RQ2 by testing the various engagement contributions as having the properties of higher order constructs, and further the hypothesis tested the specific relationships around the engagement of Australian business academics. The next stages of the research relate to the testing of the hypotheses firstly as having the characteristics of higher order constructs (representing common underlying constructs) and then the common underlying constructs are tested in a hierarchical regression and within a full structural model.

Table 6-5 Hypothesis Summary

Number	Hypothesis
H1	The measures of meaningfulness, availability, psychological safety, psychological capabilities and vigour together have shared variance which will have the properties of a higher order construct: emotional engagement capabilities.
H2	The measures of attention, absorption, dedication, job involvement and intrinsic motivation together have shared variance which will have the properties of a higher order construct: cognitive engagement capabilities.
H3	The measures of affective commitment, job satisfaction, intention to quit, disengagement and exhaustion together have shared variance which will have the properties of a higher order construct: individual engagement outcomes.
H4	a : Emotional engagement capabilities will have a positive effect on the individual engagement outcomes.
	b : Cognitive engagement capabilities will have a positive effect on the individual engagement capabilities.
	c : Cognitive engagement capabilities will have a positive effect on the emotional engagement capabilities.
	d: Cognitive engagement capabilities will have an indirect effect on the individual engagement outcomes as mediated through emotional engagement capabilities.
H5	The individual engagement capabilities (emotional and cognitive engagement capabilities) will have a positive effect on the individual engagement outcomes.
H6	a : POS will have a direct positive effect on emotional engagement capabilities.
	b : POS will have a direct positive effect on cognitive engagement capabilities.
	c : POS will have a direct positive effect on individual engagement outcomes.
H7	a : Job characteristics will have a direct positive effect on emotional engagement capabilities.
	b : Job characteristics will have a direct positive effect on cognitive engagement capabilities.
	c : Job characteristics will have a direct positive effect on individual engagement outcomes.
H8	The job characteristics will have a positive effect on POS
H9	a: Gender will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
	b: Gender will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
H10	a: Age group will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
	b: Age group will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
H11	a: Academic lecturer level will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
	b: Academic lecturer level will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.
H12	a: Group of Eight universities will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.
	b: Group of Eight universities will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.

6.4 Properties of Higher Order Constructs

It was hypothesised (Table 6-5) that the various measures used in this study (except for Job Characteristics and POS) represent three engagement dimensions; emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes (see section 5.3.1 through a shared underlying variance. This section will analyse each of the hypothesised common underlying constructs, as indicated through the existence of characteristics of higher order constructs. In testing for the properties of common underlying constructs, higher order CFA was used (details of which are outlined in section 5.5.6).

As outlined in Chapter 5, the analysis of each of the potential higher order constructs incorporates three stages; simple model, comparison model and alpha weighted model. Appendix A2 provides the full detailed analysis of each of these stages; however, the alpha weighted model is reported here with the other stages used as comparisons. The benefit of this approach is that the alpha weighted model would be expected to have a better fit with the data because this technique requires the calculation of the regression coefficients (λ) and the error variances (θ) for each of the item bundles (the measurement bundles) using the available measurement information (Hair et al. 2006; Politis 2001, 2002). The alpha weighted model is termed as such because of the use of Cronbach alpha in the calculations of the regression coefficients (λ) and the error variances (θ). This will assist in differentiating the methods used because in a later stage of analysis the maximised reliability method is used on the full model (section 6.6.1).

The higher order constructs are calculated using the calibration sample and then verified with the validation sample. The combination of measurement bundles is said to have the characteristics of higher order constructs: the emotional and cognitive engagement capabilities and the individual engagement outcomes. Before beginning the testing, each of the measures was calculated as a mean score and within the testing for constructs each bundled measure was treated as an item. These were assessed for inter-item consistency and relationship with the other using a standard Cronbach alpha test; these results are presented in Table 6-6. It is evident that each of the measures together have inter-item consistency with Cronbach alpha levels larger than the lowest limit of 0.6 (Hair et al. 2006). This is also consistent with the expectation that these constructs would be highly correlated that has been hypothesised in Table 6-5 which demonstrates that the constructs as items bundles act as a scale. This provides further theoretical and empirical justification for proceeding to the next step of joining and testing of these measures in a higher order CFA. Furthermore, the Pearson's correlation coefficient demonstrates that the potential higher order constructs are adequately different from the other, exhibiting discriminant validity.

Table 6-6 Descriptive Statistics for Higher Order Constructs

	Calibration Sample					Validation Sample				
	Mean	SD	α	1	2	Mean	SD	α	1	2
1. Emotional Engagement Capabilities	5.29	.72	.692			5.23	.79	.741		
2. Cognitive Engagement Capabilities	5.22	.82	.804	.55**		5.29	.78	.777	.48**	
3. Individual Engagement Outcomes	3.87	.85	796	.63**	.41**	3.84	.81	.788	.67**	.43**

NOTE: ** significant at p<0.01; α corresponds to calculation of Cronbach Alpha.

To test whether the model fits the data the following fit indices will be used as discussed in Chapter 5. Chi square (χ^2), degrees of freedom (df), significance value (p), normed chi square

(χ^2/df), root mean square (RMR), root mean square of approximation (RMSEA), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), Tucker and Lewis index (TLI), and the comparative fit index (CFI). The acceptable fits for these indices are provided in Table 6-7.

Table 6-7 Model Fit Indices – Acceptable Fit

Statistical Test	Acceptable Fit
Normed Chi Square χ^2/df, p>0.05	Less than or equal to 2
RMR	Less than 0.05 good fit
	Between 0.05 -0.1 moderate fit
RMSEA	Less than 0.05 good fit
	Between 0.05 -0.1 moderate fit
GFI	Greater than 0.9 indicates good fit
AGFI	Greater than 0.9 indicates good fit
TLI	Greater than 0.9 indicates good fit
CFI	Greater than 0.9 indicates good fit

The results of the higher order CFA will report the results and subsequent iterations of the calibration sample models. The calibration sample models will be fit to the sample with the required changes, and then the same model will be fit onto the validation sample. The calibration and validation sample results will be reported for each of the higher order CFA tested: emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes.

6.4.1   Testing the Emotional Engagement Capabilities

Emotional engagement capabilities were hypothesised to have the properties of a higher order construct consisting of the measures of; vigour, availability, psychological resources and meaningfulness (H1). The measure of psychological safety was originally part of this hypothesis but has subsequently been deleted from further analysis due to poor inter-item reliability (see section 6.2).

The alpha weighted model provided for the calculation of λ and θ for each of the measures using equations one and two presented in Chapter 5 these were then fixed onto the model. The first model did not fit the data well ($\chi^2_{\text{calibration}}$ = 28.035, df=2, p=0.000) the fit indices also indicate poor fit, RMR= 0.068, RMSEA=0.198, GFI=0.961, AGFI=0.806, TLI=0.649 and GFI= 0.883 (Model presented in Appendix A2). Therefore the residual variances on meaningfulness and vigour were co-varied to increase model fit. As the relationship between these two variables has not been established or tested previously in the research literature and due to the exploratory nature of this research it was warranted as acceptable to co-vary these two. The standardised model results are presented in Figure 6-1. The correlation between the two is r=0.5 which suggests a strong interaction. The fit indices indicate that the model nearlly fits $\chi^2_{\text{calibration}}$= 3.964 (1), p=.046. The normed χ^2 (χ^2/df= 3.964) is above the required 2, this suggests that there may be

issues with the non-normality in the sample. The multivariate kurtosis (Mardia's coefficient) value is 15.846, which suggests severe non-normality (Holmes- Smith et al. 2006). To correct for non normal distribution, Bollen-Stein bootstrapping correction was used. For the corrected model Bollen-Stein p=0.54, therefore once the model had been corrected for non-normality the model fits the data well. Consistency was found between each of the models, simple, comparison and the advanced alpha model (See Appendix A2 for the full calculations of each of the models).

All the measures within the model except meaningfulness, meet the required minimum 0.5 for their regression weight on the higher order construct. Meaningfulness, when co-varied with vigour is not making a significant contribution to the higher order factor. This construct was kept within the model, because the viability and robustness of the test may be minimised with having only three predictors. This will be followed up in the validation sample.
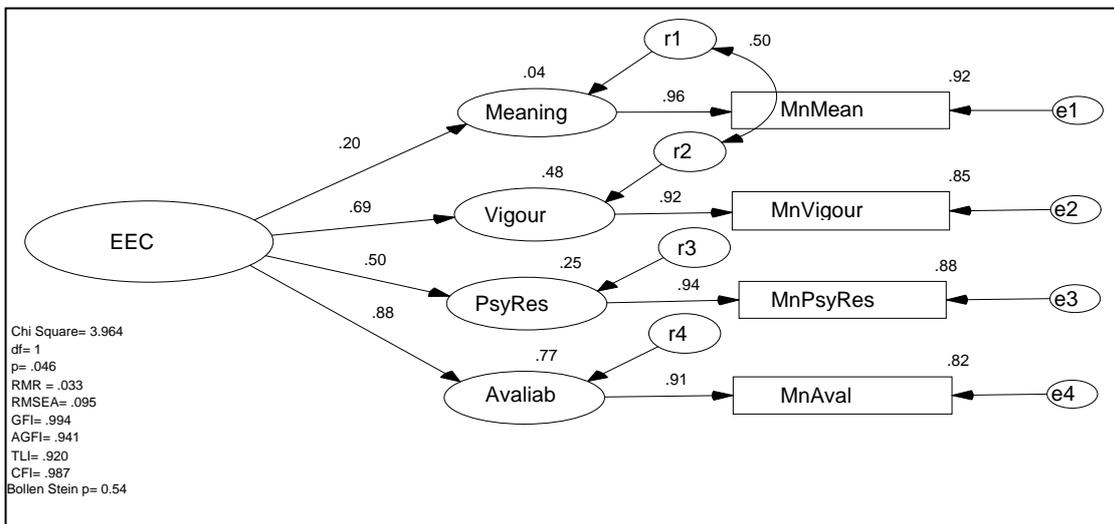
Figure 6-1 EEC Alpha Weighted Model- Calibration Sample

6.4.1.1 *Emotional Engagement Capabilities – Validation Sample*

In comparison, when the validation sample was fitted on to the calibration model, the model overfit $\chi^2_{\text{validation}}$ = 0.160 (1), p=.69. The normed χ^2 demonstrated overfit; the normed χ^2 value needs to be greater than 1 (Holmes et al. 2006). The co-varying of the residual variances was removed to attempt to assist model fit in this sample, the results indicated that the model did not fit, $\chi^2_{\text{validation}}$ = 10.17 (2), p=.006, the resulting model is presented in Figure 6-2. Similarly to the calibration sample the validation sample was checked for non-normality, the multivariate kurtosis = 9.112 suggesting moderate non – normality. The Bollen Stein correction was used to correct for non normality on this model the result was p=0.046 which suggests near significance when correcting for non normality. The regression coefficients each are strong and significant

contributors to the higher order construct of emotional engagement capabilities all above the required 0.50, including meaningfulness which in the calibration sample was not significant.
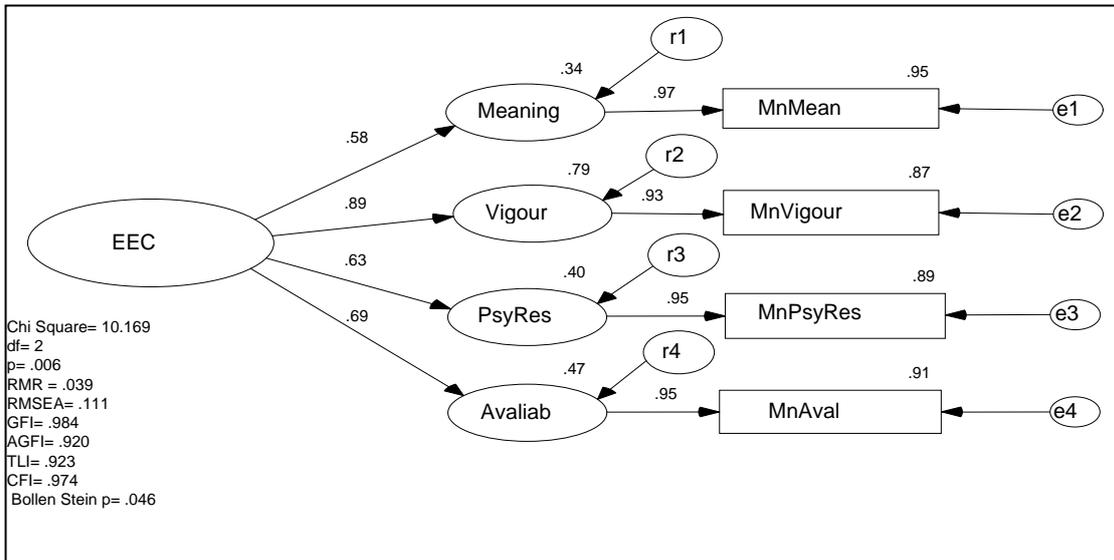
Figure 6-2 EEC Alpha Weighted Model – Validation Sample

Overall, there were conflicting results regarding the presence of a common underlying emotional engagement capability construct. In the calibration alpha weighted model there was support for the properties of a higher order construct that is represented by the measures of vigour, psychological resources and availability, with meaningfulness not acting as a significantly predictor. In the validation sample the model was accepted, based on corrections for non normality. The Cronbach alpha for the constructs (Table 6-6) suggested that together each of the variables have inter-item consistency and in both samples the regression coefficients indicated strong support for the properties of a higher order construct. Meaningfulness was retained in the calibration model given the significance of the relationship in the validation sample. Therefore hypothesis 1 is supported with the calibration sample and in the validation sample. Given the support for the hypothesis, the existence of a common underlying construct (emotional engagement capabilities) means this model will be used within the full model testing.

6.4.2 Testing the Cognitive Engagement Capabilities

The measures of intrinsic motivation, job involvement, dedication, attention and absorption were hypothesized to have the characteristics of a higher order construct: cognitive engagement capabilities (H2). Using the alpha weighted model this section presents the calibration sample results then fit that model onto the validation sample. Each of the iterations in the process is presented in Appendix A2.

Using all the available information by fixing the regression coefficient (λ) and the error variance (θ) within the model as described by Munck (1979) (see discussion in Chapter 5 and in section 6.4). Initially the model did not hold $\chi^2_{calibration}$=61.866, df=5, p=0.000 (see Appendix A2), with adequate theoretical support and the modification indices indicated that the residual variance of job involvement and attention should be co-varied. Although not tested specifically in any of the previous research, the questions have some similarities, for instance: Job involvement (Most of my interests are centred on my job) and attention (I spend a lot of time thinking about my work). The major difference exists in the focus of the questions. Job involvement focuses on the job and attention on the work. This presents justification for the co-varying of the two.

The resulting model found that as a higher order construct the model held as presented in Figure 6-3, ($\chi^2_{calibration}$= 12.357, df=4 p=0.015) when controlling for non normal distribution using Bollen-Stein bootstrapping, p=0.184 (multivariate kurtosis = 11.735). The fit indices were within the satisfying range suggesting a good fit with the data; the RMSEA suggested a moderate fit with the data. These model results were consistent across the simple and comparison models (Appendix A2). The results support each of the constructs as strong predictors for a common underlying construct: cognitive engagement capabilities.
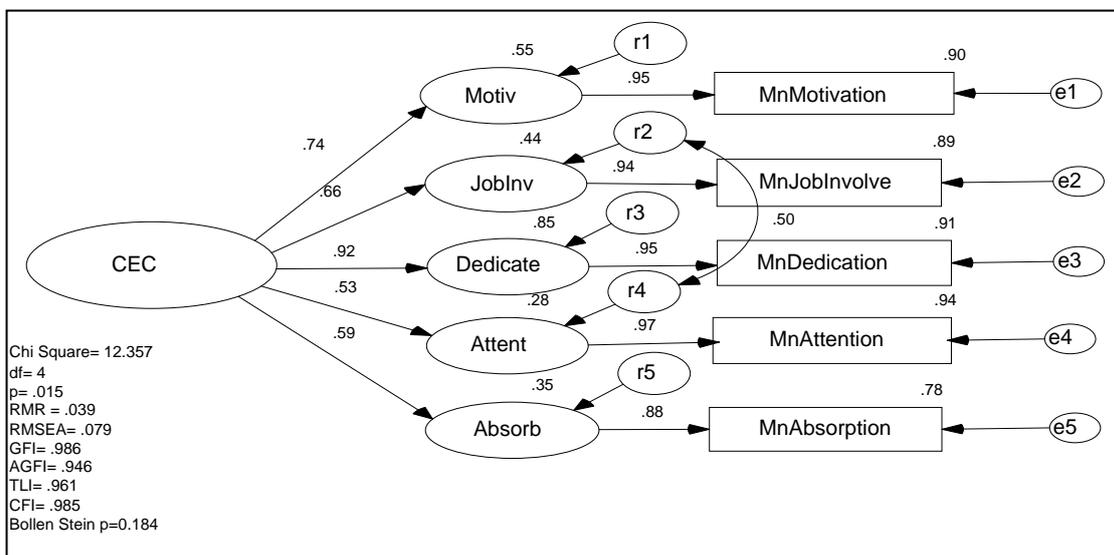
Figure 6-3 CEC Alpha Weighted Model- Calibration Sample

6.4.2.1 Cognitive Engagement Capabilities – Validation Sample

To assess whether model fit is due to chance, the model was fit to the validation sample. The λ and θ were re-calculated based on the validation sample. The results indicated that model fit is not due to chance and the validation sample fit the model as developed in the calibration stage ($\chi^2_{validation}$= 6.636, df=4, p=0.156). The fit indices (Figure 6-4) indicate a better fit than the calibration sample with all fit indices indicating good fit and correction for non normal

distribution (Bollen-Stein) was not necessary. Each of the constructs represented strong predictors of the cognitive engagement capabilities, with dedication and intrinsic motivation being the strongest predictors. This reinforced the presence of a shared variance indicating a common underlying construct. All regression coefficients were above the required 0.50 level.
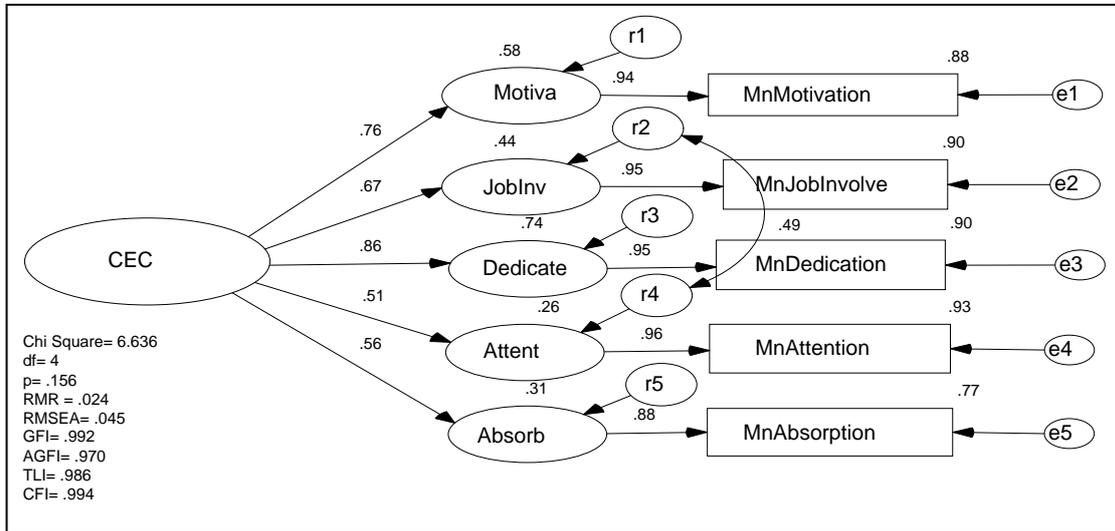
Figure 6-4 CEC Alpha Weighted Model – Validation Sample

The results provide that motivation, job involvement, dedication, attention and absorption together have the characteristics of a higher order construct – cognitive engagement capabilities. This was determined based on the calibration sample and then verified on the validation sample. Hypothesis two (H2) is supported and retained.

6.4.3   Testing the Individual Engagement Outcomes

The individual engagement outcomes are indicated by: affective commitment, job satisfaction, disengagement, exhaustion and intention to quit. It was hypothesized that together each of these various engagement outcome measures would together represent a common underlying construct – individual engagement outcomes (H3).

Using the alpha weighted approach λ and θ were calculated for fixing onto the model (Appendix A2). The variables of intention to quit, disengagement and exhaustion were reverse scored to indicate their positive derivative. In the first step, the model indicated a poor fit between the data and the model as demonstrated by the fit indices $\chi^2_{calibration}$ = 50.579, df=5, p=0.000, RMR =0.073, RMSEA=0.166, GFI=0.945, AGFI=0.836, TLI=0.868, CFI=0.934. (Detailed analysis provided in Appendix A2). With theoretical justification and consultation of the modification indices the following residual error terms were co-varied; commitment and intention to quit (reversed) and disengagement (reversed) and intention to quit (reversed). Past research has shown that affective commitment and intention to quit (and its positive derivative – intention to

remain) has been shown to be highly correlated in the literature (Gaiduk, Gaiduk & Fields 2009; Iverson & Buttigieg 1999; Ko, Price & Mueller 1997). Additionally, due to the minimal testing done on the disengagement scale of the OLB-I, there is no research that explores the relationship between disengagement and intention to quit. Intuitively and due to the exploratory nature of this research this co-varying of error terms was deemed appropriate – suggesting a relationship surrounding being disengaged at work being related to the intention to quit.

The resulting model is presented in Figure 6-5, the fit indices indicate a moderate to good fit. The χ^2 value was slighted inflated ($\chi^2_{calibration}$ = 11.658, df=3, p=0.019), as is the normed χ^2, the multivariate kurtosis equalled 7.462 suggesting moderate non normality. To correct for non-normal distribution Bollen Stein correction was used, the result was acceptance of the current model fit with a Bollen Stein corrected p value of 0.137.
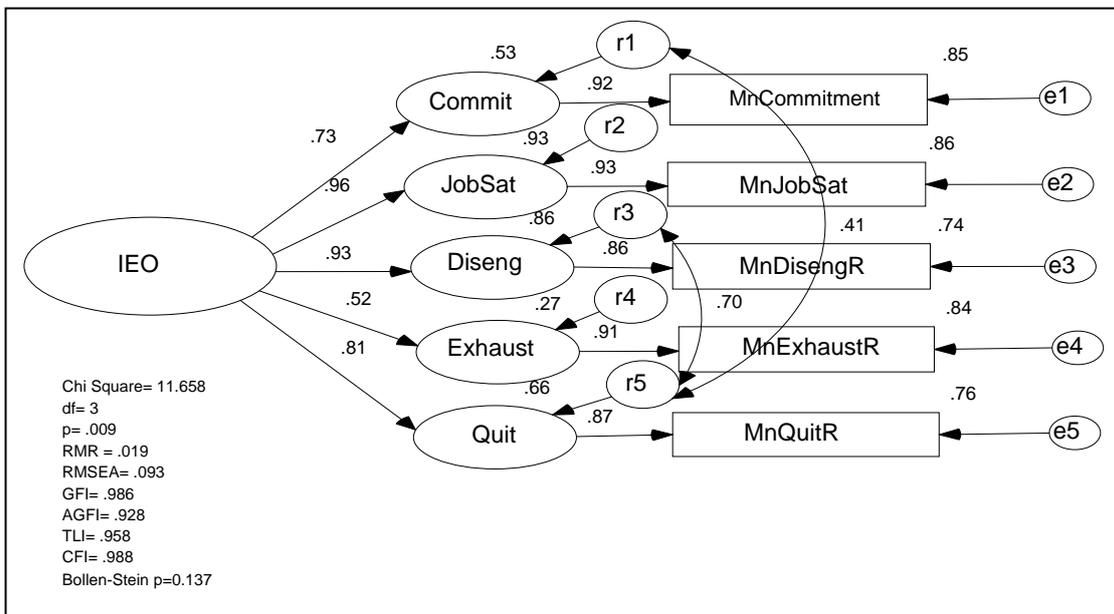
Figure 6-5 IEO Alpha Weighted Model – Calibration Sample

6.4.3.1 *Individual Engagement Outcomes – Validation Sample*

To verify that the results found in the calibration were not due to chance the same model was fitted to the validation sample using the same processes. The resulting χ^2 and normed χ^2 indicated that there was an over fit of the model to the data ($\chi^2_{validation}$ = 0.937, df=3, p=0.817). (See Appendix A2 for full detailed model). Due to the over fit the co-varying of disengagement and intention to quit was removed due to a significant drop in the correlation coefficient between the two (r=.1) in this sample. The resulting model is presented in Figure 6-6 and the fit indices demonstrate a good fit of the data to the model ($\chi^2_{validation}$ = 6.051, df=4, p=0.195). This result is reflected in the good fit statistics.
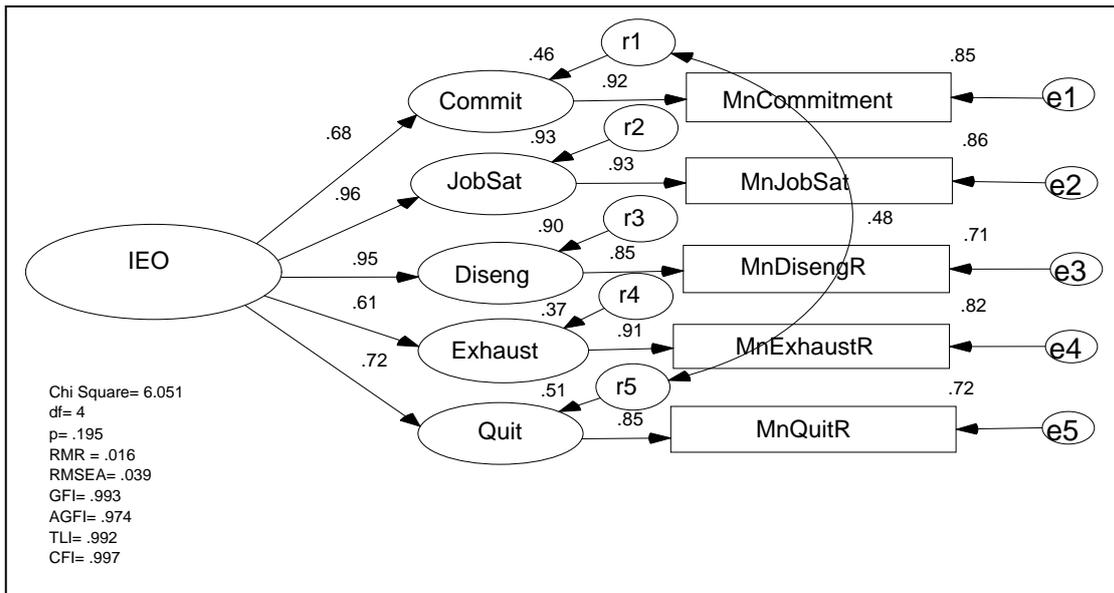
Figure 6-6 IEO Alpha Weighted Model – Validation Sample

The higher order CFA indicated that the measures of affective commitment, job satisfaction, disengagement (reversed), exhaustion (reversed) and intention to quit (reversed) have the properties of a higher order constructs – individual engagement outcomes. Therefore the hypothesis 3 (H3) can be retained; the measures have a shared variance which indicates the properties of a higher order construct.

6.4.4   Construct Summary

The first three hypotheses (Table 6-5) proposed for this thesis were all retained and accepted. Each of the three common underlying constructs were defined as the; emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes. Each of these engagement dimensions were defined in terms of having the characteristics of a higher order construct representing various pre-established constructs that have a shared variance. The results of the higher order CFA support this hypothesis. The measures used have a shared variance representing a common underlying construct and this was reinforced with both the calibration and validation sample. The results provide additional support for the theoretical arguments proposed in Chapter 4; the results support a common underlying construct at the Cronbach alpha level and through testing in a higher order CFA. Given that the groups of variables had the properties representative of a higher order constructs then these can be tested within the regression and structural models.

6.5   Hierarchical Regression Results

Research question 3 (RQ3), was to determine to what extent the emotional and cognitive engagement dimensions explain additional variation in the individual engagement outcomes

after university structure, demographics and the organisational characteristics variables are controlled for. Given that each of the proposed common underlying constructs held (Section 6.4) these could be used within a hierarchical regression to address RQ3. The reason for using a hierarchical regression was to control the order of variables entering the regression, this is especially necessary in this research study because of the argued interactions between the dimensions (Figure 6-7). According to Pedhazur (1997) one of the main reasons for using hierarchical regression is to investigate the impact of the independent variable on the dependant variable after having controlled for the effects of other variables. In addition, this method addressed RQ3, by determining the additional variation that the two engagement capability dimensions have on the individual engagement outcomes when controlling for the variation due to the other constructs. The results presented in this section are an overview and Appendix A3 provides the full detailed analysis of the results for the hierarchical regression. The hierarchical regression was first tested on the calibration sample and then on the validation sample. This was to provide a comparison between the two independent samples to ensure consistency and robustness of the results. Issues of multicollinearity can occur using regression analyses; the variance inflation factors (VIF) were checked and were within the required thresholds (Gujarati 2003) to suggest this is not an issue in these regression equations (VIF and threshold are reported in Appendix A3).

Contextual Variables	**Organisational Characteristics**	**Individual Engagement Capabilities**	**Engagement Outcomes**
Age Sex Lecturer Level Group of 8	POS JobCH	Emotional Engagement Capabilities Cognitive Engagement Capabilities	Individual Engagement Outcomes
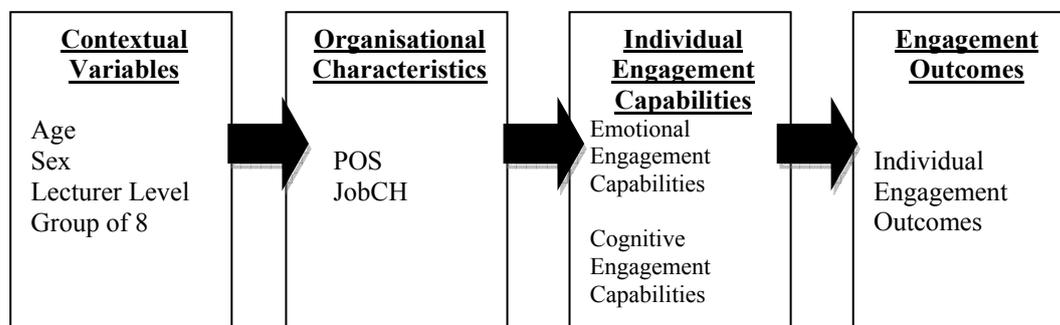
Figure 6-7 Variable Relationships for Hierarchical Regression

In addition to the engagement dimensions the organisational characteristics are those elements in which the management of the organisation plays a role in influencing and it is measured by two variables: POS and JobCH. The contextual variables consist of personal variables (demographics), those that the individual has no control and these are age (over 55 years) and sex. It is believed that those academics over 55 years of age would significantly differ on the measured outcomes (see Chapter 3 and Chapter 4). The other contextual variables are the structural organisation elements, this consists of lecturer classification (the higher the academic level the more likely differences will exist) and whether the academic belongs to the Group of 8 universities or not. These structural elements are influenced by the individual academic. Each of

the organisational characteristics and the contextual variables has been detailed in Chapters 3 and 4. The inter-relationships between all of these elements were described in Chapter 4 (see section 4.2 and the proposed relationship between each are detailed in Figure 6-7). When controlling for the contextual variables and the organisational characteristics, the individual engagement capabilities would be significant predictors on the individual engagement outcomes and would contribute additional variation. The correlation matrix for these variables in the calibration sample is presented in Table 6-8.

Table 6-8 Correlations of Variables Tested in Hierarchical Regression (Calibration Sample)

	1	2	3	4	5	6	7	8	9
1.Gender	1.0								
2. 55 years and over	-.13*	1.0							
3. Group of 8	-.02	-.07	1.0						
4. Higher Lecturer Level	-.21**	.14**	.13*	1.0					
5.POS	-.04	-.05	.09	.04	1.0				
6. JobCH	.04	-.01	.15**	.08	.51**	1.0			
7. EEC	-.18**	.09	.09	.13*	.43**	.52**	1.0		
8. CEC	-.06	.05	.12	.19**	.22**	.50**	.52**	1.0	
9. IEO	-.05	.07	.12	.09	.63**	.61**	.64**	.41**	1.0

* Significant at p<0.05, ** significant at p<0.01.

For the hierarchical regression the common underlying constructs were calculated as a single variable, where each of the measures (ie affective commitment) was summed and averaged to be treated as an item. Each of the measures held up at the alpha level (Table 6-2 and Table 6-6) and they are all pre-established and represented the measured common underlying construct (Section 6.4). Then each item (ie. average of affective commitment) was bundled and averaged with the other items within the common construct. For example, the emotional engagement capabilities were the composite of: meaningfulness, vigour, psychological capabilities and availability. The means, standard deviation and correlations for both the calibration and validation samples provide for the composite higher order constructs in Table 6-6. Discriminant validity is evident with the results presenting each of the common underlying constructs as reflecting distinctiveness of each factor from the others. The common underlying constructs each capture something unique of the other common constructs.

The summary hierarchical model as presented (Table 6-9), using the calibration sample, produced an multiple R = 0.78 (R²=0 .608), whilst controlling for the contextual variables and the organisational characteristics the model was significant, $F_{(8,323)}=62.66$, p=.000. Emotional engagement capabilities was the strongest positive predictor $\beta=.33$, $t(332_{Calibration})=7.2$, p=.000. Cognitive engagement capabilities was not a significant predictor of individual engagement outcomes as predicted, $\beta=.04$, $t(332_{Calibration})= .82$, p=.41. Further significance of the model is

reflected in ΔR², the model final model accounted for 60.1% (59.8% adjusted) of the variation in the individual engagement outcomes was accounted for. As expected the organisational characteristics remained significant in the final stage because they have important hypothesised antecedent influences on the individual engagement outcomes. The squared semi partial correlations (sr²) indicate that in the final step, the emotional engagement capabilities accounted for a further, 6.3% (sr²=0.251²) of the explained variation in the individual engagement outcomes. Whilst of the organisational characteristics, POS accounted for 9.8% (sr²=0.302²) and JobCH 3% (sr²=0.173²).

Table 6-9 Hierarchical Regression: Emotional and Cognitive Engagement Capabilities (Individual Engagement Outcomes)

		INDIVIDUAL ENGAGEMENT CAPABILITIES									
		Calibration Sample					Validation Sample				
		B	SE	Beta â	AdjR²	ÄR²		B	SE	Beta â	AdjR²	ÄR²
Step 1					.012	.024					.039	.051
	(Constant)	3.81	.16					3.48	.16			
	Sex	-.04	.10	-.02				.14	.09	.09		
	55years +	.14	.11	.07				.15	.140	.08		
	HighLect	.14	.11	.07				.18	.10	.10		
	Go8	.20	.10	.10				.14	.09	.09**		
Step 2					.521	.506					.488	.447
	(Constant)	.86	.21					1.29	.19			
	Sex	-.05	.07	-.03				.05	.07	.03		
	55years +	.19	.08	.10*				.11	.08	.06		
	HighLect	.05	.08	.03				.00	.08	.00		
	Go8	.03	.07	.01				.11	.08	.06		
	POS	.29	.03	.43***				.26	.03	.43***		
	JobCH	.37	.04	.40***				.29	.04	.36***		
Step 3					.598	.079					.625	.137
	(Constant)	-.59	.27					-.50	.247			
	Sex	.05	.06	.03				.10	.06	.06		
	55years +	.14	.07	.07				.02	.07	.01		
	HighLect	.01	.07	.00				-.10	.07	-.05		
	Go8	.02	.07	.01				.07	.06	.04		
	POS	.24	.03	.36***				.19	.03	.32***		
	JobCH	.22	.05	.24***				.18	.03	.22***		
	EEC	.40	.06	.33***				.41	.05	.40***		
	CEC	.04	.04	.04				.10	.04	.10*		

Note: EEC = emotional engagement capabilities, CEC = cognitive engagement capabilities. Dependant Variable - Individual Engagement Capabilities. B= Unstandardised coefficients, SE = standard error of B, Beta β = standardised coefficients, AdjR² = Adjusted R squared, ΔR² = change in R squared. * p<.05, **p< .01, *** p<.001.

The correlations matrix for the variables in the validation sample is presented in Table 6-10. The hierarchical regression using the validation sample verifies the calibration sample results and reinforces the engagement model with a multiple *R*=0.796 (*R²*= 0.63), F (8,323)= 69.98, p=.000. Again emotional engagement capabilities was a strong predictor of the individual engagement outcomes, β=.40, t(332$_{Validation}$) =9.01, p=.000. In the validation sample, cognitive engagement capabilities was also a significant predictor of individual engagement outcomes, β=.10, t (332$_{Validation}$)= 2.36, p=.019. The *R²* change reflects a better model with the variable introduced

in the additional steps, the final model accounting for 63% (62.5% adjusted) of the variation in the individual engagement outcomes. Using the validation sample the organisational characteristics remained significant with the introduction of the individual engagement capabilities (this was consistent within both of the samples). In the final step the emotional engagement capabilities accounted for 9.2% ($sr^2=0.303^2$) of the explained variation in the dependant variable, POS accounted for 6.8% ($sr^2=0.26^2$), JobCH accounted for 3% ($sr^2=0.172^2$) and the cognitive engagement capabilities accounted for 0.6% ($sr^2=0.079^2$).

Table 6-10 Correlation of Variables Tested in Hierarchical Regression (Validation Sample)

	1	2	3	4	5	6	7	8	9
1.Gender	1.0								
2. 55 years and over	-.32**	1.0							
3. Group of 8	-.04	.09	1.0						
4. Higher Lecturer Level	-.20**	.26**	.10	1.0					
5.POS	.00	.02	.13*	.10	1.0				
6. JobCH	.07	.09	.15**	.16**	.49**	1.0			
7. EEC	-.13*	.21**	.14*	.24**	.45**	.45**	1.0		
8. CEC	.06	.09	.13*	.15*	.20**	.40**	.48**	1.0	
9. IEO	.03	.10	.17**	.12*	.62**	.59**	.67**	.44**	1.0

* Significant at $p<0.05$, ** significant at $p<0.01$.

The results between both of the samples were slightly different. Firstly the significance of the contextual demographic variables varied between samples, this is evident in their zero order correlations. When introducing the organisational characteristics and the individual engagement capabilities that variation was controlled for, the effects altered. In the final step of both regressions the contextual variables were not significantly impacting on the dependant variable. The differences between the samples could be due to sample fluctuations.

As expected in both samples, POS and JobCH were both significant predictors in both steps 2 and 3. This give support for Hypothesis 6c and 7c in which each of the organisational will have a direct positive effect on the individual engagement outcomes. The effect of both of the variables differed between the samples, POS in the final step in the calibration sample whereas in the emotional engagement capabilities accounted for the greater amount of variation in the validation sample. This could be the result of interplay between the variables. In the calibration sample, POS could be having a greater direct impact on the individual engagement outcomes and in the validation sample some of this effect could be accounted for due to other relationships within the model. The structural equation model in the next stage of this research assists in clarifying some of these relationships.

The most significant difference between the samples was the effect of the cognitive engagement capabilities on the individual engagement outcomes. The calibration samples did not find cognitive engagement capabilities as a significant predictor as hypothesized, whereas the validation sample did. The zero order correlation reveal a strong relationship in both of the samples between the cognitive engagement capabilities and individual engagement outcomes ($r=0.41$ and $r=0.44$, in both samples respectively). It could be argued that the effect of cognitive engagement capabilities on individual engagement outcomes in the calibration sample could be accounted for by other relationships within the model such as the impact of the emotional engagement capabilities (This will be followed up in the SEM, hypothesis 4d). These results provide support for hypothesis 5, in which emotional engagement capabilities and cognitive engagement capabilities would significantly impact on the individual engagement outcomes. Most of the hypothesized relationships held, except the impacts of the control variables which were anticipated to have a significant impact on the dimensions in the model and this needed to be controlled for. The results from the hierarchical regression warranted the further testing of the model in a full structural equation model.

6.6   Measurement Model Results

The final stage of data analysis is the testing of the hypothesized engagement model in a full measurement model using SEM. The fourth research question (RQ4) focused on identifying the pathways of engagement in Australian business academics using emotional, cognitive and outcome dimensions. SEM is one such approach that can be used to identify these pathways. This stage of the research is viable because the hypothesized higher order (common underlying) constructs held (section 6.4) and some of the initial model relationships were supported in a hierarchical regression (section 6.5). The hierarchical regression provided support for the causal effects of the independent variables (individual engagement capabilities) on the dependant variable (individual engagement outcomes) whilst controlling for variation due the control variables (organisational characteristics, demographics and structural organisational variables).

The full hypothesised model as presented in Chapter 5 (Figure 5.2) identified the testable hypotheses for this stage; Table 6-5 provides a summary of these hypotheses. The SEM is approached using a method that maximises the reliability of the factors in the model. The full model is assessed using item bundles of the common underlying constructs; where each of the measures used to represent the potential higher order construct were treated as an item. This is an appropriate approach when there is a lot of information and items to consider within the model (Hair et al. 2006). As represented in Table 6-6, each of the common underlying constructs held at the Cronbach alpha level indicating that there was inter item consistency (see also section 5.6.6.2 for discussion). This provides support the treatment of the common underlying constructs

as item bundles. The full model was assessed using the maximised reliability method using composite reliability (r_c) and congeneric factors (Munck 1979; Politis 2001, 2002), this allowed the fixing of λ and θ on the full model to enhance model fit (section 5.6.6.2). This was deemed an appropriate approach because it uses all the available information within the model. During this stage of the analysis the model was developed and re specified on the calibration sample, then once a sufficient model fit was established then the model was fit onto the second sample. The intention was to develop a model that is more robust.

6.6.1   Maximised Reliability Method using Composite Reliability

This section begins with model development based on the calibration sample, using the maximised reliability method. This method requires a number of steps; these steps are detailed in Appendix A4. As consistent with Munck (1979) and Politis (2001, 2002), the λ and the θ were calculated using the composite reliability (r_c). The r_c was calculated using the factor score regression weights. The λ and θ were calculated for each of the engagement dimensions using the calibration sample, based on congeneric factors (EECconger, CECconger, IEOconger). The summary calculations are presented in Table 6-11. The organisational characteristics also form part of the hypothesized full model used the alpha weighted approach (where λ and θ are fixed on the model based on calculations using Cronbach alpha α, these calculations are also presented in Appendix A4). The measures of POS and JobCH are well established measures within the literature and they both held at the Cronbach alpha level (Table 6-4). It was therefore deemed appropriate to consider these measures at their alpha weighting level.

Table 6-11 Summary Table using Maximised Reliability (Calibration Sample)

Composite Variable	Composite Mean	Composite SD	Composite Variance	Composite Reliability	λ	θ
EECconger	5.33	0.82	0.67	0.723	0.698	0.187
CECconger	5.35	0.91	0.84	0.851	0.843	0.124
IEOconger	4.06	0.84	0.71	0.898	0.709	0.067

N=332. λ – regression coefficient using composite reliability, θ – error variance using composite reliability.

The engagement path model was conceptualised in Chapter 2 and 4, then operationalised into the hypothesized model in Chapter 4. Using the maximised reliability composite measures Table 6-12 presents a zero order correlation table of all the measured variables to be tested within the model, including the congeneric factors. The table also presents the zero order correlations based on the higher order item bundles used in the hierarchical regression (see Table 6-6). The table demonstrates consistency between the two types of higher order constructs the significant paths are replicated using both item bundles and congeneric factors. This is a key dimension that could impact model fit and model mis-specification (Holmes- Smith et al. 2006). The correlations on the bottom half of the table represent those using the congeneric factors, between each of the

engagement dimensions (EEC, CEC and IEO) there is significant positive results. In addition both the organisational characteristics (POS and JobCH) are also both significantly correlated with each of the congeneric engagement dimensions, adding support for the hypothesized antecedent relationship. Overall the zero order correlations provide support for the interactions between the model dimensions and demonstrated the appropriateness of further testing in a full structural model.

Table 6-12 Correlation Table of Composite Measures and Congeneric Composites of variables in Model (Calibration Sample)

	1	2	3	4	5	6	7	8	9
1.Gender	1.0	-.13*	-.02	-.21**	-.04	.04	-.18**	-.06	-.05
2. 55 years and over	-.13*	1.0	-.07	.14**	-.05	-.01	.09	.05	.07
3. Group of 8	-.02	-.07	1.0	.13*	.09	.15**	.09	.12	.12
4. Higher Lecturer Level	-.21**	.14**	.13*	1.0	.04	.08	.13*	.19**	.09
5.POS	-.04	-.05	.09	.40	1.0	.51**	.43**	.22**	.63**
6. JobCH	.04	-.01	.15**	.08	.51**	1.0	.52**	.50**	.61**
7. EEC	-.15**	.06	.02	.04	.33**	.42**	1.0	.52**	.64**
8. CEC	-.09	.07	.09	.19**	.29**	.54**	.43**	1.0	.41**
9. IEO	-.05	.10	.12*	.10	.56**	.65**	.52**	.64**	1.0

NOTE: The upper diagonal (italics) represents the higher order mean composites correlations. The bottom half of the diagonal represent the congeneric factor correlations using the maximised reliability method. * Significant at p<0.05, ** significant at p<0.01.

As the congeneric engagement dimensions are consistent with the higher order item bundles, the congeneric factors calculations (λ and θ) were fixed onto the emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes in the model using AMOS. The summary model with the congeneric values that was tested in AMOS is presented in Figure 6-8, this is using the values as calculated in Appendix A4 and summarised in Table 6-11.

The results of the first maximised reliability model is presented in Figure 6-9, the results show the standardised regression weights. At first run the model and associated data does not indicate that model fit was sufficient; the model does not adequately fit the data as hypothesised. The significance of χ^2 rejects the model. Table 6-13 presents the fit indices which are used to determine model fit (as detailed previously in 5.6.5.2), the summary fit indices and subsequent acceptable levels were presented earlier in Table 6-7.
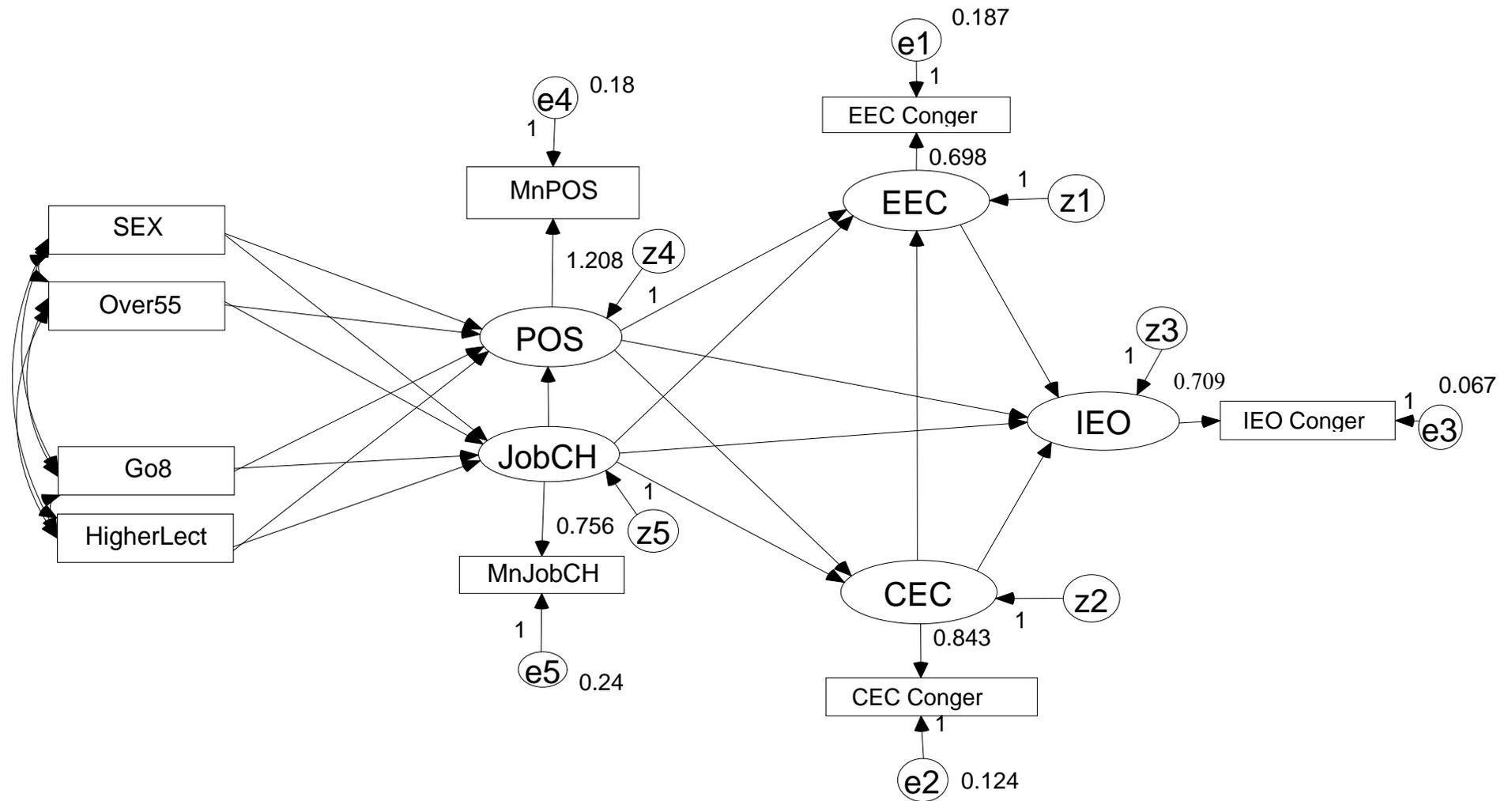
Figure 6-8 Hypothesised Model – Maximised Reliability Model with Congeneric Factor

Table 6-13 Hypothesised Maximised Reliability Measurement Model Fit

χ^2 (12)=30.364, p=0.002	Poor Fit
χ^2/df = 2.53	Poor Fit
GFI = 0.980	Acceptable Fit
AGFI = 0.927	Acceptable Fit
RMR = 0.014	Acceptable Fit
RMSEA = 0.068	Moderate Fit
TLI = 0.919	Acceptable Fit
CFI = 0.973	Acceptable Fit

As consistent with Byrne (2001) and Holmes-Smith et al. (2006), if the model does not sufficiently fit the data, no changes should be made unless the there is theoretical support for changes. Holmes- Smith et al. (2006) suggest a four step approach to understanding specification problems.

- Discriminant validity, ensure the correlations do not exceed 0.8.

- Insignificant structural pathways, if there is literature support remove non-significant pathways

- Consult Standardised Residuals Covariance Matrix. Ensure the values here are lower than 2.0, values over 2.0 may suggest that there is a relationship not specified or a measurement problem.

- Modification Indices. Provides suggestions to increase model fit, but only use the modification indices if there is theoretical support.

There are a number of insignificant structural pathways apparent in the model (Figure 6-9) and those that are significant are represented with an asterisks next to the regression co-efficient (*). Some of the contextual variables have non-significant structural pathways specifically Sex →JobCH, Over55 → JobCH, Sex → POS, Go8→POS and HigherLect → POS. A summary of the paths in the first model based on the calibration sample is presented in Table 6-14. The standardised regression weights, the standard errors, the critical ratios and probability levels are provided for each of the hypothesized paths. Of the hypothesised paths POS→ EEC was not significant (β=.127, p=.204) and JobCH→EEC (β=.294, p=.063). According to Holmes- Smith et al. (2006) the removal of non significant paths will not necessarily increase model fit significantly but the removal of non-essential paths will increase model parsimony.

Table 6-14 Calibration Sample (First Model) – Regression Weights, Standard Errors, Critical Ratios and Probabilities

Hypothesis	Pathway			Beta	SE	CR	P
H4$_A$	EEC	→	IEO	.176	.068	2.919	.004
H4$_B$	CEC	→	IEO	.311	.091	4.231	***
H4$_c$	CEC	→	EEC	.300	.124	2.600	.009
H6$_A$	POS	→	EEC	.127	.099	1.249	.212
H6$_B$	POS	→	CEC	-.212	.082	-2.299	.022
H6$_c$	POS	→	IEO	.210	.072	3.379	***
H7$_A$	JobCH	→	EEC	.294	.161	1.859	.063
H7$_B$	JobCH	→	CEC	.844	.092	8.385	***
H7$_c$	JobCH	→	IEO	.361	.121	3.318	***
H8	JobCH	→	POS	.656	.063	10.245	***
H9$_A$	SEX	→	POS	-.043	.100	-.686	.493
H9$_B$	SEX	→	JobCH	.006	0.126	.104	.917
H10$_A$	Over55	→	POS	-.083	.117	-1.655	.098
H10$_B$	Over55	→	JobCH	.041	.146	.672	.502
H11$_A$	HigherLect	→	POS	-.043	.122	-.845	.398
H11$_B$	HigherLect	→	JobCH	.106	.142	1.713	.087
H12$_A$	Go8	→	POS	-.015	.110	-.291	.771
H12$_B$	Go8	→	JobCH	.314	.131	2.393	.017

NOTE – N=332 calibration sample; *** indicates p<0.001.

Using the justification by Holmes-Smith et al. (2006) some of the non-essential paths were removed. In the next model, the non-significant contextual variable pathways were removed as follows:

Sex→JobCH

Over55→JobCH

Go8→ POS

HigherLect → POS

These relationships had justified theoretical support and were expected to have a direct relationship with the organisational characteristics (POS and JobCH), resulting in an indirect effect on the engagement capabilities and outcomes. The non significant paths were removed from the model. This is consistent with the results from the hierarchical regression (section 6.5) where the contextual variables showed little contribution to the unique variance on the dependant variable. Also the zero order correlations for each of these paths presented in Table 6-12 were also not significant on the organisational characteristics and the engagement dimensions. The non significant organisational characteristics were still included in the model due to their hypothesized direct influence on each of the engagement dimensions. The new version of the model was tested and the results are presented below (Table 6-15).

Congeneric MODEL
Calibration Sample

Chi Square= 30.364
df= 12
p= .002
RMR = .014
RMSEA= .068
GFI= .980
AGFI= .927
TLI= .919
CFI= .973
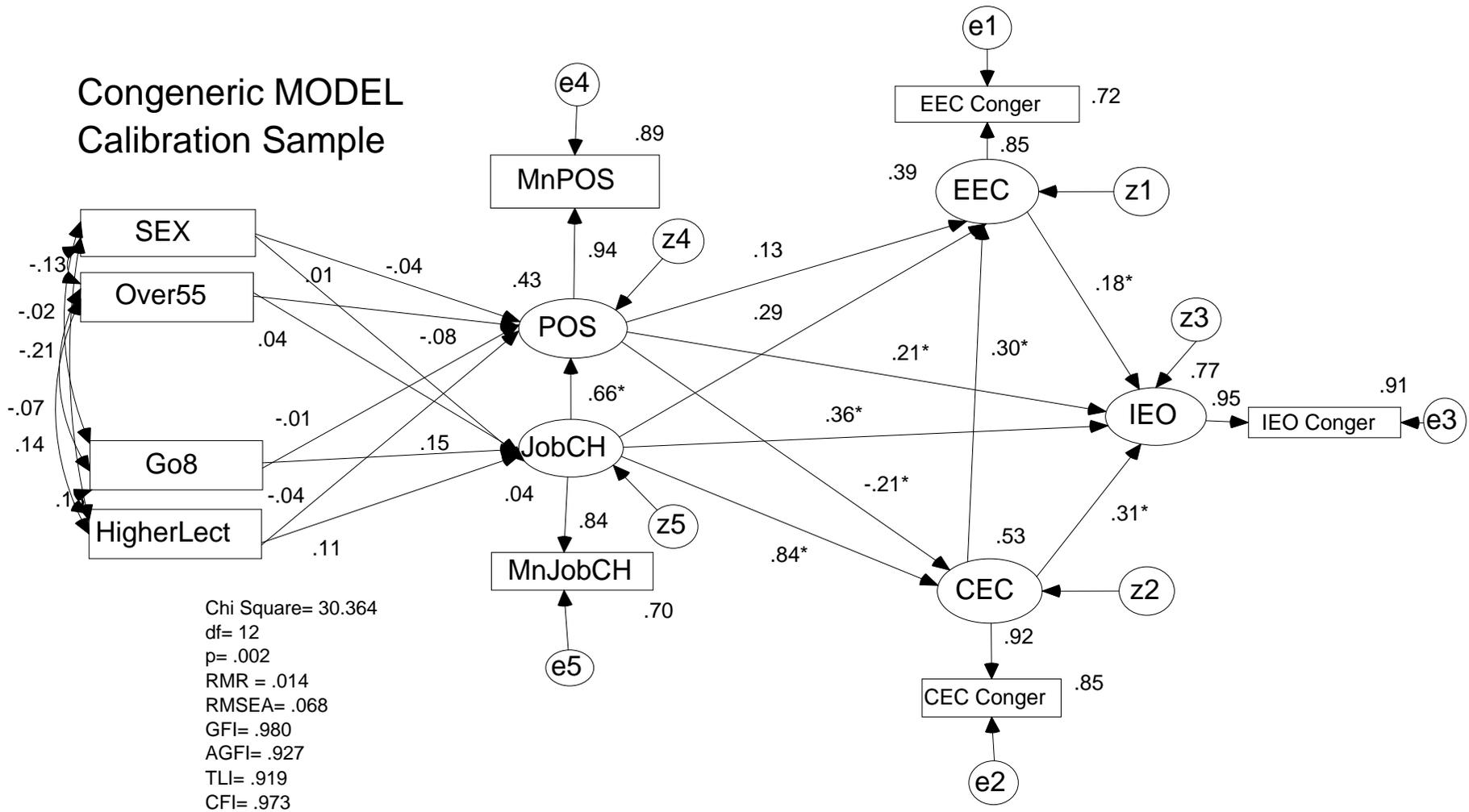
Figure 6-9 Maximised Reliability Measurement Model – Standardised Loading

Table 6-15 Hypothesized Model – Four Contextual Variable Paths Removed

χ^2 (16)=31.683, p=0.011	Poor Fit
χ^2 /df = 1.980	Acceptable Fit
GFI = 0.98	Acceptable Fit
AGFI = 0.943	Acceptable Fit
RMR = 0.015	Acceptable Fit
RMSEA = 0.054	Acceptable Fit
TLI = 0.948	Acceptable Fit
CFI = 0.977	Acceptable Fit

As can be seen the removal of the four non-significant pathways increased model fit, including the χ^2 and associated values (Table 6-15). The fit statistics indicate that there is good model fit: the data fits the model. As consistent with Holmes-Smith et al. (2006) the second model has greater parsimony, this is evident in the AIC values. The AIC in the first model was recorded as 96.346; the subsequent model presented an AIC of 89.683. Kaplan (2009) notes that by rank ordering the models, the one with the lowest AIC is the best fitting. However, the χ^2 value is still providing a poor fit with the data, this is evident in the significant p- value.

The model with the four paths removed is presented in Figure 6-10. This model although presenting a poor fit according to the χ^2 statistic still provided good explanatory power of the variables within this thesis with 77% of the unique variation in the individual engagement outcomes explained by the presented variables. Of the individual engagement capabilities this model found that 39% of the unique variation in the emotional engagement capabilities and 52% in the cognitive engagement capabilities are accounted for by the variables within in this thesis. Table 6-16 presents the regression weights of the structural pathways (beta, β), standard errors, critical ratios and probabilities for the maximised reliability model.

As is evident, some of the hypothesised relationships were not supported. All the hypotheses (Table 6-5) need significance at the 0.05 and critical ratios greater than 1.96 to support the hypothesized relationships. At this stage the hypothesized paths between JobCH→EEC and POS→EEC do not meet these criteria. Consistent with earlier findings (section 6.5 and Table 6-10) the contextual variables do not have significant paths, except between Go8 → JobCH. Overall the model exhibited poor fit using the χ^2 statistic; all other fit indices are demonstrating an acceptable fit.

Table 6-16 Calibration Sample (Four Paths Removed) – Regression Weights, Standard Errors, Critical Ratios and Probabilities

Hypothesis	Pathway			Beta	SE	CR	P
H4$_A$	EEC	→	IEO	.176	.068	2.919	.004
H4$_B$	CEC	→	IEO	.315	.084	4.231	***
H4$_c$	CEC	→	EEC	.298	.114	2.600	.009
H6$_A$	POS	→	EEC	.124	.099	1.249	.212
H6$_B$	POS	→	CEC	-.204	.082	-2.299	.022
H6$_c$	POS	→	IEO	.214	.072	3.379	***
H7$_A$	JobCH	→	EEC	.299	.161	1.859	.063
H7$_B$	JobCH	→	CEC	.836	.100	8.385	***
H7$_c$	JobCH	→	IEO	.354	.121	3.318	***
H8	JobCH	→	POS	.644	.063	10.245	***
H9$_A$	SEX	→	POS	-.034	.100	-.686	.493
H10$_A$	Over55	→	POS	-.081	.117	-1.655	.098
H11$_B$	HigherLect	→	JobCH	.103	.142	1.713	.087
H12$_B$	Go8	→	JobCH	.144	.131	2.393	.017

NOTE – N=332 calibration sample; *** indicates p<0.001.

With the poor fit still remaining on the χ^2 statistics, it was deemed appropriate to reassess the paths and the model. The contextual variable, sex did not add anything to the model. With a non-significant structural path (β = -0.034, p=0.493) on POS, this was subsequently deleted from model. Even though the literature had stated that perceptions of support within organisations varied between the sexes (Rhoades & Eisenberger 2002), the literature support was minimal and not specific to the sample group. Deletion of sex increased the parsimony of the model (AIC = 66.13). The model with the variable sex deleted is presented in Figure 6-11, the fit statistics are provided in Table 6-17 and the path summaries are reported in Table 6-18.

Table 6-17 Hypothesised Model – Gender Removed

χ^2 (12)=18.131, p=0.112	Acceptable Fit
χ^2/df = 1.511	Acceptable Fit
GFI = 0.987	Acceptable Fit
AGFI = 0.96	Acceptable Fit
RMR = 0.012	Acceptable Fit
RMSEA = 0.039	Acceptable Fit
TLI = 0.978	Acceptable Fit
CFI = 0.991	Acceptable Fit

Congeneric MODEL
Calibration Sample

Chi Square= 31.683
df= 16
p= .011
RMR = .015
RMSEA= .054
GFI= .980
AGFI= .943
TLI= .948
CFI= .977
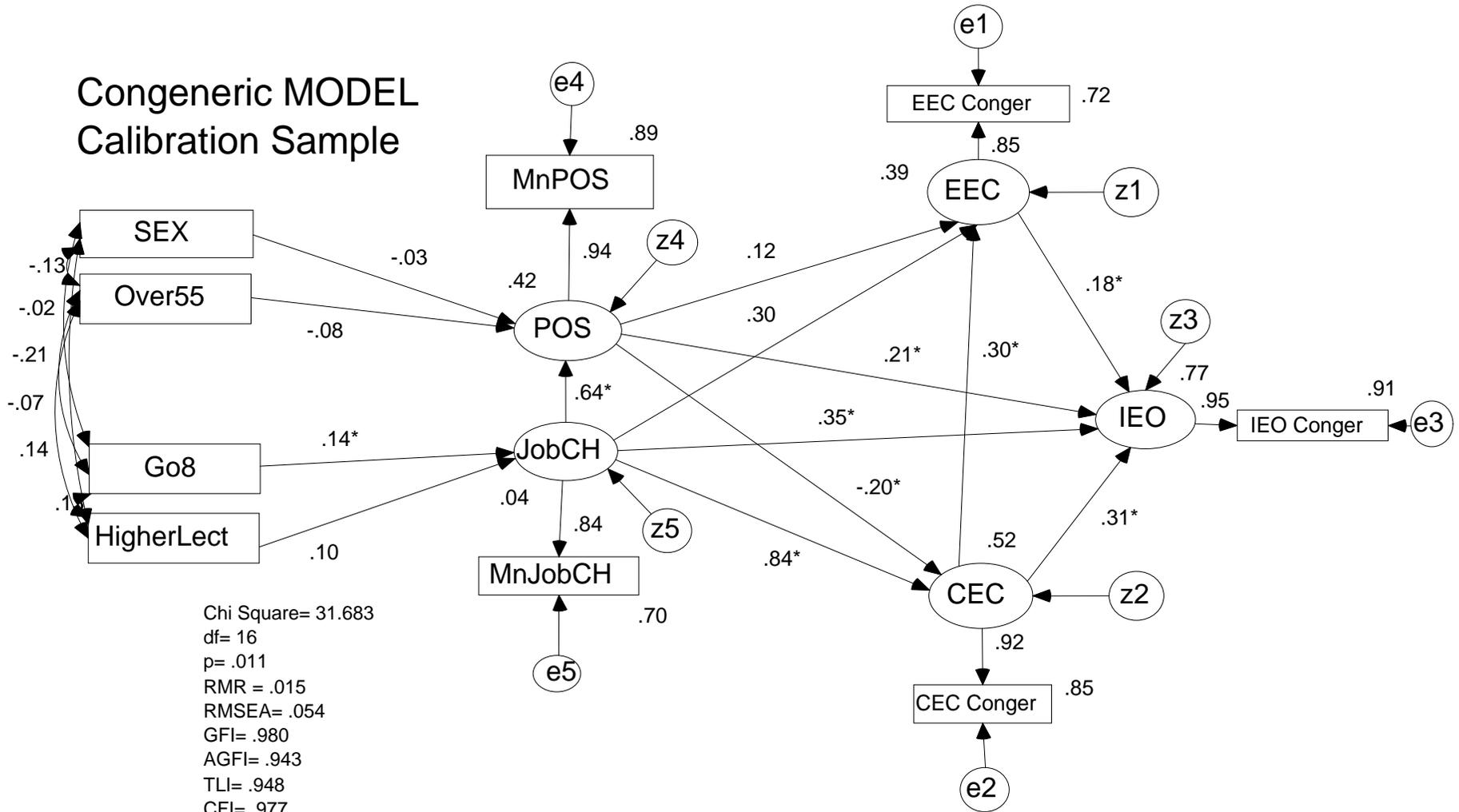
Figure 6-10 Maximised Reliability Model – With Four Paths Removed

As noted in Table 6-17, the removal of the sex of the participants as a control variable increased model fit substantially. All the fit indices indicate acceptable fit and it can be said that this model fits the data well. The summary of the regression paths are presented in Table 6-18. As expected this model provides little change to the structural paths, with JobCH→EEC and POS→EEC still not significant and Go8→POS the only significant contextual variable. The significance of the regression paths was consistent with the previous models, with all significant paths remaining significant. This model still maintains good explanatory power with 77% of the variation in individual engagement capabilities accounted for by the variables within the model, and 39% and 52% of the variation in emotional engagement capabilities and cognitive engagement capabilities are accounted for. As this model with the re-specifications fits the data well, in line with hypothesis eight (H8) it is necessary to develop directional support between the measures of JobCH and POS within the model.

Table 6-18 Calibration Sample (Gender Removed) – Regression Weights, Standard Errors, Critical Ratios and Probabilities

Hypothesis	Pathway			Beta	SE	CR	P
H4$_A$	EEC	→	IEO	.175	.068	2.897	.004
H4$_B$	CEC	→	IEO	.314	.085	4.195	***
H4$_c$	CEC	→	EEC	.292	.115	2.526	.012
H6$_A$	POS	→	EEC	.118	.100	1.180	.238
H6$_B$	POS	→	CEC	-.209	.089	-2.351	.019
H6$_c$	POS	→	IEO	.214	.072	3.353	***
H7$_A$	JobCH	→	EEC	.309	.163	1.900	.057
H7$_B$	JobCH	→	CEC	.842	.100	8.409	***
H7$_c$	JobCH	→	IEO	.355	.123	3.284	.001
H8	JobCH	→	POS	.646	.063	10.271	***
H10 $_A$	Over55	→	POS	-.077	.116	-1.588	.112
H11 $_B$	HigherLect	→	JobCH	.105	.142	1.738	.082
H12 $_B$	Go8	→	JobCH	.144	.131	2.390	.017

NOTE – N=332 calibration sample; *** indicates p<0.001.

6.6.1.1 Hypothesis Eight (H8) – Directionality of the Organisational Characteristics

The next step was to determine the directionality of the variables of POS and JobCH. Hypothesis H8 made for a positive effect of JobCH on POS; however, due to a lack of strong literature support, an alternative model was tested. The current model fit well with JobCH having a positive impact on POS (β=0.646, p<0.001). Within the alternative model, using AMOS, the arrow direction was changed so that the path was POS→JobCH (the full model results are presented in Appendix A5). The fit statistics are presented in Table 6-19, the results detail the model fit with the casual path being altered to suggest that POS was influencing JobCH.

Table 6-19 Hypothesised Model – Path POS to JobCH (Hypothesis H8)

χ^2 (12)=21.768 p=0.04	Acceptable Fit
χ^2/df = 1.814	Acceptable Fit
GFI = 0.984	Acceptable Fit
AGFI = 0.952	Acceptable Fit
RMR = 0.017	Acceptable Fit
RMSEA = 0.05	Acceptable Fit
TLI = 0.965	Acceptable Fit
CFI = 0.985	Acceptable Fit

As demonstrated in Table 6-19 with the causal path from POS to JobCH, the model does not fit the data as well as JobCH to POS (Table 6-17). The structural path is not quite as strong (β=.636, p<.001). In this calibration stage, this suggests that the job characteristics have a stronger direct positive (causal) impact on the perception of support from the organisation. This supports the work of Hutchison (1997) who found that POS indirectly altered the relationship between job characteristics and various outcome variables. The full structural model with JobCH → POS was retained as the strongest model fit. The final model on the calibration is discussed in the next section.

6.6.1.2 *The Final Calibration Model*

The final calibration is presented in Figure 6-11 and the summary paths results are presented in Table 6-18. This model was found to fit the data well and this is evident in the fit indices reported in Table 6-17. The final engagement model using the calibration sample accounted for a significant proportion of the variation in the individual engagement outcomes, accounting for 77%. This model provided support for some of the hypotheses (Table 6-5), including the main engagement dimensions. For both of the individual engagement capabilities, emotions and cognitions, support was found in their respective relationships with the individual engagement outcomes. The relationship between each of the engagement dimensions was supported in the calibration model (Support for Hypothesis 4 a, b, c & d). As expected each of the engagement capabilities are significantly impacting on the individual engagements and the cognitive capabilities are significantly influencing the emotional engagement capabilities.

This model provides evidence of an indirect effect between cognitive engagement capabilities and the individual engagement outcomes through the emotional engagement capabilities. The effect size is not large (0.0917= .292*.314) and this may be the result of the strong direct path between the cognitive engagement capabilities and individual engagement outcomes. In the calibration sample there is some support for hypothesis 4d.
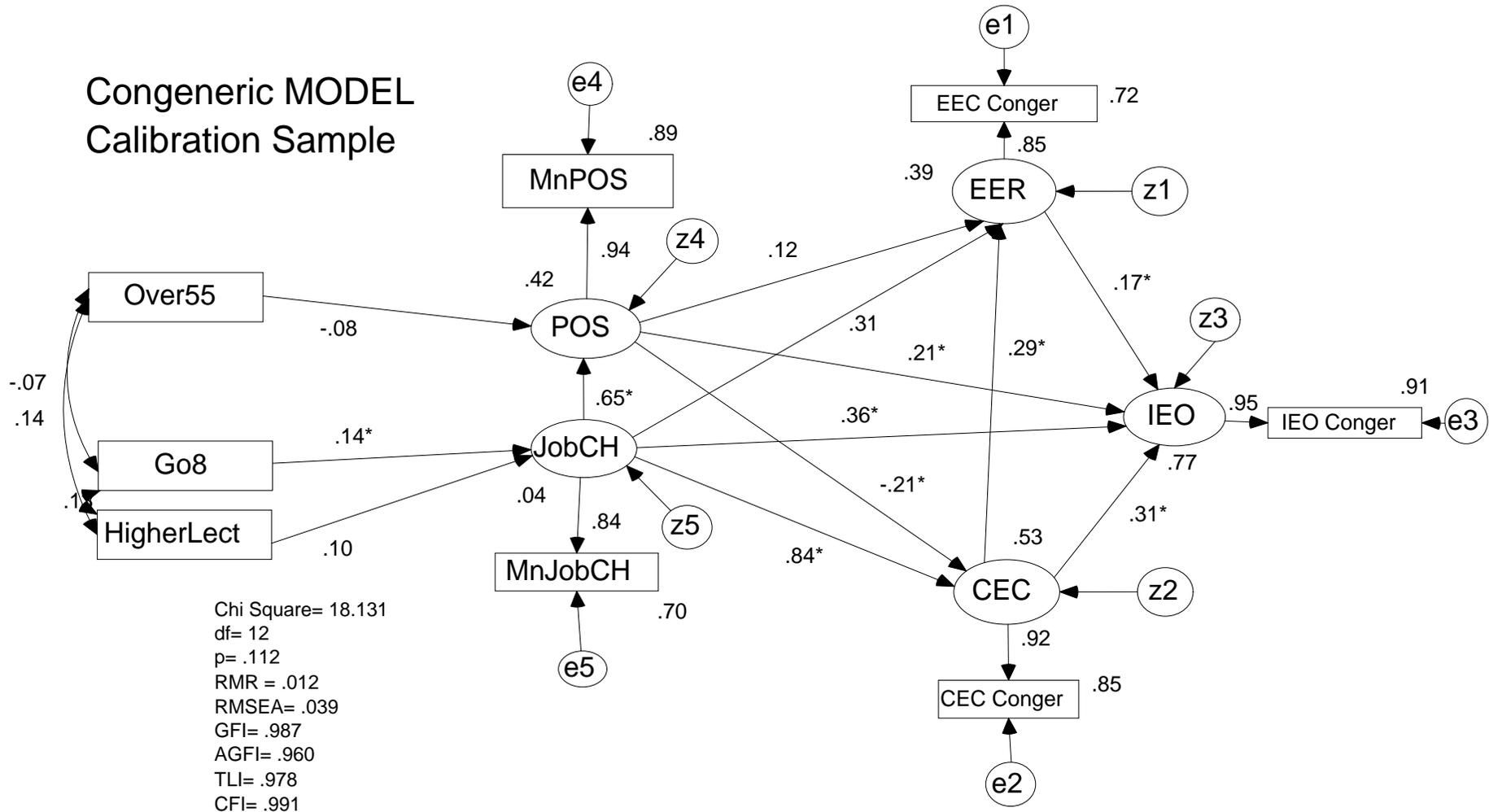
Figure 6-11 Maximised Reliability with Gender Removed

POS found partial support for the engagement dimensions. The relationship between POS and emotional engagement capabilities was not significant as predicated. Likewise, JobCH and emotional engagement capabilities did not reveal any significant relationship. JobCH had a strong direct path with cognitive engagement capabilities and individual engagement capabilities. The cognitive engagement capabilities could be mediating the relationship between JobCH and emotional engagement capabilities. A direct causal relationship between JobCH and POS was found to have a stronger impact on the overall calibration model than compared to POS to JobCH.

The controls found little support in the maximised reliability model and four paths were deleted for their non-significant structural paths. Gender was deleted from the model completely due to lack of contribution to the model. In the model presented Figure 6-11 there was very little support for the hypothesized control relationships. The hypotheses will be examined more fully in sections 6.7 below, giving consideration to all the results presented within this chapter. The next section will present the results of the maximised reliability model fitted onto the validation sample.

6.6.2 Validation Sample – Maximised Reliability Model

When model fit was established using the calibration sample, the same model was fit on to the validation sample using a replication of processes (Appendix A4). The justification of this approach is to develop an enhanced robustness of the process and the overall model. The summary correlations within this sample, based on the variables are presented in Table 6-20. The table reflects consistency of significant findings between the higher order composites (Table 6-6) and the congeneric factor composites based on the validation sample. The zero order correlations provide evidence of discriminant validity using the congeneric factors as well as consistency between the two groups. Each of the engagement dimensions demonstrate significant positive relationships with the other dimensions, and the antecedent organisational characteristics are also significantly correlated with the engagement dimensions, as expected.

Table 6-20 Correlation Table of Composite Measures and Congeneric Composites of variables in model (Validation Sample)

	1	2	3	4	5	6	7	8	9
1.Gender	1.0	-.32**	-.04	-.20**	.00	.07	-.13*	.06	.03
2. 55 years and over	-.32**	1.0	.09	.26**	.02	.09	.21**	.09	.10
3. Group of 8	-.04	.09	1.0	.10	.13*	.15**	.14*	.13*	.17**
4. Higher Lecturer Level	-.20**	.26**	.10	1.0	.10	.16**	.24**	.15**	.12*
5.POS	.00	.02	.13*	.10	1.0	.49**	.45**	.20**	.62**
6. JobCH	.07	.09	.15**	.16**	.49**	1.0	.45**	.40**	.59**
7. EEC	-.10	.21**	.12*	.23**	.41**	.44**	1.0	.48**	.67**
8. CEC	.05	.09	.14*	.14*	.26**	.45**	.65**	1.0	.44**
9. IEO	.01	.12*	.17**	.15**	.53**	.63**	.74**	.67**	1.0

NOTE: The upper diagonal represents the higher order mean composites correlations. The bottom half of the diagonal represent the congeneric factor correlations using the maximised reliability method. * significant at p<0.05, ** significant at p<0.01.

As with the calibration sample the λ and θ were calculated and fit onto the calibration model. Table 6-21 presents the summary calculations for λ and θ using the composite reliability of each of the factors. Appendix A4 details the full calculations. The validation model with standardised regression loadings is presented in Figure 6-12 and the overall model fit statistics are presented in Table 6-22.

Table 6-21 Summary Table using Maximised Reliability (Validation Sample)

Composite Variable	Composite Mean	Composite SD	Composite Variance	Composite Reliability	λ	θ
EECconger	5.22	0.80	0.64	0.801	0.714	0.126
CECconger	5.47	0.81	0.65	0.813	0.726	0.121
IEOconger	3.80	0.71	0.50	0.882	0.665	0.059

N=332. λ – regression coefficient using composite reliability, θ – error variance using composite reliability.

The model developed on the calibration sample fits the independent validation sample, although the χ² statistic indicated a poor model fit. However, when the sample was assessed for non-normality, the multivariate kurtosis (Mardia's Coefficent) value equalled 7.996 which suggested a moderate non normality. Bollen Stein's correction for non normality was used; the Bollen Stein p value was 0.169, suggesting an acceptable fit with the data after correcting for non normality.

Congeneric MODEL
Validation Sample

Chi Square= 24.321
df= 12
p= .018
RMR = .016
RMSEA= .056
GFI= .983
AGFI= .948
TLI= .966
CFI= .986
Bollen Stein p=0.169
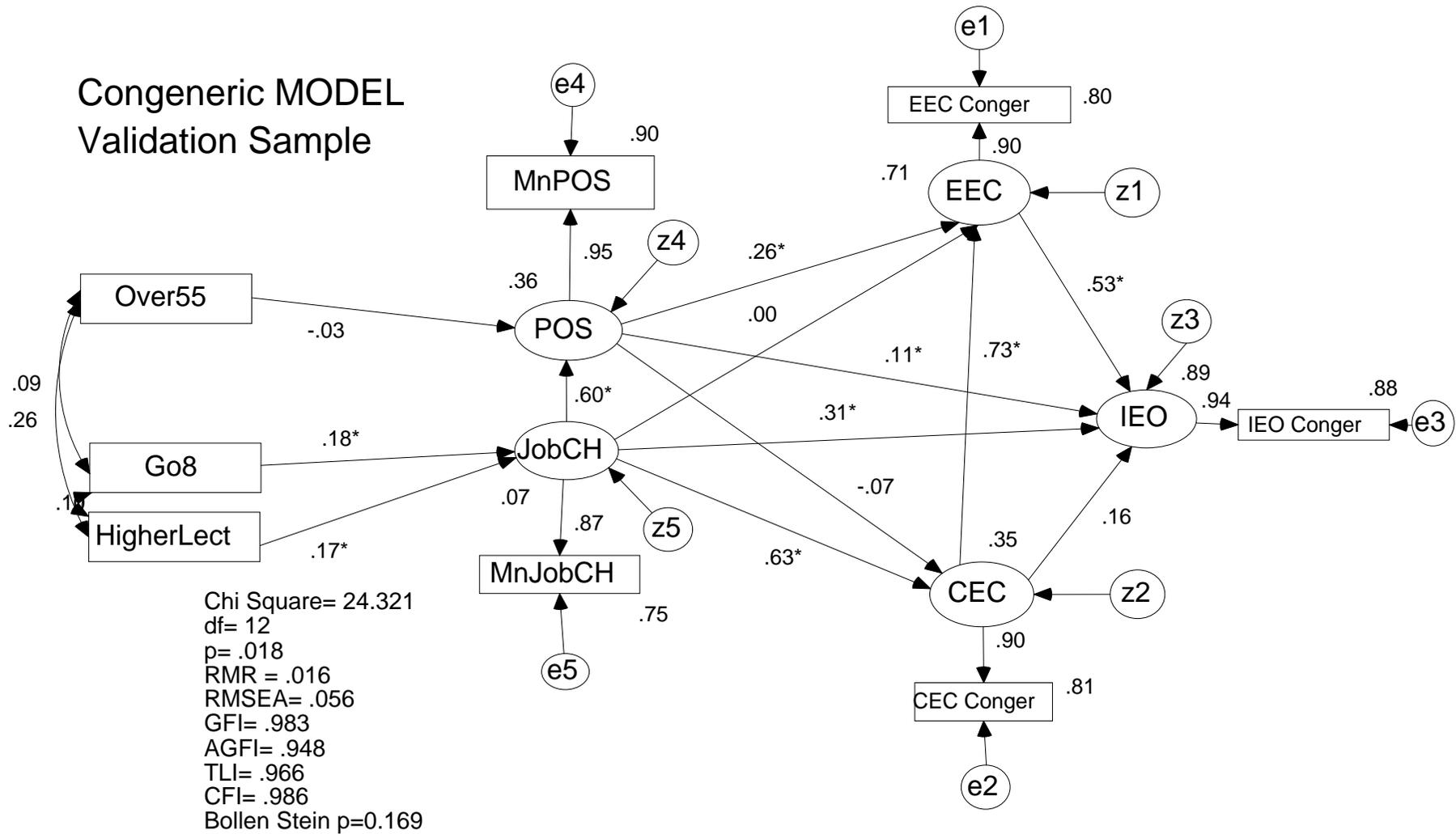
Figure 6-12 Maximised Reliability Model – Validation Sample

Table 6-22 Hypothesised Maximised Reliability Measurement Model Fit – Validation Sample

χ² (12)=24.321, p=0.018 Bollen Stein p=0.169	Acceptable Fit
χ²/df = 2.027	Moderate Fit
GFI = 0.983	Acceptable Fit
AGFI = 0.948	Acceptable Fit
RMR = 0.016	Acceptable Fit
RMSEA = 0.056	Acceptable Fit
TLI = 0.966	Acceptable Fit
CFI = 0.986	Acceptable Fit

The validation model provides good explanatory power, 89% of the variation in the individual engagement capabilities is explained by the variables within the model, 71% of the variation in emotional engagement capabilities is explained and 35% in cognitive engagement capabilities. In addition the structural paths revealed similar patterns of significance and non significance amongst the testable hypotheses as compared to the calibration sample. The summary of the structural paths are presented below in Table 6-23.

Table 6-23 Validation Sample – Regression Weights, Standard Errors, Critical Ratios and Probabilities

Hypothesis	Pathway			Beta	SE	CR	P
$H4_A$	EEC	→	IEO	.525	.094	5.589	***
$H4_B$	CEC	→	IEO	.158	.093	1.707	.088
$H4_c$	CEC	→	EEC	.727	.070	10.370	***
$H6_A$	POS	→	EEC	.264	.063	3.998	***
$H6_B$	POS	→	CEC	-.071	.078	-.872	.383
$H6_c$	POS	→	IEO	.109	.053	1.976	.048
$H7_A$	JobCH	→	EEC	-.001	.079	-.014	.989
$H7_B$	JobCH	→	CEC	.628	.077	7.144	***
$H7_c$	JobCH	→	IEO	.307	.057	4.714	***
H8	JobCH	→	POS	.601	.055	10.033	***
$H10_A$	Over55	→	POS	-.030	.116	-.588	.556
$H11_B$	HigherLect	→	JobCH	.169	.154	2.829	.005
$H12_B$	Go8	→	JobCH	.177	.157	2.978	.003

Note- N=332 validation sample; *** significant p<0.001.

The structural paths from the validation model reveals similar results, however, there are some variations, the path from the cognitive engagement capabilities to the individual engagement capabilities was not significant (β=0.158, p=.088), as demonstrated in the calibration model. This provides additional support for the indirect impact through the emotional engagement capabilities (H4d); the indirect effect was calculated as 0.382 (.727*.525), this suggests a strong indirect effect size (Kline 2005). The other engagement dimension paths were significant as expected (emotional engagement capabilities→individual engagement outcomes, and cognitive engagement capabilities → emotional engagement capabilities).

In the validation sample the path from POS to emotional engagement capabilities provides a significant direct relationship which varies from the calibration sample result. In addition the path from job characteristics to emotional engagement capabilities has a structural path of $\beta=0.001$, $p=.989$, this maybe indicating that POS is acting as a strong intervening variable and the relationship between JobCh and emotional engagement capabilities is indirect through POS or through the cognitive engagement capabilities. The structural path from POS to cognitive engagement capabilities is not significant in this sample. Each of the structural paths will be discussed further in the next section, where all the results will be synthesised with the hypotheses.

Overall, the validation model provided support for the calibration model, although some differences exist in the significance of the structural paths. The model as developed on the calibration sample fits the validation sample well and gives strength to the overall findings and engagement model. All the variables within the validation sample engagement model account for nearly all of the variation in the individual engagement capabilities, 89% accounted for. The next section will synthesize all the results together giving consideration to each of the hypotheses.

6.7 Result Synthesis and Hypothesis Support

For this thesis a number of different hypothesis were tested that were developed and based on the past research. This section overviews the support attained for each of them as detailed throughout this chapter. Discussion of the findings and their implication for human resource practice are presented in the discussion chapter (Chapter 7). The summary of the overall hypothesis attainment id presented in Table 6-24.

6.7.1 Hypothesis Support: Higher Order Common Constructs

It was hypothesised that various groups of measures would together have the properties of higher order constructs. These hypotheses were developed based on empirical support for previous studies and theoretical arguments (Chapter 4). The hypothesis dealing with the existence properties representing higher order constructs (Hypothesis 1, 2 & 3) found support in this thesis. Overall, the higher order CFA found that the selected measures represented the higher order construct of emotional engagement capabilities (partially), cognitive engagement capabilities and individual engagement outcomes. Robustness of each of these common underlying constructs was established through calibration/validation testing and the use of an alpha weighted model (where λ and θ are calculated using the Cronbach Alpha and fixed on the

model). Robustness was further established with a simple and default higher order CFA on the calibration sample, the results of which are presented in Appendix A2.

Table 6-24 Hypothesis Support Summary

Number	Hypothesis	Support
H1	The measures of meaningfulness, availability, psychological safety, psychological capabilities and vigour together have shared variance which have the properties of a higher order construct: emotional engagement capabilities.	Partial Support Safety not tested, and Meaningfulness in calibration sample not significant.
H2	The measures of attention, absorption, dedication, job involvement and intrinsic motivation together have shared variance which will have the properties of a higher order construct: cognitive engagement capabilities.	Supported
H3	The measures of affective commitment, job satisfaction, intention to quit, disengagement and exhaustion together have shared variance which will have the properties of a higher order construct: individual engagement outcomes.	Supported
H4	a : Emotional engagement capabilities will have a positive effect on the individual engagement outcomes.	Supported
	b : Cognitive engagement capabilities will have a positive effect on the individual engagement capabilities.	Partial Support Non significant path in the Validation sample
	c : Cognitive engagement capabilities have a positive effect on the emotional engagement capabilities.	Supported
	d: Cognitive engagement capabilities will have an indirect effect on the individual engagement outcomes as mediated through emotional engagement capabilities.	Supported Stronger effect in the validation sample
H5	The individual engagement capabilities (emotional and cognitive engagement capabilities) will have a positive effect on the individual engagement outcomes.	Supported
H6	a : POS will have a direct positive effect on emotional engagement capabilities.	Partial Support Not supported in the Calibration Sample
	b : POS will have a direct positive effect on cognitive engagement capabilities.	Partial Support Not supported in the Validation Sample
	c : POS will have a direct positive effect on individual engagement outcomes.	Supported
H7	a : Job characteristics will have a direct positive effect on emotional engagement capabilities.	Not Supported
	b : Job characteristics will have a direct positive effect on cognitive engagement capabilities.	Supported
	c : Job characteristics will have a direct positive effect on individual engagement outcomes.	Supported
H8	The job characteristics will have a positive effect on POS	Supported
H9	a: Gender will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.	Not Supported
	b: Gender will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.	Not Supported
H10	a: Age group will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.	Not Supported
	b: Age group will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.	Not Supported
H11	a: Academic lecturer level will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.	Not Supported
	b: Academic lecturer level will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.	Partial Support No support in the Calibration Sample
H12	a: Group of Eight universities will have a direct effect on POS and an indirect effect on the engagement capabilities and outcomes.	Not Supported
	b: Group of Eight universities will have a direct effect on the job characteristics and an indirect effect on the engagement capabilities and outcomes.	Supported

As noted there was consensual support between both of the samples for both the cognitive engagement capabilities and individual engagement outcomes as common underlying constructs.

Cognitive engagement capabilities were found to have the properties representative of higher order construct that encompassed the measures of attention, absorption, dedication, job involvement and intrinsic motivation. This means that academics will require all these characteristics to be able to have the cognitive capabilities to engage. In addition the individual engagement outcomes was found to also have the characteristics of a higher order construct consisting of the variables affective commitment, job satisfaction, intention to quit (reversed), disengagement (reversed) and exhaustion (reversed). The individual engagement outcomes are recognised in these measures.

There was only partial support for the emotional engagement capabilities as a common underlying construct, the calibration model held when using the Bollen Stein correction for non-normality and with a co-varied residual variance (meaningfulness and vigour). The measure of meaningfulness did not meet the required minimum 0.5 regression weight, suggesting that meaningfulness once co varied with vigour was not a significant predictor. In the validation sample this did not hold for this sample and the model provided was over fitted. Therefore the path between the co-varied residual was deleted. The model fit, when correcting for non-normality. All the measures had significant regression paths with the latent construct. It was deemed appropriate to keep the validation model for the benefit of the overall research and consider this result when considering the dimensions within the model. Partial support for emotional engagement capabilities was attained meaningfulness, vigour, psychological capabilities and availability.

6.7.2 Synthesis and Support: Engagement Relationships

Upon the establishment of the common underlying constructs the testing of the model occurred. The dimensions represented emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes. Hypothesis 4 had four sub-hypotheses that tested the specific relationships between each of the common engagement dimensions. Hypothesis 5 dealt with the combined effect of emotional engagement capabilities and cognitive engagement capabilities on the individual engagement outcomes. To test these hypotheses both a hierarchical regression and structural equation modelling was used.

At the zero order correlation level, there was support for the hypotheses. In the initial hierarchical regression support was found for the impact of both the emotional engagement capabilities and cognitive engagement capabilities on the individual engagement outcomes whilst controlling for the variation from the organisational characteristics and the contextual variables. In calibration sample, the cognitive engagement capabilities were not a significant predictor and was accounting for only a small percentage of the variation in the individual

engagement outcomes. This was attributed to a potential indirect effect between cognitive engagement capabilities and individual engagement outcomes through emotional engagement capabilities and this was not tested in the hierarchical regression. The model was found to be significant in the regression. Robustness was established with the testing of the hierarchical regression on both the calibration and validation samples. Partial support was found for hypothesis five (H5, the individual capabilities will have a positive effect on the individual engagement outcomes) both the emotional engagement capabilities and the cognitive engagement capabilities had a positive effect on the individual engagement outcomes. This provided support for further testing of the model within a structural model.

The structural equation model identified support for hypothesis 4a, where emotional engagement capabilities was seen to have a positive direct effect on the individual engagement outcomes ($\beta_{Calibration}$=.175 p=.004, $\beta_{Validation}$=.525 p<.001). This is consistent with the findings from the hierarchical regression. Providing the two separated tests for robustness and tested in the two samples, emotional engagement capabilities had a direct positive effect on the individual engagement outcomes. The emotional engagement capabilities lead to the individual engagement outcomes.

Partial support was found for the positive direct effect of cognitive engagement capabilities on the individual engagement outcomes ($\beta_{Calibration}$=.314 p<.001), the validation sample did not provide a significant path ($\beta_{Validation}$=.158 p=.088). This is contrary to the hierarchical regression which found that the calibration sample did not provide a direct significant result, and the validation sample did. A potential reason for the variation on these results may be in the paths and the potential of indirect effects. The relationships within the model may be altering according the specification of the various paths within the structural model. Emotional engagement capabilities may act as the intervening factor; in the hierarchical regression this was not tested. In comparison the structural model tests individual simultaneous regressions. The results of the SEM provide support for the indirect relationship between cognitive engagement capabilities and the individual engagement outcomes with emotional engagement capabilities as the intervening variable (hypothesis 4d, cognitive engagement capabilities will have an indirect effect on the individual engagement outcomes as mediated through the emotional engagement capabilities). The indirect effect is 0.0917 (.292*.314 calibration sample) and 0.382 (.727*.525 validation sample) for each of the samples. As expected there is a larger indirect effect in the validation sample and this is further supported with the non-significant direct path between cognitive engagement capabilities and individual engagement outcomes in the structural model. Contrary to the calibration sample where there was a strong relationship between these two factors.

In addition, as hypothesized (4c) the cognitive engagement capabilities had a direct positive effect on the emotional engagement capabilities ($\beta_{Calibration}$=.292 p=.012, $\beta_{Validation}$=.727 p<.001). The zero order correlations based on the congeneric factors also support this positive association ($r_{Calibration}$=.43 p<.01 , $r_{Validation}$= .65 p<.01). There is statistical support for the relationship between cognitions and emotions, which provides added reinforcement for the indirect role of emotional engagement capabilities on the individual engagement outcomes. This indicates that of the engagement dimensions, engagement begins the cognitive engagement capabilities. Overall, there was support for hypotheses 4 (a-d) and 5, the engagement dimensions as proposed do in fact present a significant engagement model and do provide support for the conceptual model.

6.7.3 Synthesis and Support: Organisational Characteristics

The organisational characteristics incorporated the variables that were thought to be significant in an engagement model. These are the POS and the JobCH. It was hypothesised that POS would have a direct positive effect on each of the engagement dimensions; this resulted in three testable hypotheses (H6a-c). For both of the samples mixed results were found. In the calibration sample there was no support for the hypothesis (6a) that POS would have a positive effect on the emotional engagement outcomes. The non significant result may be a consequence of cognitive engagement capabilities acting as an intervening variable between POS and the emotional engagement capabilities, as POS was found to have a significant effect on the cognitive engagement capabilities ($\beta_{Calibration}$= -.209, p=.019). This effect was negative which suggests that all variance is accounted for, the correlation results suggest a strong positive relationship between the two variables (Table 6-12 & Table 6-20) ($r_{Calibration}$=.29 p<.01 , $r_{Validation}$= .26 p<.01). In the validation sample the relationship between POS and emotional engagement capabilities was significant ($\beta_{Validation}$=.264, p<.001) and the strength of the relationship between POS and cognitive engagement capabilities was no longer significant ($\beta_{Validation}$= -.071, p=.383). This provides additional support for the indirect effect of POS and emotional engagement capabilities through the cognitive engagement capabilities. Hypothesis 6a (POS will have a direct positive effect on the emotional engagement capabilities) was partially supported. Hypothesis 6b was supported because even though the effect of POS on the cognitive engagement capabilities was significant (in the calibration sample) in both samples the effect was negative rather than the hypothesized positive effect. This means that the relationship between JobCH$\rightarrow$POS, Controls$\rightarrow$JobCH, and Over 55years$\rightarrow$ POS are accounting for all the variance in POS resulting in a negative beta values. The actual relationship between the two variables (POS and cognitive engagement capabilities) is established as positive at the zero order correlation level ($r_{Calibration}$=.29 p<.01, $r_{Validation}$= .26 p<.01).

Hypothesis 6c was supported as POS was found to have a significant positive effect on the individual engagement outcomes in both the hierarchical regression and the structural model, and in both samples. POS in the literature has been found to link strongly with many outcome type variables, such as commitment. Therefore perceptions of support from the organisation will result in positive individual engagement outcomes for the academic. POS may have an indirect effect on the individual engagement outcomes through the significant path with emotional engagement capabilities in the validation sample, the indirect effect =.1387 (.264*.525). Therefore the individual engagement outcomes is expected to increase .1387 standard deviation for every increase in POS of 1 full standard deviation via its prior effect on emotional engagement capabilities (Kline 2005).

Overall, partial support was gathered for hypothesis 6a, 6b and 6c. It can be concluded that POS is interacting with the various engagement dimensions as represented by common underlying constructs. Therefore perceptions of organisational support are directly and indirectly impacting the emotional and cognitive engagement capabilities as well as the individual engagement outcomes.

The job characteristics were hypothesised to have a positive effect on each of the engagement dimensions. This was tested with three hypotheses (7a-c). It was found that the characteristics of the job have a positive effect on the cognitive engagement capabilities and the individual engagement outcomes (hypothesis 7b and 7c) in both samples. However, no support was found for hypothesis 6a, job characteristics does not have a significant effect on the emotional engagement capabilities (both samples). This may suggest that any relationship between job characteristics and emotional engagement capabilities may be indirectly influenced through the cognitive engagement capabilities (hypothesis 7c) or POS. The indirect effect through the cognitive engagement capabilities = 0.2459 (.842*.292) for the calibration sample and 0.4566 (.628*.727) for the validation sample, suggesting strong indirect effects through the cognitive engagement capabilities between JobCH and emotional engagement capabilities. This demonstrates that the impact of the characteristics of the job on the emotions is indirectly linked through the cognition states associated with the job (Renn & Vandenberg 1995).

Hypothesis 8 predicted a positive association between JobCH and POS but the hypothesis did not specify any directionality. Initial support for this hypothesis was established in the sample overview statistics, the Pearson's r 0.50, providing a positive association between the two. This is also reflected in both of the samples ($r_{Calibration}$=.51 p<.01 , $r_{Validation}$= .49 p<.01). In addition the regression co-efficient for both samples were significant and positive. The SEM, used JobCH→

POS in the initial calibration stages as there was a some initial support for this relationship (Hutchison 1997), the intention was to get the model to fit the data (Table 6-17) and then change the directionality of the model to determine the best casual relationship (Table 6-19). Both models fit the data well and there was a positive association between these variables in both of the models. However, in providing support to Hutchison (1997) claims JobCH had a stronger casual impact on POS (β=.65) than POS on JobCH (β=.63), in addition model fit was stronger for JobCh$\rightarrow$POS than the alternative. The alternative structural model is presented in Appendix A4. This result established support for Hypothesis 8. Having established the directionality between JobCH and POS, POS could be acting as an additional mediating variable between JobCH$\rightarrow$emotional engagement capabilities, where the direct path between the two was not significant (the indirect result $0.0762_{Calibration}$ [.646*.118] and $0.1587_{Validation}$ [.601*.264]).

Overall the organisational characteristics have a significant role in understanding engagement; this is evident in the direct and indirect relationships with the engagement dimensions. Both the POS and JobCH are important organisational antecedent dimensions which impact on engagement.

6.7.4 Synthesis and Support: Contextual Variables

The hypotheses for the contextual variables found minimal support from the results. There were eight hypotheses that were identified proposed a direct on POS and JobCH as well as indirectly impacting the engagement dimensions. The contextual variables included the personal variables (sex & 55 years and over) and the structural organisational variables (higher lecturer levels and Group of 8). At the zero order correlation level, there was some support for the variables relationships especially Group of Eight and higher lecturer levels.

No support was found for gender within the final model. The path to POS (9a) and job characteristics (9b) was deleted for lack of significance. Therefore this variable was dropped from the final model. In the hierarchical regression sex was having little impact on the regression equation. No support was found for over 55 years of age as a control variable, Hypothesis 10b between age and JobCH was deleted to enhance model parsimony at an early stage. In the final model there was no support for hypothesis 10a (Over 55 $\rightarrow$ POS). Overall there was little support for the impact of the personal variables (gender and age) on the organisational characteristics.

Some support was found for higher lecturer level and the path between higher lecturer levels and POS (11a) was deleted for lack of significance and to enhance model parsimony. The effect of higher lecturer level on job characteristics was partially supported (11b) in the calibration

sample but the relationship was not significant. However, in the validation model, the relationship was significant which suggests that higher lecturer level had a direct effect on job characteristics. No support was found for hypothesis 12a. There was no direct effect between university group (Go8) and POS and this path was deleted. Support was found in both samples for hypothesis 12b, the effect between Group of Eight and job characteristics. This suggests that University group, especially those at the Go8 universities has a direct impact on job characteristics and subsequently indirectly impacting on the engagement dimensions. The structural organisational variables (lecturer level and university group) have direct impact on the job characteristics.

6.8 Chapter 6 Summary

This chapter has presented the results of this study. The chapter began with an overview of the sample and a discussion of the measurement dimensions. The measures used were each established as reliable and valid from past research and this was substantiated within this sample. To enhance robustness of the methods used the sample was split and the common underlying constructs were established on the calibration sample and then supported with the validation sample using the same methods. In addition, to support robustness the model was tested as an alpha weighted model. This model was developed based on the previous work of Munck (1979) and Politis (2001, 2002) where λ and θ were calculated based on the sample and the Cronbach alpha to enhance model fit. This approach uses all available information. Support was found for hypothesis 1-3 and for research question 2.

Finding support for the properties of higher order engagement dimensions allowed for further testing of the hypotheses. The model was tested first through a hierarchical regression then verified through SEM. The hierarchical regression established the significant relationships between the variables at the various levels, the regression provided support for the impact of the individual engagement capabilities (emotion and cognition) on the individual engagement outcomes whilst controlling for variation from the organisational characteristics and the contextual control variables (H5). The individual engagement capabilities contributed unique variation on the individual engagement outcomes when controlling for the other variables (RQ3).

The overall structural model held with various iterations and alterations based on theoretical and empirical foundations. The full model was tested using a maximised reliability method, where using the factor loadings the reliability of the composite was established based on congeneric factors (the full calculations of which are presented in Appendix A3) (Munck 1979; Politis 2001, 2002). This method maximised the reliability before calculating the λ and θ to fit onto the full

structural model. The model was fit using the calibration sample, then following the same procedures the same model was fit onto the validation sample. Both models fit the data well, as recognised by the various fit statistics reported; the validation sample was fit using Bollen Stein correction for non-normal distribution. The structural paths were examined to determine hypothesis acceptance or rejection.

A synthesis of the results revealed that the all the engagement dimensions are significant and relate to each other. The results identified that engagement begins with the cognitive engagement capabilities which impact directly the emotional engagement capabilities and the individual engagement outcomes. The cognitive engagement capabilities also indirectly impact on the individual engagement outcomes through the strong direct relationship with the emotional engagement capabilities. In addition support was found for the organisational characteristics of POS and JobCH and their importance as antecedents to the engagement dimensions. There were mixed results for the contextual variables. Most significantly it was found that those academics at higher lecturer levels and those within the Group of Eight demonstrated variation in job characteristics with a direct effect.

Not all the hypothesis found support in this thesis, these are summarised in Table 6-24. The full implications of these results are discussed in the next chapter. The results are analysed in conjunction with the relevant literature. The discussion chapter identifies the major factors and results arising from this thesis in the context of the Higher Education section within Australia.

Chapter 7 : DISCUSSION

This thesis synthesised the engagement research conducted by scholars in management and psychology and organisational consultants to create a common underlying theoretical framework for engagement which has been tested on a large sample of Australian business academics. In doing so, the thesis has answered each of its four research questions and created a model of engagement for business academics:

RQ1   What are the consistencies or lack of consistencies in how engagement is used in the literature?

RQ2   For Australian business academics, does engagement consist of common underlying constructs that subsume many of the existing concepts of individual workplace connectedness along emotional, cognitive and outcome dimensions?

RQ3   For Australia business academics to what extent do emotional and cognitive workplace connectedness variables explain additional variation in the individual workplace connectedness outcomes after university structure, demographics and work context variables are controlled for?

RQ4   Can a model of engagement derived from individual workplace connectedness variables organised into emotional, cognitive and outcomes dimensions be used first to identify pathways of engagement for Australian business academics and secondly provide insight into academic engagement?

This chapter commences with a discussion of the results in the context of the research questions. Each of the key dimensions needed to answer the question are examined; the common engagement factors and the overall model of engagement within the context of the conceptual framework. The final model and its contribution to a new definition of engagement are then discussed. The findings have implications for the management of academics and for the future of engagement research and these issues are taken up at the end of the chapter. The chapter concludes with a discussion on the transferability of the model including directions for future research.

7.1. Establishment of the Three Common Engagement Constructs

A key premise of this thesis is that whilst the research on engagement by scholars and consultants has been diverse there is an underpinning theoretical framework common to almost all research endeavours in the field, stemming largely from Kahn's (1990) work. Chapter 2 presented a comprehensive analysis of the literature on engagement and identified the lack of consistency between its various conceptualisations but noted that the important overlaps and interconnects in the engagement domain were those of: emotions, cognitions and outcome dimensions. In doing so, the chapter was able to answer RQ1.

The second research question asked whether engagement consists of common underlying constructs that subsume many of the existing concepts of individual workplace connectedness along emotional, cognitive and outcome dimensions. This was answered partly in Chapter 4 by using past empirical research and a building theoretical argument for engagement as representation of emotion, cognition and outcome dimensions. Chapter 4 used many of the individual work connectedness variable overlaps and inconsistencies identified in Chapter 2 to develop the connections. Three propositions were developed and these are summarised in Table 7-1. The individual work connectedness variables were linked together to be tested as common underlying constructs of emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes. The results (Chapter 6) found support for RQ2 and the existence of the each of the three engagement dimensions. The reasoning behind the study of higher order constructs was useful in this research to assist in determining the generalisability between primary factors (Gorsuch 1983) and bringing together the key engagement contributions from within the literature. This section outlines each of the three engagement common constructs, that have the characteristics representing a higher order construct.

Table 7-1 Engagement Higher Order Propositions

Number	Proposition
Proposition Nine P9	*Emotional engagement capabilities* can be represented by a common underlying construct comprising the variables of vigour, meaningfulness, safety, availability and psychological resources.
Proposition Ten P10	*Cognitive engagement capabilities* can be represented by a common underlying construct comprising the measures of attention, absorption, dedication, job involvement and intrinsic motivation.
Proposition Eleven P11	The *individual engagement outcomes* can be represented by a common underlying construct comprising the factors affective commitment, job satisfaction, intention to quit, exhaustion and disengagement.

7.1.1. Emotional Engagement Capabilities

In bringing together the individual workplace connectedness variables (RQ2), Chapter 2 identified emotions as one of the key underlying dimension of engagement (RQ1). Emotional engagement capabilities were defined as the emotional abilities and potential to engage at work:

the emotional empowerment to engage. Chapter 4 then developed emotion into the emotional engagement capabilities as having the properties of a higher order construct proposition (P9) to incorporate the concepts of meaningfulness, availability, psychological safety, vigour and psychological resources.

In the initial testing of the measures psychological safety was found not to be a reliable measure and was subsequently not tested as part of the higher order construct (section 6.2.1). In another study using this measure of psychology safety poor reliability results were also found (Olivier & Rothmann 2007). This signifies a potential limitation in fully understanding the emotional engagement capabilities. However, without safety, the common construct held with the other four variables. Meaningfulness in the calibration did not meet the minimum regression coefficient numbers to support inclusion; it was nonetheless included to keep the emotional engagement capabilities at four indicators rather than three. The fact that psychological safety is excluded does not support proposition 9 (RQ2) because it was expected that the current workplace connectedness variables within the engagement literature would join to indicate the properties of a higher order construct through a shared variance. Further research may want to establish or test a different version of this measure within a similar higher order test, such as that adopted by Edmondson (1999) for team psychological safety.

The variables of meaningfulness, availability and psychological safety had been identified by May et al. (2004) as the key antecedents to their measure of engagement. According to Kahn (1990) what he terms the psychological states are important in developing psychological presence at work and these are the required conditions to be able to engage. The psychological conditions represent the capabilities of the self in order to meet the obligations of the job (Kahn 1992). These conditions in previous research had been found to be highly related (May et al. 2004; Olivier & Rothmann 2007), in addition the psychological resources were found to be directly related to engagement as well as the psychological states. The results from this thesis indicated that based on the pre-established measures of availability, meaningfulness, and psychological resources by May et al. (2004) and the measure of vigour, these represent common properties representing a higher order construct.

In addition to the psychological states of meaningfulness and availability, vigour was also found in this thesis to be acting like an indicator of the higher order construct of emotional engagement capabilities. Vigour is defined as having high levels of energy and mental resilience for the job and the work, and the commitment to invest effort into job (Schaufeli, Martinez et al. 2002). This had not previously been linked to the psychological states or psychological resources; however, the finding supports the relationship. At the zero order level and as a common

underlying construct all four of the variables (meaningfulness, availability, psychological resources and vigour) were significant predictors of the emotional engagement capabilities in both of the samples, suggesting that they has the properties representative of higher order constructs. Meaningfulness was not a significant predictor in the calibration sample. Availability and vigour were the highest predictors in both of the samples, indicating that perhaps the relationship between the two is stronger than the others and this is worth following up in future research. Although used as part of another instrument (UWES), vigour was tied to the emotional engagement capabilities because the questions reflected emotions associated with the work. Availability, in a similar vein indicates being emotionally available and ready to engage with work/job. Consequently, to be have the emotional engagement capabilities at work means to find meaning in the job/work being done, being emotionally available to engage, having the psychological resources to engage and having high levels of mental resilience and energy.

As anticipated the results found that for academics, the psychological states (excluding psychological safety), psychological resources and vigour are all important emotional requirements in to truly be engaged at work, in the job and the organisation. These variables represent the emotional engagement capabilities that are needed to engage which will lead to the individual engagement outcomes. The results also find support for many of the contributors to the engagement domain particularly: Kahn (1990), ISR (2004a), Towers Perrin (2006) and CLC (2004). This thesis takes the emotional dimension beyond Kahn's (1990) definition of having personal feelings about the job by including the emotions around the work being done, the organisation that worked for and the people worked with. This supports Waldron's (1994) work which found that emotions are an important part of organisations and are entwined within the tasks and social dimensions of the work performed. In addition, Brown (1996) also extends this idea and argues that emotion has an impact on the behaviours that people exhibit at work. Overall emotional engagement capabilities are an important consideration for an overarching understanding of engagement, and the results support that emotional engagement has the properties of a higher order construct of the variables meaningfulness, availability, psychological resources and vigour. In driving academic engagement, especially as knowledge workers will require development of these constructs in order to drive their emotional engagement capabilities.

The results provide support for RQ2. Therefore the emotional engagement capabilities support the contention that the constructs have the properties to represent a higher order construct, there is a shared variance between the indicators. This finding indicates that if employees have the emotional engagement capabilities to engage then it means that the academics will find meaning in their jobs; are invigorated by their work; are emotionally and psychologically available for the

182

work; and have the psychological resources to be able to engage. The next section will explore the cognitive engagement capabilities as a potential common underlying construct.

7.1.2. Cognitive Engagement Capabilities

In addition to an emotional engagement dimension it was also argued that a cognitive dimension would have the properties of a higher order construct. Chapter 4 argued that engaged individuals would display the work connectedness variables: attention, absorption, dedication, job involvement and intrinsic motivation and these represent the cognitive dimension of engagement (P10). These constructs, once developed into measures were hypothesised to have the properties of a higher order construct for the cognitive engagement capabilities. The cognitive engagement capabilities are defined as the cognitive abilities and potential to engage at work; the cognitive empowerment to engage. The results supported this contention (section 6.4.2) finding that cognitive engagement capabilities consisted of the variables attention, absorption, dedication, job involvement and intrinsic motivation. It was deemed appropriate to join these variables together as there were strong theoretical arguments that these variables represent cognitive engagement dimensions.

In previous research, there has been a strong empirical relationship reported between attention and absorption (Rothbard 2001); absorption and vigour (Schaufeli et al. 2006; Schaufeli, Martinez et al. 2002); and dedication and job involvement (Hallberg & Schaufeli 2006). Each of the variables representing cognitive engagement capabilities as a common underlying construct was significant in both samples. The strongest predictors were dedication, intrinsic motivation and job involvement. Dedication is the degree of involvement and experiencing significance, enthusiasm, inspiration, pride and challenge from the work (Schaufeli et al. 2006). It is very similar to the idea of job involvement, which is the degree to which a person identifies psychologically with their work (Lodahl & Kejner 1965). There have been mixed reports of the relationship between the two. For instance, Hallberg and Schaufeli (2006) found that they are statistically distinct, whereas Newman and Harrison (2008) argued that theoretically they are not distinct. Intrinsic motivation is an important determinant of cognitive engagement capabilities because in many engagement studies motivation has a distinct role (Harley et al. 2005; Harter et al. 2002). Brown (1996) provides a link between job involvement and intrinsic motivation, saying that someone who is involved in their job would find that job motivating. Harter et al (2002) and Harley et al. (2005) believe that a person who is truly engaged at work will be experiencing a sense of motivation that could potentially inspire them to work harder. Each of these three dimensions indicates the importance of the cognition states for engagement. For academics this may translate as developing the job role in such a way, such as greater work role fit, role clarity and challenging task to develop involvement and subsequently intrinsic

motivation (Bakker et al. 2007; Coetzer & Rothmann 2007; Olivier & Rothmann 2007; Orpen 1997). This becomes instrumental for the development of the cognitive engagement states.

Additionally, absorption and attention were both found to be important determinants in the engagement process. Kahn (1990) discussed engagement as the degree of psychological presence at work and the absorption of the self into the work role. Rothbard (2001) and Schaufeli et al. (2002) each propose engagement partly in terms of the degree of absorption. Whilst strongly impacting the cognitive engagement capabilities, it is not quite as strong as the other variables within the model.

The results from this thesis highlight the cognitive engagement capabilities have the properties representing the higher order construct consisting of the variables: dedication, job involvement, intrinsic motivation, absorption and attention. This means that academics with cognitive engagement capabilities are involved, feel a sense of pride; a sense of significance and intrinsic motivation from the job; are absorbed in the task, job, or work; and are attentive to what needs to be done. The implications of this result adds support for a cognitive engagement dimension (RQ2), in line with Kahn (1990), ISR (2004a) and Schaufeli and Bakker (2004).

7.1.3. Individual Engagement Outcomes

The final engagement dimension tested as a common underlying construct was the individual engagement outcomes. It was argued in Chapter 4 that the constructs of affective commitment, job satisfaction, disengagement (reversed), exhaustion (reversed) and intention to quit (reversed) as work connectedness variables were found in previous research to be linked to engagement, and have the properties representing a higher order construct. This was termed the 'individual engagement outcomes'. The results of this thesis supported this contention (section 6.4.3). Each of these variables were found to significantly contribute to the accounted variance in the individual engagement outcomes, suggesting that together these variables have a shared variance which supports the argument that they represent a higher order construct.

These variables, especially affective commitment, job satisfaction and intention to quit have demonstrated their consequential effects within various engagement models in the research literature. Enhancements of constructs like commitment and satisfaction have been linked to the optimal functioning of the knowledge worker for the maximum benefit of the organisation. Driving these constructs and engagement is essential for universities. Commitment has been explicitly linked as a key engagement component (Australian Public Service Commission 2006; CLC 2004; Macey & Schneider 2008; Robinson et al. 2004). It was found that affective commitment represented an engagement outcome dimension in support of some of the current

engagement contributors (BSI-Consulting 2007; CLC 2004; Macey & Schneider 2008; Robinson et al. 2004). Furthermore, job satisfaction has been closely linked to both affective and overall commitment (Currivan 1999; Lok & Crawford 2001; Luthans et al. 2008; Reid et al. 2008). It was found in the results of this thesis that both job satisfaction and affective commitment both contribute to a common underlying construct. The thesis found that intention to quit shares the variance of the individual engagement outcomes, and this supports the literature, that has linked intention to quit (or one of it derivations) to commitment and satisfaction. As often occurs in the measurement of models with these variables intention to quit is often a consequence (Iverson & Buttigieg 1999; Ko, Price & Mueller 1997). However, in more recent literature, intention to quit has been treated on the same continuum as affective commitment, using the logic that employees not emotionally attached are detached and intends to quit (Casper & Harris 2008; Gaiduk, Gaiduk & Fields 2009; Riketta & Dick 2005).

In addition, this thesis found that disengagement (reversed) and exhaustion (reversed) also provide support for their role in determining the higher order construct of individual engagement outcomes. The disengaged variable was defined in terms of distancing oneself from the work, and encompassed the negative dimensions of the job, work and environment (Demerouti et al. 2001). Exhaustion is degree of emotional, cognitive and physical exhaustion due to the job, work and organisation in general (Demerouti et al. 2003; Halbesleben & Demerouti 2005). As these variables in the previous literature have been treated as a combined measure of burnout (Demerouti et al. 2001), to reverse score it means converting it to 'not burnout'. This thesis established support for exhaustion and disengagement as distinct variables that combine with the other variables which have the properties representing the higher order construct of individual engagement outcomes. This adds to the literature on burnout and contributes to conversation on the OLB-I. All of the variables entered were found to be significant predictors of the individual engagement outcomes, with job satisfaction and disengagement (reversed) as the strongest of the predictors.

To summarise the results of the individual engagement outcomes, each of the variables that were predicted to share variance, was significant. In the engagement domain, the individual engagement outcomes was originally built upon and extended the work of Kahn (1990) as well as those engagement researchers who identified a physical, behavioural or rational dimension in their conceptualisation (ISR 2004a, 2004c; Macey & Schneider 2008; Towers Perrin 2003). The results presented indicate that having the individual engagement outcomes is evident in being emotionally attached to their university; satisfied with their job and the work being done; involved in the dimensions of the job; and not emotionally, cognitively, or physically exhausted and do have no intention to leave the university.

The implications for universities are that they need to find ways in which to develop the job, work and the environment in general in order to make it sufficiently stimulating, so that academics can become positively involved and satisfied with the work, without becoming exhausted, to develop an emotional attachment and remain with their university. In the management of the knowledge worker this may be driven from good leadership, recognition, communication and feedback (Avolio et al. 2004; Jensen & Luthans 2006; Rama Devi 2009; Winter, Taylor & Sarros 2000) This is discussed further in Section 7.5. We now move to consider the relationships between the engagement dimensions.

7.2. The Inter-Relations Between the Engagement Dimensions

This section discusses the specific relationships within the engagement model. The section begins with a discussion on the engagement pathways (propositions 1-4 as outlined in Table 7-2). The organisational characteristics (propositions 5-7 as outlined in Table 7-3) are then considered and finally, the contextual variables (proposition 8 as outlined in Table 7-4).

The variables within the final engagement model explain 77% (calibration sample) and 89% (validation sample) of the variation within the individual engagement outcomes. This accounts for most of the variation within the model. This presents one of the major findings that come out of this study and this is based on the support of the major pathways within the model.

7.2.1. Pathways of Engagement

Three key engagement dimensions have been identified as having the properties of higher order constructs in the research literature. These are the emotional engagement capabilities, the cognitive engagement capabilities and the individual engagement outcomes. Using these three key dimensions of engagement this section explores the engagement pathways based on previous theory (Chapter 2) and the developed propositions (Chapter 4). The propositions are presented in the Table 7-2 and these begin to bring a greater understanding of the engagement pathways for Australian business academics.

Table 7-2 Engagement Dimension Propositions

Number	Proposition
Proposition One P1	*The **individual engagement capabilities**, as defined by emotions and cognitions will positively affect the **individual engagement outcomes***.
Proposition Two P2	*Individual engagement capabilities - **Emotions (emotional engagement capabilities)** will have a positive effect on the individual **engagement outcomes***.
Proposition Three P3	*Individual Engagement Capabilities - **Cognitions (cognitive engagement capabilities)** will have a positive effect on the **individual engagement outcomes***.
Proposition Four P4	*Individual engagement capabilities - **Cognitions (cognitive engagement capabilities)** will have a positive effect on the **emotional engagement capabilities***.

It was identified that individual engagement capabilities as defined by emotion and cognitions will affect the individual engagement outcomes (Proposition 1). The results found support for this proposition in a number of ways. The hierarchical regression (Chapter 6) indicated a positive significant impact of emotional engagement capabilities and cognitive engagement capabilities together with the individual engagement outcomes, whilst controlling for variations in contextual dimensions and organisational characteristics. One anomaly was found in the calibration sample: the impact of cognitive engagement capabilities on individual engagement outcomes was not significant, which was discussed in the results section (section 6.5 and 6.7) indicating that there could be a possible indirect effect occurring. This will be discussed further later in this section.

The results lends support for the individual engagement capabilities (emotions and cognitions) positively effecting the individual engagement outcomes. This extends previous engagement literature by providing a clear interaction between these engagement dimensions. Kahn (1990) had overlooked the possible interaction between these dimensions when being psychologically available to engage. Furthermore, this finding supports Macey and Schneider (2008) who argued that engagement is made up of specific states (in this case emotions and cognitions) which will lead to subsequent behavioural outcomes (individual engagement outcomes). Engagement as a state is conceptualised by many of the psychology scholars, although as we've seen, the conceptualisations are quite diverse (Hallberg & Schaufeli 2006; Rothbard 2001; Schaufeli, Martinez et al. 2002; Schaufeli, Salanova et al. 2002). The consultant contributions to engagement conceive similar ideas, particularly the ISR (2004a) and CLC (2004). This result addresses RQ3 and has further clarified the previous engagement contributions by beginning to identify the interaction between the engagement dimensions.

The implication of this finding is that there are specific engagement capabilities that are needed to provide enhanced levels of engagement outcomes. As conceptualised those outcomes are affective commitment, job satisfaction, and intention to remain with the organisation, and not to burnout at work. Previous research has indicated that each of these outcomes is desirable for organisations because of the links to increased profitability and organisational performance (the full analysis of these links are discussed in section 7.5). This is evident in the ISR model (think, feel and act) which predicts that engaged employees will work towards their organisation's missions and goals; will have a sense of pride in their work; and plan to stay with their organisation and contribute extra effort for the benefit of their organisation. These ideas are similar to the CLC (2004) who acknowledge emotional and rational commitments, which leads to an intention to remain with the organisation and extra effort on behalf of the organisation. In this way, the consultants have made a significant contribution to the underlying foundations of

engagement which have been adopted in this thesis. However, neither the ISR nor the CLC have reported on the interrelatedness of their specified engagement dimensions. The similarity in the result compared to some of the other engagement contributions demonstrates that although packaged differently, there are similar underlying themes in the contributions.

The SEM provides additional support for the inter-relations between each of the engagement dimensions. In both analyses (hierarchical regression and SEM) and in both samples it was found that the emotional engagement capabilities had a significant positive effect on the individual engagement outcomes. This indicates that having the emotional engagement capabilities are important in attaining the required engagement outcomes. Previous research has drawn attention to the importance of emotions at work (Brown 1996; Hochschild 1983; Sandelands & Boudens 2000). Sandelands (1988) noted the importance of feelings (and emotions) in the determination of specific outcomes, observing that they are linked to and part of behaviour, which provides support for this finding. The consequence for academics is that they need to have the emotional engagement capabilities (psychologically available, find meaning in their work, have the psychological resources and vigour) which will lead to increased individual engagement outcomes. If academics do not have the emotional capabilities to engage then it is likely that they will have lower individual engagement outcomes.

Emotions do not always need a cognitive assessment of the situation which supports the ideas proposed by Izard (1993). This begins to address RQ4 through the establishment of this specific pathway for engagement as well as identifying emotions as a key engagement dimensions for advancing academic engagement. This is especially so where the emotional engagement capabilities acted indirectly on the impact between the cognitive engagement capabilities on the individual engagement outcomes. So whilst the direct impact between the cognitive engagement capabilities and individual engagement outcomes was not always clear this was found to indirectly impact on the emotional engagement capabilities. This provides support for the third proposition (P3) however, the relationship is indirect. This indicates that the cognitive engagement capabilities do not always have a direct impact on the individual engagement outcomes; it does however, indirectly impact through the emotional engagement capabilities. The hierarchical regression noted that the calibration sample elicited a slight variation on the result of the impact of cognitive engagement capabilities on individual engagement outcomes. In this sample it was not a significant predictor. The zero order correlations suggest a significant positive relationship between these engagement dimensions on both of the samples. In the calibration sample the semi partial and part correlations were low and the zero order correlation was significant suggesting a potential indirect effect occurring through the emotional engagement capabilities. However, in the validation sample the zero order correlation between

the cognitive engagement capabilities and the individual engagement outcomes was weaker than the calibration sample. The accumulation of the results suggest that at the zero order level there is a significant relationship, however, when simultaneous testing of the paths occur (hierarchical regression and SEM) the other variables within the model are accounting for some of the variation in the relationship between the cognitions and outcomes.

Therefore the cognitive engagement capabilities do not always directly determine the individual engagement outcomes. In other words the cognition state does not always lead to the particular outcomes (affective commitment, job satisfaction, intention to remain with the organisation and not to be burnt out) as it sometimes indirectly impacts on the engagement outcomes through the emotional engagement capabilities. Cognitions have been described in the literature as an important dimension of the engagement process. In the academic domain Schaufeli, Salanova et al. (2002) noted that their conceptualisation of engagement is that engagement is an affective – cognitive state; cognitions in their research are linked with emotion. As outlined in Chapter 2 cognitions in the engagement process as an explicit dimension has largely been ignored in the academic domain, although Maitland (2007) did note that cognitive engagement is as equally important as emotional engagement. The ISR (2004a) (from a practitioner perspective) found that thinking is the intellectual understanding behind acceptance and support of the organisation's values and goal by its employees. But the group neglected to discuss how the 'think' dimension relates to their other engagement dimensions.

This thesis found that the cognitive engagement capabilities enable academics to be cognitively involved and available; and to have the capabilities to be psychologically present, as consistent with Kahn (1990). The findings on the pathways of cognitive engagement capabilities provide support for the existing literature that identifies a cognitive engagement component (ISR 2004a; Kahn 1990; Schaufeli & Bakkar 2004). The implications of this result are the identification and reinforcement of cognitions as important in fostering engagement. This raises the issue of causality and the direction of the relationships.

7.2.1.1. Directionality of the Engagement Pathways

It was argued in Chapter 4 that there is a directional relationship between cognitions and emotions (Section 4.1.1.3). There has been some discussion in the literature as to the directional relationship between emotions and cognitions (Lord & Kanfer 2002). The findings of this thesis provide support for proposition 4 (cognitive engagement capabilities impacting emotional engagement capabilities) and contributes further to addressing RQ4.

The strength of the relationship between cognitive engagement capabilities and emotional engagement capabilities in this thesis was found to be significant, suggesting that the thinking associated with the engagement capabilities (degree of involvement, intrinsic motivation, dedication, attention and absorption) will impact the feeling capabilities (availability, meaningfulness, psychological resources and vigour). This supports the assertions made by Scherer (1994) and Lazarus (1994), who identified the importance of cognitions facilitating the link between the environment (what is happening) and then the emotions and behavioural outcomes. Additionally, in the academic domain, Schaufeli et al. (2002) noted a link between the emotions and cognitions associated with an 'engaged state'.

The implication of a directional relationship between cognitions and emotions found in this thesis for academics is that in order to exhibit specific engagement outcomes academics require a cognitive assessment (Do I have the cognitive capabilities to engage?) and also an emotional assessment to lead to the specific outcome. This highlights the importance of providing both the emotional and the cognitive engagement capabilities in an effort to enable the specific individual engagement outcomes. If any part of this is underutilized or not encouraged or developed, then the impact on the outcomes could be quite drastic. What has not been clear in the past is the importance of the correct starting point to develop an engaged workforce. Indeed, most engagement contributors have neglected to identify the inter-relations between the dimensions of engagement. This thesis provides evidence that for business academics the initiating point for engagement is the cognitive engagement capabilities. In this way the thesis contributes to a new understanding of the relationship between the engagement dimensions. This is important for the management of academics in knowing how to enhance engagement for these knowledge workers. This may ultimately contribute to universities' competitive situations.

In this section it was demonstrated that the thesis found support for propositions 1, 2 and 4 and partial support for proposition 3. The partial support for proposition 3 was evident in the hypothesised indirect effect (H4d) of the cognitive engagement capabilities on the individual engagement outcomes through the emotional engagement capabilities. The thesis found support for engagement as the interaction of emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes (propositions 1, 2 and 4). This section identified that there is an interaction between the engagement dimensions which has not been thus far been reported in the literature as comprehensively. The next section explores the results in terms of their impact of the organisational characteristics on the engagement dimensions.

7.2.2.   The Impact of the Organisational Characteristics on Engagement

Two organisational characteristics were proposed (Table 7-3) to have an important antecedent influence on each of the engagement dimensions (individual engagement capabilities and individual engagement outcomes). These were the perception of organisational support and the core job dimensions. These were characteristics in which the university has some discretion to influence or control with the potential to drive engagement levels. Overall there was support for each of the organisational characteristics as antecedents to the engagement dimensions.

Table 7-3 Organisational Characteristic Propositions

Number	Proposition
Proposition Five P5	*Organisational Characteristics - A **supportive organisational environment** will have a positive effect on the **individual engagement capabilities (emotions and cognitions) and the individual engagement outcomes.***
Proposition Six P6	*Organisational Characteristics - The **design of the job** (job characteristics) will have a positive effect on the **individual engagement capabilities (emotions and cognitions) and the individual engagement outcomes.***
Proposition Seven P7	*The **design of the job** (characteristics) will positively affect the perception of a **supportive organisational environment**.*

The foundation of POS drawn from organisational support theory is premised on the belief that work is a social and economic exchange. The results from this thesis were mixed on the impact of POS on the engagement dimensions. Each of the samples yielded slightly different results. Importantly though, POS had a strong direct positive impact on the individual engagement outcomes. Eisenberger et al. (1986) acknowledged that POS is often considered a measure of commitment from the organisation to the employee, so therefore it would be expected that there would be a strong link between POS and the individual engagement outcomes (Eisenberger et al. 1997; Hutchison 1997; McFarlane Shore & Wayne 1993; Meyer et al. 2002; O'Driscoll & Randell 1999; Reid et al. 2008; Rhoades et al. 2001).

This result adds support to the wider research literature that links POS to various outcomes. In the validation sample the indirect effect through the emotional engagement capabilities was strong, so the results there indicate that the relationship between POS and the individual engagement outcomes is at times indirectly impacted through the assessment of the emotional engagement capabilities. In other words, perceiving that the organisation is supportive directly results in engagement outcomes, hence higher commitment and job satisfaction and less likelihood of quitting and lower disengagement and exhaustion. The indirect impact on the individual engagement outcomes through the emotional engagement capabilities suggests that academics may perceive that their university provides them with support, which then requires the emotional capabilities before resulting in the individual engagement outcomes. The supportive university environment arguably creates a reciprocal display of engagement outcomes by academics.

The relationship between POS and cognitive engagement capabilities was significant only in the calibration sample; this resulted in a negative beta value. The simultaneous testing of multiple regression equations as used in SEM can sometimes create a negative Beta value especially when the variance explained between direct and indirect effects in total equates to a figure larger than 1. In other words the paths between each of the dimensions of: job characteristics; the control variables; and POS; account for all the variance in POS, resulting in the negative value within the model. The zero order correlations between POS and the cognitive engagement capabilities were positive and significant in both of the samples suggesting that as POS increases so do the cognitive engagement capabilities. The negative beta value demonstrates that the level of analysis impacts on this result. The result suggests that POS in the calibration sample has a significant direct path to the cognitive engagement capabilities.

Using organisational support theory, if academics believed that their university supported them they are likely to reciprocate. To process this information would require a cognitive assessment of the engagement capabilities. The implication of this result is that POS is an important antecedent for the starting point of the development of engagement: cognitive engagement capabilities (see section 7.2.1). Perceptions of support can be driven through good leadership, access to work/life balance initiatives, good communication, participation and role clarity (Coetzer & Rothmann 2007; de Mello e Souza Wildermuth & Pauken 2008; May, Gilson & Harter 2004; Rama Devi 2009; Sinickas 2005).

Equally, the characteristics of the job yielded significant impacts on some of the engagement dimensions. It was propositioned that the job characteristics would impact the emotional and cognitive engagement capabilities and the individual engagement outcomes. There was no direct support for the job characteristics on the emotional engagement capabilities, in both samples. The core job characteristics do not directly impact on the feeling associated with engagement. Therefore for academics, the job dimensions do not impact on ability to develop the emotional engagement capabilities.

In both samples the core job characteristics had a direct positive effect on the cognitive engagement capabilities and individual engagement outcomes. This supports previous research in which the job characteristics was found to have a direct impact on the various outcome variables (Knudsen et al. 2003; Winter & Sarros 2002; Yoon & Thye 2002), as outlined in section 4.1.2.2. Additionally, the results of this thesis support previous engagement research linking the job characteristics to the dimensions of engagement. For instance Saks (2006)

identified the job dimensions as an important engagement antecedent. This was supported by engagement research by both May et al. (2004) and Olivier and Rothmann (2007). The finding from this thesis supports the wider research in the area. As noted in Chapter 3 (section 3.3) academics in their work roles are often characterised as having enhanced job dimensions. The job dimensions that Australian business academics have a significant impact on these two engagement dimensions.

The direct impact of the job characteristics on the cognitive engagement capabilities and the non significant direct relationship with the emotional engagement capabilities indicates an indirect effect. A strong indirect effect was found when testing for this relationship in both samples (section 6.7.3). This result supports the assertion made by Renn and Vandenberg (1995) and research by Feldman and Lynch (1988) where the core job dimensions impacted on the specific outcomes as a result of a person's individual affective response based upon their cognitive assessment of the dimensions. Therefore the job characteristics have a strong impact on the engagement dimensions, but first it requires the assessment of the cognitive engagement capabilities, which will then inform both the emotional engagement capabilities and the individual engagement outcomes. The strong cognitive engagement capabilities to emotional engagement capabilities link was established and discussed in an earlier section (in section 7.2). The result from this thesis acknowledges that the enhancement and reinforcement of the link between the core job characteristics and the cognitive engagement capabilities will result in the enhancement in the other engagement dimensions. This contributes to a greater understanding of the pathways and drivers for engagement.

The link between the job characteristics and POS was also ascertained (Proposition 7). There has been limited research associated with the directionality of the relationship between these two organisational characteristics, as often both are measured as antecedents together. Proposition 7 identified that job characteristics would act as an antecedent to POS and the results supported this contention. Due to a lack of strong literature support for the relationship an alternative model was tested where POS was the antecedent to the job characteristics. The results found greater support for proposed relationship than the alternative model (section 6.1.1) (the alternative model is presented in Appendix A5). This result supported Hutchison (1997) who found that POS was an immediate link between various antecedents and affective commitment. The antecedents tested were role related variables such as structural and work experiences. It was argued in section 4.1.2.3, that using the Hutchison's (1997) logic the antecedent job characteristics will impact on POS. The results of this thesis supported this logic and the job characteristics were found to have a significant impact on POS. In other words, this thesis has

shown that if a university supplies the core job dimensions (autonomy, task identity, task significance, skill variety and feedback from the job) as identified by Hackman and Oldham (1975, 1980), then academics will be more likely to view the university as supportive. This is important as both of these variables have then be linked to increased performance outcomes (Eisenberger et al. 1990; Gaiduk, Gaiduk & Fields 2009; Hutchison 1997; Knudsen et al. 2003; Meyer et al. 2002; Reid et al. 2008; Rhoades et al. 2001). Additionally, these findings bring additional research and clarification to this area.

The directional relationship between job characteristics and POS identified additional indirect effects. As previously noted, job characteristics had no significant effect on the emotional engagement capabilities and had a strong indirect effect with the cognitive engagement capabilities (section 6.6.1). Similarly, the relationship between the job characteristics and emotional engagement capabilities was found to be indirectly impacted through POS. This suggests that if a university supplies the core job dimensions then academics will perceive a supportive organisational environment which subsequently leads to them developing the emotional engagement capabilities to enable engagement. This result makes intuitive sense, as Izard (1993) argued, that emotions do not always require a cognitive assessment of the situation. It also provides additional support for Renn and Vandenberg's (1995) finding that the immediate response to the core job dimensions can at times be affective, but in the longer term it sometimes requires deeper cognitive thought which will then lead to affect or the feeling. These indirect effects provide additional insight into the engagement pathways for Australian business academics. These pathways highlight different ways in which engagement of business academics can develop, which is important to university HR managers wanting to drive engagement levels.

Overall, this thesis found support for both the organisational characteristics as an important part of the engagement process. This set of results answers RQ4 by identifying the paths for engagement, stemming in this case from the organisational characteristics in addition to providing some insights into academic engagement. POS had mixed support for the individual engagement capabilities and significant support for the individual engagement outcomes. There were both indirect and direct influences on each of the emotional engagement capabilities and the cognitive engagement capabilities. The job characteristics had a direct significant impact on the cognitive engagement capabilities and the individual engagement outcomes, and it was argued that there was an indirect on the emotional engagement capabilities through the cognitive engagement capabilities. The results support prior theorists who identified the importance of the core job characteristics and POS as key antecedents to dimensions of engagement (Kahn 1990; Macey & Schneider 2008; May, Gilson & Harter 2004; Olivier & Rothmann 2007; Saks 2006).

Chapter three identified these two organisational characteristics as important within the Higher Education sector; there are a number of other antecedent variables and potential drivers not explored within this thesis. Further research may want to extend and develop the breadth of the antecedents tested which may identify further drivers for an employee's investment in the organisation (Kelloway & Barling 2000).

Additionally, the results of this thesis show that there is a temporal relationship between the job characteristics and POS, where the job characteristics come first. This suggests that if academics perceive they have the core job characteristics then they are more likely to view the university as supportive. The implications of this are discussed in section 7.5. Furthermore, the job characteristics were identified throughout this research to be a key antecedent to the thinking capabilities and the engagement outcomes. The significance of this result is the direct influence the job characteristics have with the cognitive capabilities which was identified in the previous section as the starting point for engagement (section 7.2.1). The next section explores the contextual variables impact on the engagement pathways.

7.2.3.   The Impacts of Contextual Variations on Engagement

There was little support for the contextual variables in the model. Chapter 3 (section 3.4) had identified two main areas in which the context of the research may affect the results: the personal and structural organisational variables. The contextual variables provide additional information on the pathways of engagement and insight into the effect on academic engagement (RQ4).

Table 7-4 Contextual Variable Proposition

Number	Proposition
Proposition Eight P8	*Contextual Variables – The **personal variables** and the **structural organisational variables** will have a direct association with the **organisational characteristics** (perceived organisational support and job characteristics) and an indirect association with the **engagement capabilities** and **outcomes**.*

The personal variables are those that an academic has limited ability to change or alter such as age and gender. It was argued in Chapter 3 that academics over 55 years of age would contribute to a variation on POS and the job characteristics (section 3.4) because they may cling to notions of a golden era and be resistant to the changes experienced in the Higher Education sector. The results however, did not support this contention and that regardless of age, the perception of support and the core job dimensions were consistent.

Previous research in Higher Education had found gender differences contributed to perceptual differences too. Males and females were reported to differ on the levels of satisfaction, support, participation commitment (Lacy & Sheehan 1997; McInnes 1999; Winter & Sarros 2002). The results from this thesis found no support for gender directly impacting POS and job characteristics. In SEM the paths provided little strength and were subsequently removed, deleting this variable from the model. As explained in Chapter 6 removing non significant paths and variables does not increase model fit but it makes the model more parsimonious (Holmes-Smith et al. (2006). Both of the personal variables that were included in the model as potential controllers for variation on the organisational characteristics did not need controlling. However, future research may need to replicate this result.

Of the structural organisational variables (Go8 and higher lecturer levels), there were mixed results. The Go8 revealed a direct impact on the job characteristics but not on POS. As the Go8 are an elite branded set of universities in Australia with higher international rankings than the other university groups and greater research output, it was anticipated this group would differ on the job characteristics (see Chapter 3). The thesis has provided evidence to support this contention that where academics are part of the Go8 they rate their job characteristics more highly. However, despite this, Go8 academics consistently display perceptions of support in line with the academics from within the other university groups.

Similarly, it was predicted in Chapter 3 that academics at different classification levels would have different perceptions. Previous research had identified academics at the higher levels have different responsibilities than compared to the lower academic levels (Winter & Sarros 2002; Winter, Taylor & Sarros 2000) which consequently could indicate different characteristics of the job. This result was only found in the validation sample. The results of the thesis support this contention. However, despite this those at higher lecturer levels consistently display similar levels of support as the academics at the lower classification levels. Further research may want to test the relationships of these contextual variables more fully. The next section moves to a discussion of the final engagement model.

7.3. The Final Engagement Model

The final engagement model is presented in Figure 7-1. The figure identifies the interlinking engagement dimensions as supported in this thesis and supports a new holistic engagement. The dotted lines indicate the significant paths within the calibration sample and the solid lines indicate the significant paths in the validation sample. The major difference between the two models exists in the calibration sample having a significant path between higher lecturer and job characteristics, as well as POS and emotional engagement capabilities. In the validation sample

the difference existed on the path from POS and cognitive engagement capabilities as well as cognitive engagement capabilities and the individual engagement outcomes. With the exception of the path with the contextual variables, all other path differences between the samples were tested and argued as indirectly impacting through other variables (see sections 6.6 and 7.2). The figure also states the variance accounted for on each of the engagement dimensions, with the top number representing the calibration sample and the number underneath corresponding to the validation sample.

As evident in the final engagement model (Figure 7-1), the accounted variances are significant. In the calibration sample 77% of the variance in the individual engagement outcomes is accounted for by the variables within the model. Alternatively, in the validation sample 89% of the variance in the individual engagement outcomes is accounted for by the variables within the model. This result is quite substantial and it translates as not many other constructs are needed to have a near perfect model. In terms of engagement, the variables that were built into the common engagement constructs that were derived from the various engagement conceptualisations actually do represent a holistic engagement. The final engagement model provides support for the contention that engagement is all encompassing of state, role, behavioural, personal, job, work and organisational engagements.

This thesis has brought together many of the past constructs that had been linked to engagement and found that many of these dimensions were uni-dimensional approaches to the study of engagement. Consistent with the theory and empirical findings on engagement this thesis supports engagement as three common constructs which brings together many of the individual work connectedness variables that have been related to engagement by others in the past. Engagement is thus represented in this thesis as a multi-dimensional construct that encompasses many of the individual work connectedness variables. The model of engagement indicates the importance of all the engagement dimensions that were tested within this thesis. In support of the research by Kahn (1990), engagement was found in this thesis to have the dimensions of emotion, cognition and the response to these (outcomes). The model finds support for Izard's (1993) argument that the cognitions come before the emotions and the subsequent outcomes. In the development of engagement this indicates that the starting point in the model and this provides some insight to the paths of engagement.

The relationship between the cognitive engagement capabilities and emotional engagement capabilities indicates that once academics have established the cognition state associated with engagement, it allows them to develop the emotional engagement capabilities. This translates to the feeling capabilities, the emotionally/ affective dimensions, measured in terms of vigour,

197

availability, meaningfulness and psychological resources. Once the emotional engagement capabilities are established academics are then able to engage. This reinforces the direct link between the POS and the emotional engagement capabilities. Therefore to have the emotional engagement capabilities does not always mean that academics necessarily have to have the cognitive engagement capabilities. Instead, their emotional engagement capabilities could stem from the job characteristics through POS (see section 7.2)

The emotional engagement capabilities and the cognitive engagement capabilities were found in this thesis to have a strong impact on the individual engagement outcomes. For Australian business academics this indicates that to be engaged, first requires the core job dimensions, then both a supportive organisational environment and the cognitive engagement capabilities. The cognitive engagement capabilities provide the thinking capabilities that are required to engage at work in the university: being dedicated, involved, attentive, absorbed and intrinsically motivated. Once this is established academics then require cognitive engagement capabilities, which assist them in becoming psychologically present at work (Kahn 1992). Alternatively the core job dimensions can lead to the perception of a supportive organisational environment. Once academics have the job characteristics and supportive organisational environment they are able to engage the self at work, which then leads to the emotional engagement capabilities and the cognitive engagement capabilities.

These paths of engagement lead to the individual engagement outcomes (Figure 7.1). In other words, to be engaged academics will have both the emotional engagement capabilities and cognitive engagement capabilities and the resulting outcomes will consist of enhanced affective commitment and job satisfaction, without being exhausted, disengaged or having any intention of quitting the university. The model of engagement provides some insights into the requirements for the development of engagement in Australian business academics as well the model identifies pathways to the development of a new holistic engagement (see 7.5).
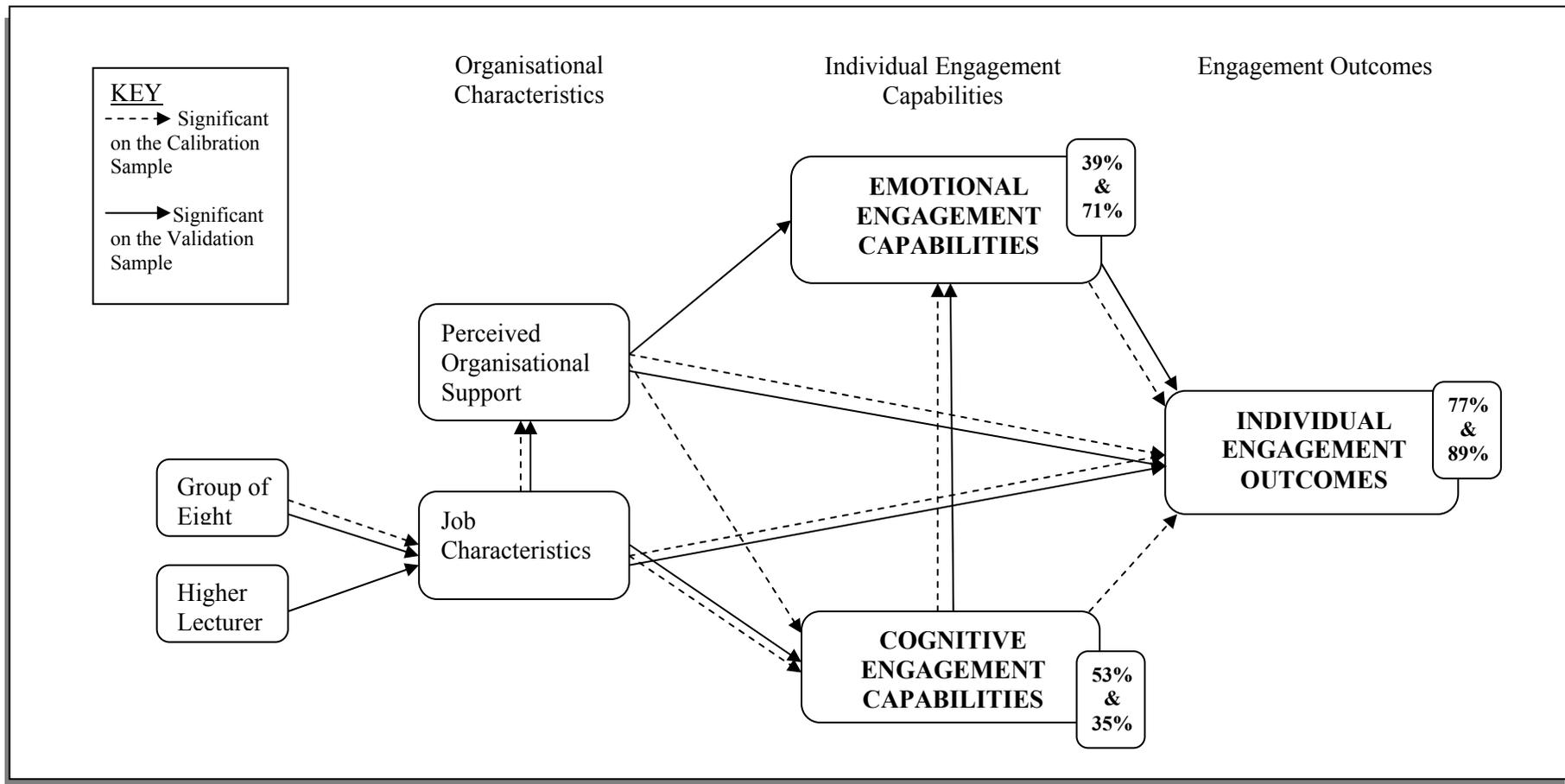
Figure 7-1 Final Engagement Mode

199

7.3.1. Engagement Model for the Group of Eight Universities

As noted above, the contextual variables presented variations for the engagement model particularly for those academics who worked within the Go8 university group. For this group, the job characteristics model was found to significantly impact on their perceptions suggesting that these academics vary on job characteristics compared to the other university groups. In both of the samples the result was consistent. Chapter 3 outlined this group as being distinctive from the other universities grouping. This suggests that academics in Go8 universities may require different drivers for cognitive engagement because their higher research output (Harman 2003), more elite universities and so forth could provide them important core job dimensions (task identity, task significance, autonomy, skill variety and feedback from the job). Though not a formal hypothesis, the Go8 universities fall in the top 300 of the ARWU (2008) and this may support the contention that high engagement may be linked to high performance workplaces, similar to high commitment/ high performance workplaces noted in research by Beer (2009). Future research may want to explore the links between engagement levels, in the context of the Australian University compared against the ARWU rankings.

7.3.2. Engagement Model for Higher Lecturer Levels

In addition to the Go8, those academics at higher lecturer levels (Professor and Associate Professor) were found to have a significant impact with job characteristics. It was anticipated that because more senior academics had greater discretion over their workloads there would be greater variation in their perceptions (see Chapter 3). Academics at Associate Professor and Professor levels are generally not restricted to teaching as their core function, but have opportunities for greater involvement in research as well as university (faculty, department) governance. Previous research has found significant differences in responsibilities, participation and involvement in the workplace between the higher and lower lecturer levels (Winter & Sarros 2002). For the engagement model presented in this thesis, the relationships are maintained when controlling for variation of higher lecturer group on the job characteristics. As specified by the nature of the role taken by Professors and Associate Professors this group has a greater core job dimensions, suggesting that this group may require more antecedent variables including greater diversity of job characteristics which may assist in developing the cognitive engagement capabilities. This is not to suggest that job characteristics are not important, but like Go8 academics, job characteristics may not be as an important driver for the higher classified academic group. Future research may want to further explore the drivers for engagement in the Go8 and higher ranked academics.

7.4. Defining Engagement as a Multi-Dimensional Construct

The model of engagement developed in this thesis adds considerably to the current definitions of engagement. This section discusses each of the contributions defining engagement as a multi-dimensional construct.

Chapter 2 presented an in-depth analysis of the previous research on the construct of engagement. It was highlighted that many of the measures and variables associated with engagement captured individual work connectedness variables. These variables encapsulated ideas associated with the connection to the job; however, many researchers have approached the study of engagement uni-dimensionally. This can be seen in engagement scales that represent singular variables or a few variables together. The resulting impact for engagement research has been that there is no conceptual clarity or definitional consensus as to what engagement actually is and what it incorporated. This has been argued as a 'muddying of the water' with very little clarity for engagement (Saks 2008).

This thesis approached engagement with the intention of drawing together the many dimensions in an effort to make sense of the domain. This was established through the linking of many of these work connectedness variables to emotional, cognitive and outcome engagement dimensions; dimensions that underpin many of the contributions to engagement. The results have found that an all encompassing concept of engagement does incorporate the work relatedness variables associated with engagement as reported in the previous literature providing support for the first aim of the research. This highlights the multi-dimensional of engagement. This is evident in the variance accounted for in the engagement model in both of the samples (Figure 7-1). In addition, the approach taken to defining engagement in this thesis suggests that engagement is a multi-dimensional construct composed of emotional and cognitive engagement capabilities and individual engagement outcomes. This overarches previous research that investigated engagement as a more specific dimension for example engagement to; organisation, employee, job, work, role, personal and state. This thesis has approached engagement as an all encompassing term which incorporates all those forms of engagement. This was established through the relation of the many engagement dimensions to the underlying emotions, cognitions and outcomes. The implication of engagement as an over-arching term may provide a better representative picture of what engagement looks like.

There have been many calls in the literature to bring consensus to the engagement domain (Macey & Schneider 2008; Newman, DA & Harrison 2008; Saks 2006, 2008) and this thesis answers those calls through this systematic approach. This approach is unlike any other

attempting to bring definitional consensus to the area. Therefore, according to the findings of this thesis: to be fully engaged at work requires an assessment of all the engagement dimensions, rather than any one of them on their own, the benefit for organisations can be seen in employee performance and subsequent bottom line impacts (Echols 2005; Harter et al. 2002; Towers Perrin 2003). So whilst it is imperative to have an engaged workforce the new conceptualisation provides an all encompassing approach focused on all dimensions of engagement, simultaneously. The new conceptualisation of engagement identifies the specific pathways for engagement. The model provides support for engagement as a multi-dimensional holistic construct that overarches the many conceptualisations of engagement. The holistic engagement developed within this thesis highlights some potential limitations with other engagement conceptualisations that focus on a small number of engagement factors; these conceptualisations do not encapsulate for the full account of engagement.

7.5. Implications for Academics and the Higher Education Sector

The results of the thesis have revealed a considerable number of implications for the management of business academics within the current Australian Higher Education sector. The developed model presents engagement in such a way that key antecedents were identified in addition to the engagement dimensions. Engagement was found to be the complex interaction of emotional and cognitive engagement capabilities which subsequently impacts on the individual engagement outcomes, driven by the organisational characteristics. More specifically, the starting point for the development of engagement within this sector is the cognitive engagement capabilities, which then impacts on both the emotional engagement capabilities and individual engagement outcomes. This section will discuss the implications in the wider context of the Higher Education sector and then provide practical implication for the direct managers of academics (Head of Department or School) and the more general for the HR managers in universities.

The model identifies what an overarching engagement looks like for Australian business academics. It identifies the key antecedents (job characteristics and POS) as well as providing the causal sequence of engagement dimensions to lead to the desire engagement outcomes. Previous research has highlighted the links of many of these outcomes (commitment, intention to remain and job satisfaction) lead to enhanced overall organisational performance and the organisations bottom line (Bakker, Demerouti & Verbeke 2004; Bamber et al. 2009; Beer 2009; CLC 2004; Harter, Schmidt & Hayes 2002; Iaffaldano & Muchinsky 1985; Judge et al. 2001; Luthans, Fred. et al. 2008; Van Scooter 2000; Williams & Anderson 1991).

As outlined in Chapter 3 academics in the Australia Higher Education Sector have been faced with many changes, the changes to the Higher Education system have been driven by globalisation, technological advances, increased competition and societal changes (Coaldrake & Stedman 1998; Green et al. 2002). These changes have brought about major governmental reforms, including the dismantling of the binary system, changes to funding allocation (Molony 2000), and an increased need to be more competitive and self managed (Eveline 2004; Newman, F, Couturier & Scurry 2004; Schramm 2008). The result for the management of Higher Education has seen a move from traditional collegial management practices to an increased managerialism (Gallagher 2000). Managerialism has seen a greater focus on accountability and efficiency for universities and the academics within them (Newman, F, Couturier & Scurry 2004). The result has been detrimental for the academic, with academics now faced with issues of job intensification, job insecurity; role overload; increased stress levels; and an altered quality of life (see section 3.2). The result on work connectedness variables has seen academics as less satisfied (Lacy & Sheehan 1997), less motivated and committed (Ferrer & VanGramberg 2008; Winter & Sarros 2002; Winter, Taylor & Sarros 2000). The imperative is on university management to ensure that academics are working at their highest capacity and making their contribution significant. The current results provide a model of engagement in which the overall engagement of academics can be developed.

Human resources have been identified one of the key resources for competitive advantage in organisations (Huselid, Becker & Beatty 2005; Kang, Morris & Snell 2007). In the current climate within a sector that has been faced with many changes and an enhanced competitiveness, the management of university academics is imperative. The benefit of the current research is that the engagement model that is provided demonstrates what it is to be engaged as a business academic. Academics are knowledge workers and for the strategic benefit and competitive advantage of the university this group needs to be managed effectively. Universities need to recognise those academics that are valuable, rare and inimitable (Barney 2002) for competitive leverage. Knowledge is now a marketable commodity and this is especially prevalent in the Higher Education sector, where knowledge is the commodity. Leveraging this academic capital with the knowledge creation capabilities is imperative for the competitiveness of universities. This can be seen as problematic especially if academics as seen as investors of their knowledge in the university (Kelloway & Barling 2000); they control the when and how they release their knowledge. Kang et al. (2007) argue that to leverage knowledge effectively requires innovative HR practices. Within the recent literature on engagement and related work connectedness variables the HR practices have been seen as a key driver (Kinnie et al. 2005; Wright & Kehoe 2009). The HR architecture, introduced in Chapter 2 (section 2.1) developed by Lepak and Snell (1999, 2007) is a powerful mechanism for delivering organisational goals through the

development of human resources. It is a working model for managing human capital (Boxall & Purcell 2008) and knowledge based HR strategies (Purcell et al. 2009). Universities need to recognise those academics that are unique and contributing to strategic value of the organisation (Lepak & Snell 1999, 2007). The architecture leverages human capital through linkages with the organisational strategies aligned with the different groups with the organisation. This can lead to enhancements in engagement levels of academics. The strategic management of human capital and recognition of the knowledge worker as contributing to strategic value goes against the grain of managerialism. If the intention of universities is to compete through their human capital then this requires a significant shift away from managerialism; to a strategic focus on the knowledge worker as the key to universities competitiveness.

HR managers need to recognise that academic engagement has a complexity that requires special attention and focus. Especially, if as suggested by Felin and Hesterly (2007) the effective leverage of the human capital and their knowledge can result in the value creation capabilities. Grant (2008) makes this link and argues that humans are the key capital resource for competitiveness. And as universities are being faced with increasing competition driven by globalisation, ICT and government (Newman et al. 2004), then it is in the universities benefit to understand engagement as a link to value creation and competitiveness.

It was noted in Chapter 2 that within the current literature there are many studies that link an engaged workforce to enhanced individual performance, organisational performance and the bottom line of the organisation (CLC 2004; Echols 2005; Harter et al. 2002; Harter et al. 2003). Engagement is defined as having the cognitive and emotional engagement capabilities in which to engage the self fully at work and contribute to the success of the organisation through the specific engagement outcomes. This is demonstrated in employees affectively attached, satisfied, not wanting to seek out employment elsewhere, and not disengaged or exhausted from the work, the job, or the organisation. For competitive edge and for the overall enhanced performance the imperative for HR managers is the development of their human capital (Lepak & Snell 1999, 2007) and the management of their core talent (Collings & Mellahi 2009; Lawler 2008; Schiemann 2009). The next section will explore the specific implications for practice for the management of academics in order to develop an engaged workforce.

7.5.1. Implications for Practice and Policy

The results of this study have provided some key implications not only for research but also for practice. The model of engagement has demonstrated that the cognitive engagement capabilities are the first dimension of importance when developing engagement, then the emotional engagement capabilities which will lead to the individual engagement outcomes. In the context

of the Australian Higher Education sector, academics are closely managed by their immediate Department (School) head. The Department Head is often the key driving manager who can influence the engagement of academics; therefore these leaders become a key driving force in the determination of academics' engagement levels. University HR managers are also influential in the engagement process despite being at some distance from the direct management relationship. HR managers potentially influence engagement through policies and practices that affect academics and how they view the university. The implications for policy and practice at both levels (Department and University) are considered important for the cognitive engagement capabilities and the emotional engagement capabilities together. This section discusses briefly a set of recommendations for practice emerging from the findings of this thesis along with supportive research in the field:

Enhance Communication Channels

Engagement can be enhanced by increasing communication channels because this leads to greater cognitive awareness of job characteristics which this thesis has confirmed as a precursor of engagement. In a university setting this can be facilitated at a local level by the Head of Department or School through instigating a set of informal (social and research oriented) as well as formal (targeted issue meetings and newsletters) on specific areas of interest to academics and the Department or School. At university level, bringing academics from different parts of the university together in discussions of the same can be facilitated by the HR office. By involving academics more closely through communication channels to discuss issues such as the expectations of their job or even more general university issues there is a corresponding impact on specific dimensions of job involvement, intrinsic motivation, dedication, vigour, absorption and attention (Bakker et al. 2007; Coetzer & Rothmann 2007; Sinickas 2005).

Meet the Core Job Dimensions

The job characteristics model identifies task variety, task significance, skill identity, autonomy, feedback from the job as the core job dimensions important for engagement (section 3.3.2). This thesis has confirmed the importance of the job characteristics as a key driver for enhanced engagement. In particular, these dimensions have been found to impact on job involvement, intrinsic motivation and meaningfulness (Winter et al. Hackman & Oldham 1975, 1980; May, Gilson & Harter 2004; Nogradi & Anthony 1988; Winter & Sarros 2002; 2000). In academics the core job dimensions have been identified as motivating factor (Winter & Sarros 2002; Winter, Taylor & Sarros 2000) and the results of this thesis provide support for the impact on engagement. At a Departmental level, Heads need to be aware of these dimensions when allocating academic workloads and ensuring to obtain feedback on them during performance review.

Redesign Jobs as necessary

Related to ensuring the Core Job Dimensions are met is the task of redesigning the current job to meet and enhance core job dimensions. Research has found that jobs redesigned in this way impact positively on engagement through Job involvement and Intrinsic Motivation (Hackman & Oldham 1975, 1980; Orpen 1997). The results from this thesis confirmed the significant role that the job characteristics have on the cognitive engagement capabilities and the individual engagement outcomes. Providing support for job redesign as a mechanism to drive engagement through the core job dimensions.

Provide Role Clarity

Clarity of the expectations required from the job contributes to an enhancement of engagement as confirmed through the identification of POS as a key antecedent to the engagement dimensions. Research has found that clarity of expectations positively impacts on Job Involvement, Intrinsic Motivation, Dedication, Vigour, Absorption, Attention and Meaningfulness (Coetzer & Rothmann 2007; Hallberg & Schaufeli 2006; Orpen 1997). Universities can facilitate role clarity for academics through clear communication of roles and ensuring that academics' skills are further enhanced through professional development opportunities. Enterprise Agreements should be clear on roles and pay structures for academic staff. And where changes occur within universities provide clarity to the role impact.

Recognize Good Work

Recognizing the good work of academics has been found to positively affect Intrinsic Motivation, Dedication and Absorption (Coetzer & Rothmann 2007; Deci 1975; Latham & Ernst 2006; Latham & Pinder 2005; McDade & McKenzie 2002; Winter et al. 2000). To recognise good work requires the perception of a supportive organisational environment, which the results confirmed a precursor to engagement. Recognition can come through formal and informal avenues. Informally, Heads of Departments can, through personal congratulations and recognition, acknowledge the input of academic staff members. Formally, recognition can be given through correspondence within the department (email or in department meetings) circulated to all members of the Department. In addition, recognition could come through more formal avenues such as professional recommendations (commendations) recognised in performance reviews of the individual academic. Opportunity to be recognised at higher university level, through award ceremonies, that recognise all dimensions of the academic contribution are another way that rewarding work contributes to engagement and many universities employ these sorts of schemes.

Provide a Supportive Environment

By offering support in all dimensions of one's job, can drive engagement as supported within this thesis. Previous researchers have shown that engagement is positively enhanced through the impact of a supportive organisational environment on Intrinsic Motivation, Dedication, Absorption, Vigour and Meaningfulness (Bakker et al. 2007; Coetzer & Rothmann 2007; Olivier & Rothmann 2007). Support should come from the academic's direct supervisor as well as from University programs and activities. One important support mechanism for academics is the accessibility and availability of the Department Head who should consider policy development aimed at 'open door' approaches to his or her staff.

Develop personal growth opportunities and self esteem

Engagement can be enhanced through providing opportunities for growth and development through the awareness of the core job dimensions and a supportive organisational environment as supported within this research. Providing personal growth opportunities for individuals in their jobs has been found to positively affect Job Involvement, Dedication, Absorption and Attention (Coetzer & Rothmann 2007; Lawler & Hall 1970). These factors have been found to be important in fostering engagement amongst academics. Personal growth opportunities can be developed by providing variety within jobs, opportunities for learning and building independence in the management of individual's work. This is a key role for a Head of Department, particularly around the performance review interview focusing on professional development and providing advice on opportunities for the individual. In particular, Heads should be actively involved in providing advice and counselling aimed at career development of their academic staff. Providing group learning opportunities for the Department as a whole is another way that academics can share a learning experience with their peers.

Career Management Counselling and Advice

Related to personal growth opportunities (above) offering academic staff career management and counselling advice can enhance engagement through increased Job Involvement (Zhou & Li 2008). This is driven from a supportive organisational environment without which there would be little availability for counselling and career advice. Developing formal career progression planning could also assist in identifying opportunities for personal growth. At the HR level offering broad ranging professional development opportunities, policies aimed at advice for career progression planning.

Provide Challenge Work Opportunities

Providing opportunities to meet sufficiently challenging and interesting (innovative) goals can be linked to increased engagement through intrinsic motivation, dedication, vigour, absorption,

and meaningfulness (Bakker et al. 2007; Coetzer & Rothmann 2007; de Mello e Souza Wildermuth & Pauken 2008; Deci 1975; Winter et al. 2000). The results supported the core dimensions as one way to create an environment in which there is opportunity for challenging work, as demonstrated with academics from the Go8 universities. This can be driven at the Department level through the development of research areas that fit the profile of the researching academic and a commitment to exploring varying teaching methods. At the higher management levels of academics this may translate as the need for greater funding to explore research opportunities and innovative teaching practices.

Provide Comprehensive Feedback

As a core job dimension, the results of this thesis supported enhancing engagement by providing comprehensive feedback through the links with intrinsic motivation, job involvement, dedication, vigour and absorption (Deci 1975; Hallberg & Schaufeli 2006; Winter et al.2000). To develop comprehensive feedback at the Department level may require a mentoring system for early career academics in an effort to give professional feedback from experienced staff members. Further, developing a system of review within the department for academic research; review from peers. Performance reviews performed by the Head of Department aimed at developing areas of growth, opportunity and development for the academic. In contrast, policy development at the HR level could aim to develop uniform approaches to performance review and feedback, driven by a need to promote growth and development of the individual academic.

Provide a Climate of Participation

Increased participation in the workplace can assist in developing the engagement of the academic, research has shown that participation significantly impacts on dedication, absorption, vigour and meaningfulness (Antonovsky 1987; Coetzer & Rothmann 2007). Participation can drive the perception of support in universities, which was found to be an antecedent to the enhanced engagement within the academic sample. Participation at the department and school level can be promoted through emails and meetings, opening issues to discussion and debate. More formal avenues would include instilling academics within decision making committees, especially on the governance of the department and school. At the higher university levels this may mean instilling greater levels of academic staff within university committees, to give them a greater voice in the governance of the university.

Balancing Work and Life

Providing opportunities to balance work and life has been found to increase engagement through the enhancement of meaningfulness, availability and psychological resources (de Mello e Souza Wildermuth & Pauken 2008; May, Gilson & Harter 2004; Olivier & Rothmann 2007; Rama

208

Devi 2009). At the department levels developing a personal understanding of the individual academic, sympathetic to needs based on external dimensions. At the HR management level developing enhanced work-life balance policies; using policy development strategies involving academics from throughout the university.

Ensure Work Role Fit

A match between the individual work-role and self concept can enhance engagement through meaningfulness, availability and psychological resources (May et al. 2004; Olivier & Rothmann 2007). Work role fit would suggest a greater fit with the core job dimensions, which is a demonstrated driver of engagement within this thesis. The Department Head may provide mechanisms to ensure a match between work role and academic self concept, through maintaining up to date records on research and teaching areas, and potential future areas for research and teaching and an ongoing dialogue with academics around their fit with this direction. This should be followed by developing and altering work- roles to suit individual talents. This will ensure a greater match with the work-role to the individual.

Good Leadership

Having good leadership can enhance engagement through job satisfaction, commitment and increased effectiveness at work (Avolio et al. 2004; de Mello e Souza Wildermuth & Pauken 2008; Jensen & Luthans 2006; Papalexandris & Galanaki 2009; Rama Devi 2009). Leadership would provide the perception of greater support from the organisation, which will enhance engagement. At the HR level within universities this maybe developing training for Department Heads to develop their leadership skills. These are the direct managers of the academics and in the closest leadership position with the potential to influence the academic with their leadership skills.

This section has provided some practical implications of the results of this thesis as they apply to academics within the Higher Education sector. The practical recommendations are aimed at the Department Heads and higher university manager levels, including HR managers. The practical recommendations present key ways in which the engagement model developed in this thesis can be brought into practice in universities to develop the engagement of academics. The next section explores to implications of the research more generally for engagement researchers.

7.6. Implications for Engagement Research

The implications from the findings of this thesis for research on engagement are considerable. This section briefly overviews the contributions of the thesis to the engagement research domain

before moving to specifically address areas which present themselves as promising research avenues given the findings of this thesis.

This thesis has brought together the many engagement contributions in such a way to develop an all encompassing concept of engagement. This was achieved through the linking of the major engagement contributors from both the academic and practitioner domain to an underlying framework of emotion, cognition and outcomes.

This new more holistic approach to engagement has the benefit of bringing together a rigorous evaluation of the research contributions together with statistical support and robustness of a quantitative model. One of the reasons for clarifying the engagement research has been the diverse approaches to the study of engagement. Chapter 2 presented the plethora of contributions and it was noted that whilst the academic studies were credible and rigorous. The many contributions from the organisational consultants lacked sufficient academic rigour and have not opened their measures to independent scrutiny and discourse. Further, these contributions from the consultants add to the definitional confusion (Newman, DA & Harrison 2008; Saks 2006, 2008), partly because their aim has been to sell particular engagement products to organisations which has led to a variety of specialised and unique engagement instruments.

Engagement from both research and consultant domains has given rise to different formulations of engagement such as behavioural, employee, role, personal, state, organisational, job and work engagement. The results of this thesis found that by synthesising engagement down to its core elopements that it is essentially composed of the cognitive engagement capabilities, emotional engagement capabilities and the individual engagement outcomes. In doing so the thesis used a unique method in which to develop the holistic engagement approach. By approaching each of the engagement dimensions as common underlying constructs this study allowed the linking-in of the different research contributions to the conceptual framework. The implications for the engagement arena, is that some of the current measures of engagement can be successfully linked to other engagement measures. This means that the measures are potentially related and capture similar domains. Further research linking the different engagement measures may need to focus on the distinctiveness of any one measure in light of the current findings.

The engagement model tested had the three engagement dimensions as specified (emotional, cognitive and outcome dimensions). Further research may want to test engagement as over arching each of the common engagement dimensions. The Cronbach alpha levels of the composite scores on each of the dimensions as reported in section 6.4 of Chapter 6 hold as a possible indicator of a third higher order construct. This was not tested within this study due to

the problematic nature of testing for third higher order constructs. This type of analysis requires a much larger sample size; future research could explore this concept further.

Furthermore, the directionality of the link between cognitions and emotions at the broad level has been faced with debate (see section 4.1.1.3) (Lord & Kanfer 2002). Using the Izard's (1993) logic that emotions can occur automatically and lead to a response without a cognitive assessment, this thesis supported the observation that the cognitive engagement capabilities will lead to the emotional engagement capabilities. This adds confirmation to the current cognition/emotion debate that cognitions need to come first especially in the development of engagement. This is especially evident in the strength of the relationships between cognitive engagement capabilities and the outcomes which is being indirectly influenced through the emotional engagement dimension. Conformational research could further test the cognition/emotion/ outcome engagement link.

This research also found a directional link between the job characteristics and POS. Previous research is limited in offering a directional link between the two. Brown (1997) argued that POS mediated the link between dimensions of the job and outcomes, but the specifics of the job characteristics were not the same. The implication of this result in this context is that academics require the core job dimensions, which then results in an assessment of a supportive work environment. Hypothetically this directional result may be transferable to other sectors, and it is worth considering for future research to gain added support for the directionality of the relationship.

7.6.1. Transferability of Model

The model of engagement development within this thesis presents some confirmations based on past research and this section will explore the transferability of the model. Because the thesis used a model derived from previous research (For instance Kahn 1990; May et al. 2004) and from the consultant researchers ISR (2004a), CLC (2004) and Towers Perrin (2006) this provides potential transferability of the engagement model on two levels. Firstly, within universities this model could be transferable to academic staff in faculties other than business and could be transferrable to general or professional staff employed by universities. Secondly, the model of engagement may be transferable to other employment sectors, particularly those which employ knowledge workers. Clearly, there is an avenue for further research to provide confirmation of the model presented in this thesis by investigating it in other employment situations.

In summary, the results based upon the model of engagement provide some important implications for the engagement research on a general level. The potential transferability of the engagement model was discussed. The next section will summarise the future research questions as a result of the findings within this thesis.

7.7. Future Research Directions

In summary, further questions have arisen as a result of this research. These further research directions are bringing together all the research recommendations indentified within this thesis;

- Verification of Current Findings. Further research may want to verify and confirm the current results, in the same and alternate sectors. Further supporting the link between cognitive engagement capabilities, emotional engagement capabilities and individual engagement outcomes. In addition further research may want to find addition support for the job characteristic to POS link.

- The Antecedents and Controls. Further research may want to explore other potential antecedents in addition to the job characteristics and POS. Further research may want to verify the relationship of the control variables on both the organisational elements (antecedents). In addition for the Go8 and higher lecturer levels expanding the job characteristics because this is where variation was found or other potential drivers for engagement (antecedents).

- The Measures. Further research may want to explore the use of other measures that represent the constructs tested within this thesis. For example psychological safety which was identified as contributing to the conceptualisation of engagement but excluded from the analysis due to poor internal consistency.

- Academic workload classification. Future research may want to explore engagement in the context of academics that are teaching only as a comparison to fully researching academics (no teaching) and mixed teaching/ researching academics. The results from this study identified the importance of the job characteristics and perceived organisational support as key precursors to the development of engagement, and the levels of these precursors may alter given the different workload classification.

- High engagement high performance workplaces. The results of this thesis identified the Go8 as varying on the core job dimensions against the other university groups. A discussion in section 7.3.1 identified that perhaps high performance workplaces have higher engagement levels. This could be explored by measuring engagement levels against the university ranking on the ARWU list.

- Qualitative Support. Further research could further support this research with a qualitative assessment of the model for added robustness and illustrative real life examples to support the model of engagement.

Due to the exploratory nature of the present research, there are many areas for future research. This is a summary of the future research directions identified within this thesis.

7.8. Chapter 7 Summary

This chapter presented a comprehensive discussion of the results in light of the previous literature. The chapter began with an assessment of the research implications, a discussion of the key findings in relation to the literature and the propositions developed in Chapter 4. Beginning with each of the common engagement constructs, emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes, the chapter moved to a discussion of the key relationships between the variables.

It was found that the term engagement is an all encompassing term consisting of the many engagement contributions. It was found to be an overarching concept of emotions, cognitions and individual engagement outcomes. This was consistent with the research literature. It was established that the engagement of business academics begins with the cognitive engagement capabilities which then impacts on the emotional engagement capabilities and leads to the individual engagement outcomes. Support was found for the literature linking the organisational characteristics of the job characteristics and POS as antecedents to engagement.

The final academic engagement model was presented and discussed in light of the literature and the transferable meaning and implications for research in the area. The Go8 and higher lecturer levels were found to cause variation on the job characteristics indicating that these two groups need to be controlled for.

The chapter concluded with a discussion of the specific implications of the engagement model. First, for the management of academics in the Higher Education Sector, presenting a discussion and resulting in a list of recommendations for practice. The recommendations identified ways to develop engagement for business academics. The chapter then discussed the implications for engagement research, identifying the overarching approach and the directional relationship between the engagement dimensions as being the key implication. The final implications imply more broadly the transferability of the model and identification of areas for future research. The next chapter will outline the key conclusions to be made from this study.

Chapter 8 : SUMMARY AND CONCLUSIONS

Employee engagement has increasingly become an important area of research for organisations, particularly in an effort to get the most from their human capital. This thesis has demonstrated that much of the engagement literature comes from three major discipline areas: the management scholars, the psychologists and the consultant/ practitioner. However, the breadth of the engagement research has led to a lack of consensus and definitional confusion. This thesis developed a conceptualisation of engagement as an integrated entity that encompasses cognitive and emotional aspects which together give rise to engagement outcomes.

The previous chapter provided a discussion of the results in line with the relevant literature. The full implications of the results for the management of academics were discussed as was the identification of areas for further research. This chapter begins with a review of the thesis, covering the development of the conceptual ideas through to the findings and discussions of the results. The review focuses primarily on how this research has addressed the aims and answered the four research questions. The chapter ends with the key conclusions and a discussion of the implications of these results.

8.1. Review of Thesis

This research has brought together many of the engagement concepts found in the international research on the topic in an effort to bring some consensus and understanding to the domain through the creation of an overarching conceptualisation of engagement. The first aim of the research was to bring clarity to the current definitions of engagement through identifying the constructs and concepts that contribute to engagement from the academic and practitioner frameworks (Section 1.1). This was achieved through identifying the three underlying dimensions of cognitions, emotions and outcomes which underpin most engagement research and reflecting Kahn's (1990) seminal work (Chapter 2). It was recognised that there is an interaction, and overlap between the three engagement dimensions (ISR 2004a, 2004b) and this observation was used to drive the development of the conceptual framework (Chapter 4). The dimension Kahn termed 'physical' engagement, was re-termed for the conceptual framework to encompass wider outcomes than only the physical. A more accurate term was used instead: individual engagement outcomes.

The three engagement dimensions became the common engagement constructs (emotional engagement capabilities; cognitive engagement capabilities; and individual engagement outcomes) used for the thesis. The thesis moved on to provide insight into the dimensions that shape engagement in business academics in Australia. In addition to the engagement dimensions, two specific organisational characteristics were introduced into the engagement model as key antecedents impacting on engagement. These were: the perception of organisational support and the characteristics of the job. Further, due to the specific context in which the research was to take place, the Australian Higher Education sector, the contextual dimensions: personal variables and structural organisational variables were identified and built into the conceptual model of engagement. The conceptual model was built on eight key research propositions which translated into 23 testable hypotheses. The final engagement model was then developed (section 8.1.2).

8.1.1. Engagement as Capabilities and Outcomes

It was necessary to measure and establish each of the engagement dimensions as common underlying constructs that linked the variables together, and had the properties representative of higher order constructs. In support of RQ1 and RQ2, Chapter 4 detailed the theoretical and empirical arguments for joining the variables together (see section 4.2). The results supported the contention that there was a shared variance between the variables of meaningfulness, vigour, availability and psychological capabilities that indicates that the constructs have the properties of a higher order construct termed emotional engagement capabilities. This was defined as the feeling capabilities needed to engage the self at work. In addition, the variables of absorption, attention, dedication, job involvement and intrinsic motivation also had shared variance which indicated the common underlying construct, cognitive engagement capabilities. This was defined as the thinking capabilities needed to engage the self at work. Furthermore, affective commitment, job satisfaction, intention to quit (reversed), disengagement (reversed) and exhaustion (reversed) shared variance indicated the properties of a higher order construct termed individual engagement outcomes.

This approach was unlike any other used in attempting to bring an understanding to the engagement domain (RQ1 & RQ2). The results suggested that many of the current variables used to measure engagement (and its various iterations) can be linked back to this underlying engagement conceptualisation of emotional, cognitive and physical elements (Kahn 1990). Other research had developed and tested Kahn's engagement ideas (May, Gilson & Harter 2004; Olivier & Rothmann 2007) but were limited due to the focus on personal engagement at work only and neglecting the role of the other engagement

contributions. This thesis, has therefore advanced knowledge in this area by has developing a more holistic notion of engagement. The next section explores the contribution of the thesis in identifying the nature of the relationships between the engagement parts.

8.1.2. Model of Engagement

The results of this thesis support a new conceptual model of engagement based on the many contributing research efforts to the engagement domain. The conceptual framework developed in Chapter 4 argued for various relationships between the common engagement constructs (potential higher order) and the other antecedent variables. The model was tested in a hierarchical regression and then in a full structural equation model (Chapter 6). To enhance the robustness of the model and associated findings the conceptual engagement model was tested and validated in two samples: the calibration and the validation sample. Support was found for most of the hypothesised relationships.

Specifically the thesis has established that to understand engagement in an academic context there are a set of complex relationships between each of the dimensions. From the contextual perspective the model varies across lecturer levels (lower and higher levels) and according to whether the employing university is part of the Go8 university group. The organisational characteristics (having a supportive university environment and the core job characteristics) within the model had strong relationships with each of the engagement dimensions, both directly and indirectly. This supported the contention that both of these organisational characteristics are important antecedents on each of the engagement dimensions. The characteristics of the job were found to have a stronger impact on perceptions of support within the model than perceptions of support on job characteristics. This indicates that the having the core job dimensions (characteristics) will lead to the perception of a supportive organisational environment.

This thesis has found that the key engagement relationships indicated strong support for the directional relationship between cognitive engagement capabilities directly impacting the emotional engagement capabilities. This finding adds to the discussion in the emotion/ cognition debate (Izard 1993; Lazarus 1994; Sandelands & Boudens 2000; Scherer 1994). This research adds to the discussion that cognitions pre-empt emotion. The directional relationship between the cognitive engagement capabilities and the emotional engagement capabilities impacted on the strength of the relationships with the individual engagement outcomes. The path between the emotional engagement capabilities and the individual engagement outcomes are strong due to the indirect effect of cognitive engagement

capabilities on individual engagement outcomes through emotional engagement capabilities. Consequently, the relationship between cognitive engagement capabilities and individual engagement outcomes is not as strong due to the indirect impact through emotional engagement capabilities. Essentially, the organisational characteristics act as antecedent predictors (directly and indirectly) on the engagement capabilities and outcomes (RQ3 & RQ4). The engagement capabilities then also (directly and indirectly) impact on the individual engagement outcomes (RQ3 & RQ4).

These results indicate that engagement of Australian business academics is developed through having the core job characteristics (autonomy, skill variety, task identity, task significance and feedback from the job) and a supportive university environment. These factors together result in all the engagement dimensions operating to allow academics to develop the capabilities to engage (cognitive and emotional) and thus becoming psychologically present at work (Kahn 1992) and displaying engagement behaviours and outcomes. Academics will exhibit engagement outcomes by having higher affective commitment, job satisfaction, a decreased intention to quit, decreased disengagement and exhaustion. In addition, to develop the individual engagement outcomes fully requires not only the individual engagement capabilities but also the organisational characteristics (directly and indirectly through each of the individual engagement capabilities). This presents a specific model in which to drive universities competitiveness through their academic knowledge workers.

8.1.3. Engagement as all Encompassing

The intention of the research was to bring some clarity to the engagement domain as this is an area subjected to debate and confusion, with many researchers calling for clarifying research (Macey & Schneider 2008; Saks 2006). In this thesis the term engagement was taken to include the many conceptualisations of engagement previously identified in the international research: personal, behavioural, employee, organisational, job, work, role, and state engagements. The results of this thesis found support for bringing together these conceptualisations of engagement as a more holistic, over arching concept. The linking of the variables from the different engagement areas and the testing of the overarching engagement model supported the contention for engagement as an all encompassing idea at work.

8.2. Limitations of the Research

As with all research there are limitations that could potentially affect the results. Chapter 1 (section 1.5) identified the limitations in the scope and the assumptions made in this

thesis. In Chapter 5 (section 5.5) the limitations of the method were outlined. This section details the overall limitations from this research. These are listed and discussed in the dot points below:

- This research brings together many of the engagement dimensions and analyses them in such a way as to bring them together with under an underlying foundation of emotions, cognitions and outcomes. In using this approach, a large body of published research was reviewed and analysed. However, not all possible engagement contributions could be analysed, particularly the large and varied contributions from the consultants. It was not within the scope of this study to bring together all possible engagement contributions. However, many of the major contributors from the academic domain have been brought into the model. The largest contribution of the consultants was included in the conceptual overarching framework rather than the measurement of the model. This was in order to maintain academic rigour of the measures used.

- Engagement was approached as synthesis of the characteristics emerging from the many contributions to the literature. The thesis made the assumption that the fundamental core of engagement could be so distilled from the literature and certainly, the results supported this contention. However, this was an approach not taken before. It could be argued in using an approach like this that some engagement dimension has been missed. Further research would be desirable to test the approach taken.

- Although outlined in the limitations to the method (section 5.5) it is worthy to mention again, the sample used which was limited to business academics. This means that the results may vary for different academic cohorts. In addition the timing of data collection, the cross sectional design and respondent bias are all limitations of the research design which could potentially affect the results. Common method variance is also a significant limitation, due to the self report nature of the questionnaire and the single data collection method; this may have caused spuriously inflated relationships.

- A further limitation was the testing of constructs as having the properties of higher order. In previous studies these had often been tested as causal (this was discussed in 4.2.3). This is evident in the development and testing of the individual engagement outcomes where the constructs of affective commitment, job satisfaction, disengagement, exhaustion and intention to quit were tested together and the causal relationship between them was largely ignored. This thesis

tested the simultaneous effects of these factors rather than the causal effects and, as such may represent a limitation to the study.

- Furthermore, the higher order CFA used to test whether the hypothesised variables could account for unique underlying variance and have the properties representative of a higher order construct had its limitations. The test used item bundles, which was considered appropriate given the limitations on the sample and the analysis. Sample size did not allow for all items testing for the higher order CFA and this was due to the requirement for a calibration and validation sample. Further research, using a large sample size may want to test and reinforce in a full higher order CFA for higher order constructs: emotional and cognitive engagement resources and individual engagement outcomes.

8.3. Conclusions

Overall, to bring understanding to the engagement domain this thesis has described engagement as an all encompassing term that includes the dimensions of emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes (Aim 1). The thesis also found that developing the engagement dimensions into an engagement model has brought some understanding of the dimensions important to engagement for Australian business academics (Aim 2). This has resulted in the following list of key conclusions:

Engagement as measured within this thesis represents a more holistic term
Engagement was found to be all encompassing of the current engagement domain. In other words, engagement in this thesis encompasses: state, personal, behavioural, employee, organisational, role, job and work engagements. The finding brings some consensus to the current debates on the definition of engagement; a true reflection of engagement overarches all other individual concepts of engagement. This is a new contribution to the area and the major implication of this result is for the future measurement of engagement in the workplace. This takes a meaningful step towards the development of the academic knowledge worker for competitive advantage.

Engagement comprises emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes.
Using the simplified approach to engagement allowed many of the current engagement contributions to be linked together. It was found that many of these contributions came together and represented three common underlying constructs representing cognition,

emotion and engagement outcomes. This adds support for engagement as a holistic term that encompasses the engagement domain.

Emotional engagement capabilities consist of meaningfulness, vigour, availability and psychological resources

The common underlying constructs of meaningfulness, vigour, availability and psychological resources were found to be related and could be grouped into an overarching termed in this thesis as the emotional engagement capabilities. These represent the feeling capabilities to be able to engage the self at (in) work and to possess these means: to find meaning in the job/work being done; to be emotionally available to engage; to have the psychological resources to engage; and having high levels of mental resilience and energy for the job/work.

Cognitive engagement capabilities consist of intrinsic motivation, job involvement, attention, absorption and dedication

This thesis found that intrinsic motivation, job involvement, attention, absorption and dedication were found to have the properties of a higher order (common underlying) construct cognitive engagement capabilities. The cognitive engagement capabilities are the thinking capabilities to be able to engage the self at (in) work. To have the cognitive engagement capabilities means being involved; feeling a sense of pride, significance and intrinsic motivation from the job/work; absorbed in the task, job, work; and attentive to what needs to be done.

Individual engagement outcomes consist of affective commitment, job satisfaction, intention to remain, not disengaged and not exhausted.

This thesis found that affective commitment, job satisfaction, intention to quit (reversed), disengagement (reversed) and exhaustion (reversed) together represent the common underlying construct of individual engagement outcomes. The individual engagement outcomes are evident in academics who are emotionally attached to the university; satisfied with the job and the work being done; involved in the dimensions of the job; not emotionally, cognitively, or physically exhausted; and with no intention to leave the university.

The engagement of business academics can be described as the interaction of the cognitive engagement capabilities, emotional engagement capabilities and individual engagement outcomes.

Expanding on the current conceptualisations of engagement as emotion, cognition and outcomes, this thesis has identified that engagement is the complex interaction of all three engagement dimensions. In managing business academics it is imperative that a specific HR architecture based on a selected range of targeted practices be applied to develop the cognitive and emotional precursors to engagement behaviours and outcomes. This will contribute to building capabilities in universities to ensure these knowledge workers contribute more fully. This finding also provides a significant contribution to a new definition of engagement.

The engagement of business academics is influenced by the core job dimensions and a supportive organisational environment.

Organisational characteristics are important antecedents to the development of all levels of engagement. The design of the job through these core job characteristics in addition to having a supportive organisational environment are requirements in the development of the engagement dimensions. The management of academics needs to focus on developing these dimensions in the direct and wider environments in which the academic works.

The job characteristics have a strong direct impact on the perceptions of a supportive environment.

This thesis has identified that when academics possess core job dimensions it will have a direct positive impact on the perceptions of a supportive work environment. If the managers of academics develop these core job dimensions, then there is a greater likelihood that academics will perceive that the university is committed to them. This is an important precursor of engagement behaviours.

Results on core job dimensions varied for those at higher lecturer level and those who work in the Group of Eight university group.

This thesis has established that academics who work as part of the Go8 university grouping have different core job dimensions than those in the other university groups. Additionally, the thesis has established that those academics at higher lecturer levels, (Professor and Associate Professor) also have different core job dimensions than those at lower classifications. This finding implies that an HR architecture needs to cater specifically to the different job dimension of lower and senior academics.

221

A new holistic model of engagement

The model revealed that the variables accounted for nearly all of the variation in the individual engagement outcomes (77% in the calibration sample and 89% in the validation sample). This presents engagement a representing a new over arching engagement that incorporates state, role, personal, work, job, employee and organisational engagement. This adds meaningful re-conceptualisation of engagement in which the engagement model accounts for many of the major contributions to the engagement debate.

8.4. Concluding Comment

A key contribution of this thesis is in the development of an empirically derived model of engagement which builds on the foundation of previous research. The intention of this model was also to create a more parsimonious understanding of the multitude of engagement related conceptualisations that exist in the academic and professional consultant literature. This thesis developed a model that explained most of the variation (77% and 89% in the calibration and validation studies) in engagement outcomes within the sample of business academics within Australian universities. This model indicates that the development of engagement may begin with the cognitive engagement capabilities, then the emotional engagement capabilities which both lead to the individual engagement outcomes. Significant variations in these were explained by academics perception of their job characteristics and their perception of the organisational support given. This study found that the individual engagement outcomes construct is a common underlying construct derived from the variables of affective commitment, job satisfaction, exhaustion, disengagement and intention to quit.

Universities are fundamental creators and disseminators of knowledge. One of the key roles of academics in universities is the creation of knowledge and the development of future knowledge workers. Additionally, many academics have unique skills and backgrounds. In essence, taking a resource based view, as human resources many academics can be considered as rare and inimitable and are thus a key strategic resource. Human capital has been recognised in non university sectors as a key ingredient to creating a competitive edge within knowledge based economies. Managers in many organisations are increasingly involved in strategic conversations on how to best leverage their unique and valuable human capital. With regard to universities, some authors such as Taylor (1999, 2008) have lamented the lack of mechanisms to engage - academics. This thesis hopefully has made a start to this significant managerial conversation in Australian universities on how to best engage their knowledge workers.

REFERENCE LIST

Abouserie, R 1996, 'Stress, coping strategies and job satisfaction in university academic staff', *Educational Psychology*, vol. 16, no. 1, pp. 49-56.

Allen, N & Meyer, J 1990, 'The measurement and antecedents of affective, continuance and normative commitment to the organisation', *Journal of Occupational Psychology*, vol. 63, pp. 1-18.

Allison, PD 2003, 'Missing Data Techniques for Structural Equation Modeling', *Journal of Abnormal Psychology*, vol. 112, no. 4, pp. 545-57.

Altbach, PG 2002, 'Globalisation and the university: Myths and realities in an unequal world', *Current issues in Catholic higher education*, vol. 23, pp. 5-25.

Amabile, TM 1996, *Creativity in context*, Westview Press., Boulder, Colorado.

Anderson Dannels, S 2010, 'Research Design', in GR Hancock & RO Mueller (eds), *The review's guide to quantitative methods in the social sciences*, Routledge, New York, NY.

Anderson, G 2006, 'Carving out time and space in the managerial university', *Journal of Organizational Change Management*, vol. 19, no. 5, pp. 578-92.

Anderson, G 2008, 'Mapping resistance in the managerial university', *Organization*, vol. 15, no. 2, pp. 251-70.

Antonovsky, A 1987, *Unraveling the Mystery of Health: How people manage stress and stay well* Jossey-Bass Inc. Publishers, San Francisco, California.

Aronson, E 1997, 'Review: Back to the future: Retrospective of Leon Festinger's "A theory of cognitive dissonance"', *The American Journal of Sociology*, vol. 110, no. 1, pp. 127-37.

ARWU 2008, *Academic ranking of world universities* viewed 18/08/2008, <http://www.arwu.org/rank2008/EN2008.htm >.

Australian Education Network 2007, *Groupings of Universities Australia*, viewed 21 November 2007, <http://www.australian-universities.com/groupings-of-australian-universities.php>.

Australian Public Service Commission 2006, *State of the Service Report 2005-2006*, Commonwealth of Australia, Canberra.

Avolio, BJ, Gardner, WL, Walumbwa, FO, Luthans, F & May, D 2004, 'Unlocking the mask: A look at the process by which authentic leaders impact follower attitudes and behaviors', *The Leadership Quarterly*, vol. 15, no. 8, pp. 801-23.

Babbie, E 2005, *The basics of social research*, 3rd edn, Wadsworth, California.

Bakker, AB & Demerouti, E 2008, 'Towards a model of work engagement', *Career Developement International*, vol. 13, no. 3, pp. 309-223.

Bakker, AB, Demerouti, E & Schaufeli, WB 2005, 'The crossover of burnout and work engagement among working couples', *Human Relations*, vol. 58, no. 5, pp. 661-89.

Bakker, AB, Demerouti, E & Verbeke, W 2004, 'Using the job demands- resources model to predice burnout and performance', *Human Resource Management*, vol. 43, no. 1, pp. 83-104.

Bakker, AB, Hakanen, JJ, Demerouti, E & Xanthopoulou, D 2007, 'Job resources boost work engagement, particularly when job demands are high', *Journal of Educational Psychology*, vol. 99, no. 2, pp. 274-84.

Bamber, GJ, Hoffer Gittell, J, Kochan, TA & von Nordenflycht, A 2009, *Up in the air: How airlines can improve performance by engaging their employees*, Cornell University Press, Cornell.

Barkhuizen, N & Rothmann, S 2006, 'Work engagement of academic staff in South African higher education institutions', *Management Dynamics*, vol. 15, no. 1, pp. 38-46.

Barney, JB 2002, *Gaining and sustaining competitive advantage*, 2 edn, Prentcie Hall International, Upper Saddle River, New Jersey.

Baruch, Y & Winkelmann-Gleed, A 2002, 'Multiple commitments: A conceptual framework and empirical investigation on a Community Health Service Trust', *British Journal of Management*, vol. 13, pp. 337-57.

Bayona-Saez, C, Goni-Legaz, S & Madorran-Garcia, C 2009, 'How to raise commitment in public university lecturers', *International Review of Administrative Sciences*, vol. 75, no. 2, pp. 333-47.

Becker, GS 1962, 'Investment in Human Capital: A theoretical analysis', *Journal of Political Economy*, vol. 70, pp. 5-19.

Becker, GS 1975, *Human capital: A theoretical and empirical analysis, with special reference to education*, National Bureau of Economic Research, New York.

Beer, M 2009, *High commitment high performance: How to build a resilient organization for sustained advantage*, Jossey -Bass, San Francisco, California.

Beer, M, Spector, B, Lawrence, PR, Quinn Mills, D & Walton, RE 1984, *Managing Human Assets: The groundbreaking Harvard Business School Program*, The Free Press, New York.

Bellamy, S, Morley, C & Watty, KIM 2003, 'Why Business Academics Remain in Australian Universities Despite Deteriorating Working Conditions and Reduced Job Satisfaction: an intellectual puzzle', *Journal of Higher Education Policy & Management*, vol. 25, no. 1, p. 13.

Benson, J 1988, 'Dual commitment: Contract workers in Australian manufacturing enterprises', *Journal of Management Studies*, vol. 35, no. 3, pp. 335-75.

Bessant, J 2002, 'Dawkins' Higher Education reforms and how metaphors work in policy making', *Journal of Higher Education Policy & Management*, vol. 24, no. 1, pp. 87-99.

Bishop, JW & Dow Scott, K 1996, 'Multiple foci of commitment in a work team environment', *Academy of Management Proceedings: Organisational Behaviour Division*, pp. 269-73.

Bishop, JW, Dow Scott, K, Goldsby, M & Russell., C 2005, 'A construct validity study of commitment and perceived support variables: A multifoci approach across different team environments', *Group and Organization Management*, vol. 30, no. 2, pp. 153-80.

Blau, GJ 1985, 'A multiple investigation of the dimensionality of job involvement ', *Journal of Vocational Behavior*, vol. 27, no. 1, pp. 19-36.

Blau, P 1964, *Exchange and Power in Social Life*, Transaction Publishers,, New Brunswick, New York.

Bordens, KS & Abbott, BB 2005, *Research design and methods*, 6th edn, McGraw-Hill, New York.

Bosman, J, Rothmann, S & Buitendach, JH 2005, 'Job insecurity, burnout and work engagement: The impact of positive and negative affectivity', *Southern African Journal of Industrial Psychology*, vol. 31, no. 4, pp. 48-56.

Bowman, C & Ambrosini, V 2000, 'Value Creation Versus Value Capture: Towards a Coherent Definition of Value in Strategy', *British Journal of Management*, vol. 11, no. 1, pp. 1-15.

Boxall, P 1993, 'The significance of human resource management: a reconsideration of the evidence.', *International Journal of Human Resource Management*, vol. 4, no. 3, pp. 645-64.

Boxall, P & Purcell, J 2008, *Strategy and human resource management*, 2nd edn, Palgrave MacMillan, Basingstale, Hampshire.

Bradley, D, Noonan, P, Nugent, H & Scales, B 2008, *Review of Australian higher education: Discussion paper* Department of Education, Employment and Workplace Relations, Commonwealth of Australia, Canberra.

Brayfield, A & Rothe, H 1951, 'An index of job satisfaction', *Journal of Applied Psychology*, vol. 35, no. 5, pp. 307-11.

Bretherton, T, Bearfield, S & MacDermott, T 2006, 'Employee Engagement Surveys', *HR in Practice (HiP)* vol. 6-06.

Brett, J 2000, 'Competition and collegiality', in T Coady (ed.), *Why universities matter: A conversation about values, means and directions*, Allen & Unwin Pty Ltd, St. Leonards, NSW, pp. 144-57.

Britt, TW 1999, 'Engaging the self in the field: Testing the triangle model of responsibility', *Personality and Social Psychology Bulletin*, vol. 25, no. 6, pp. 696-706.

Britt, TW, Adler, AB & Bartone, PT 2001, 'Deriving benfits from stressful events: The role of engagement in meaningful work and hardiness', *Journal of Occupational Health Psychology*, vol. 6, no. 1, pp. 53-63.

Brooke, PP, Russell, DW & Price, JL 1988, 'Discriminant validity of measures of job satisfaction, job involvement and organizational commitment', *Journal of Applied Psychology*, vol. 73, no. 2, pp. 139-45.

Brown, SP 1996, 'A meta-analysis and review of organizational research on job involvement', *Psychological Bulletin*, vol. 120, no. 2, pp. 235-55.

BSI-Consulting 2007, *Employee engagement - A concept clean up* viewed 12/03/2008, <http://bsiconsulting.com.au/pdfs/Engagement%20Clean%20Up%2003.pdf>.

Buckingham, M & Coffman, C, W. 1999, *First break all the rules: What the worlds greatest managers do differently*, Simon and Schuster, New York.

Byrne, BM 2001, *Structural equation modelling with AMOS: basic concepts, applications and programming*, Lawrence Erlbraum Associates, Mahwah, NJ.

Casper, WJ & Harris, CM 2008, 'Work-life benefits and organizational attachment: Self interest utility and signaling theory models', *Journal of Vocational Behavior*, vol. 72, no. 1, pp. 95-109.

Cavana, RY, Delahaye, BL & Sekaran, U 2001, *Applied business research: Qualitative and quantitative methods* 3rd edn, John Wiley & Sons Australia, Ltd., Milton, QLD.

Chalofsky, N 2003, 'An emerging construct for meaningful work', *Human Resource Development International*, vol. 6, no. 1, pp. 69-83.

Chang, K & Chelladurai, P 2003, 'Comparison of Part-time workers and Full-time workers: Commitment and citizenship behaviours in Korean sport organisations", *Journal of Sport Management*, vol. 17, pp. 394-416.

Clarke, J & Newman, J 1993, 'The right to manage: A second managerial revolution', *Cultural Studies*, vol. 7, no. 3, pp. 427-41.

CLC 2004, *Driving performance and retention through employee engagement*, Corporate Executive Board, Washington.

—— 2008, *Corporate Leadership Council: About Us*, viewed 14/10/2008, <https://www.clc.executiveboard.com/Public/AboutUs.aspx>.

Clifton, D, O & Harter, JK 2003, *Investing in strengths*, viewed 10-01-2007, <http://media.gallup.com/DOCUMENTS/whitePaper--InvestingInStrengths.pdf >.

Coaldrake, P & Stedman, L 1998, *On the brink: Australia's Universities confronting their future*, University of Queensland Press, St. Lucia, Queensland.

Coates, H, Goedegebuure, L, van der Lee, J & Meeks, VL 2008, *The Australian academic profession in 2007: A first analysis of the survey results*, March 2008, Australian Council for Education Research and Centre for Higher Education Management and Policy, Melbourne.

Coetzer, SE & Rothmann, S 2007, 'Job demands, job resources and work engagement of employees in a manufacturing organisation', *Southern African Business Review*, vol. 11, no. 3, pp. 17-32.

Cohen, J 1988, *Statistical power analysis for the behavioral sciences*, 2nd edn, Lawrence Erlbaum Associates, Inc. Publishers, Hillsdale, New Jersey.

Colarelli, SM 1984, 'Methods of communication and mediating processes in realistic job previews', *Journal of Applied Psychology*, vol. 69, no. 4, pp. 633-42.

Coleman, JS 1988, 'Social capital in the creation of human capital', *The American Journal of Sociology, Vol. 94, Supplement: Organizations and Institutions: Sociological and economic approaches to the analysis of social structure*, vol. 94, pp. S95-S120.

Collings, DG & Mellahi, K 2009, 'Strategic talent management: A review and research agenda', *Human Resource Management Review*, vol. 19, no. 4, pp. 304-13.

Considine, M 2006, 'Theorising the university as a cultural system: Distinctions, identities, emergencies', *Educational Theory*, vol. 56, no. 3, pp. 255-70.

Crabtree, S 2005, 'Engagement keeps the doctor away", *Gallup Management Journal*, vol. January 13, pp. 1-4.

Creswell, JW & Plano Clark, VL 2007, *Designing and conducting mixed methods research*, Sage Publications, Inc. , Thousand Oaks, California.

Cronbach, L 1951, 'Coefficient alpha and the internal structure of tests', *Psychometrika*, vol. 16, no. 3, pp. 297-334.

Csikszentmihalyi, M 1996, *Creativity: Flow and the psychology of discovery and invention*, HarperCollins, New York.

Csikszentmihalyi, M 2002, *Flow: The classicwork on how to achieve happiness*, 2nd edn, Rider, London.

Cummings, TG & Bigelow, J 1976, 'Satisfaction, job involvment, intrinsic motivation: An extension of Lawler and Hall's factor analysis', *Journal of Applied Psychology*, vol. 61, no. 4, pp. 523-5.

Currie, J 2005, 'Globalisation's impact on the professoriate in Anglo-American universities', in A Welsh (ed.), *The Professoriate: Profile of a profession*, Springer, Netherlands, pp. 21-34.

Currie, J & Vidovich, L 2009, 'The changing nature of academic work', in M Tight, KH Mok, J Huisman & CC Morphew (eds), *The Routledge International Handbook of Higher Education*, Routledge, New York, pp. 441-52.

Currivan, DB 1999, 'The causal order of job satsifcation and organizational commitment in models of employee turnover', *Human Resource Management Review*, vol. 9, no. 4, pp. 495-524.

de Jonge, J, Dormann, C, Janssen, PPM, Dollard, MF, Landeweerd, JA & ijhuis, F, J N. 2001, 'Testing reciprocal relationships between job charcteristics and prsychological well-being: A cross-lagged structural equation model', *Journal of Occupational and Organizational Psychology*, vol. 74, no. 1, pp. 29-46.

de Mello e Souza Wildermuth, C & Pauken, PD 2008, 'A perfect match: decoding employee engagement - Part 1: Engaging cultures and leadership', *Industrial and Commercial Training*, vol. 40, no. 3, pp. 122-8.

Deci, EL 1975, *Intrinsic Motivation*, Perspectives in social psychology: A series of texts and Monographs, Plenum Press, New York.

Deem, R & Brehony, KJ 2005, 'Management as ideology: the case of 'new manageralism' in higher education ', *Oxford Review of Education*, vol. 31, no. 2, pp. 217-35.

Deery, S & Iverson, R 1998, 'Antecedents and consequences of dual and unilateral commitment: A longitudinal study', *The University of Melbourne*, vol. Department of Management working paper number 1, no. January.

Deery, S, Iverson, RD & Erwin, PJ 1994, 'Predicting organizational and union commitment: The effects of industrial relations climate', *British Journal of Industrial Relations*, vol. 32, no. 4, pp. 581-97.

DEEWR 2008, *Review of Australian Higher Education: Discussion Paper* Commonwealth of Australia, Canberra, Australia.

Demerouti, E, Bakker, AB, de Jonge, J, Janssen, PPM & Schaufeli, WB 2001, 'Burnout and engagement at work as a function of demands and control', *Scandanavanian Journal of Work, Environment and Health*, vol. 27, no. 4, pp. 279-86.

Demerouti, E, Bakker, AB, Nachreiner, F & Schaufeli, WB 2001, 'The job demands- resources model of burnout', *Journal of Applied Psychology*, vol. 86, no. 3, pp. 499-512.

Demerouti, E, Bakker, AB, Vardakou, I & Kantas, A 2003, 'The convergent validity of two burnout instruments: A Multitrait - Multimethod Analysis', *European Journal of Psychological Assessment*, vol. 19, no. 1, pp. 12-23.

Ding, L, Velicer, WF & Harlow, LL 1995, 'Effects of estimation methods, number of indicators per factor, and improper solutions on structural equation modelling fit indices', *Structural equation modeling: A multidisciplinary journal*, vol. 2, no. 1, pp. 119-43.

Drucker, PF 1999, 'Knowledge-Worker Productivity: The biggest challenge', *California Management Review*, vol. 41, no. 2, pp. 79-94.

Drucker, PF 2006, *Classic Drucker: Essential wisdom of Peter Drucker from the pages of Harvard Business Review*, Harvard Business School Publishing Corporation, Boston, Massachusetts.

Echols, M 2005, 'Engaging employees to impact performance', *Chief Learning Officer*, vol. February, pp. 44-8.

Edmondson, A 1999, 'Psychological safety and learning behavior in work teams', *Administrative Science Quarterly*, vol. 44, pp. 350-83.

Eisenberger, R, Cummings, J, Armeli, S & Lynch, P 1997, 'Perceived organizational support, discretionary treatment, and job satisfaction', *Journal of Applied Psychology*, vol. 82, no. 5, pp. 812-20.

Eisenberger, R, Fasolo, P & Davis-LaMastro, V 1990, 'Perceived Organizational Support and Employee Diligence, Commitment, and Innovation.', *Journal of Applied Psychology*, vol. 75, no. 1, pp. 51-9.

Eisenberger, R, Huntington, R, Hutchison, S & Sowa, D 1986, 'Perceived Organizational Support.', *Journal of Applied Psychology*, vol. 71, no. 3, pp. 500-7.

Eisenberger, R, Jones, HR, Aselage, J & Sucharski, IL 2004, 'Perceived Organisational Support', in JA Coyle-Sharpiro, LM Shore, MS Taylor & LE Tetrick (eds), *The Employment Relationship: Examining psychological and contextual perspectives*, Oxford University Press, Oxford, pp. 206-25.

Elliott, K & Hall, M 1994, 'Organizational commitment and job involvement: Applying Blau and Boal's typology to purchasing professional', *American Business Review*, vol. 12, no. 1, pp. 6-14.

Elsey, G 2005, 'Building employee engagement at Sensis', *Strategic HR Review*, vol. 4, no. 2, pp. 16-9.

Enders, J 1999, 'Crisis? What crisis? The academic professions in the 'knowledge' society ', *Higher Education*, vol. 38, pp. 71-81.

Eveline, J 2004, *Ivory basement leadership: Power and invisibility in the changing university*, University of Western Australia Press, Crawley, Western Australia.

Feldman, JM & Lynch, JG 1988, 'Self-generated validity and other effecrs if measurement on beliefs, attitude, intention and behavior ', *Journal of Applied Psychology*, vol. 73, no. 3, pp. 421-35.

Felin, T & Hesterly, WS 2007, 'The knowledge-based view, nested heterogeneity, and new value creation: Philosophical consideration of the locus of knowledge ', *Academy of Management Review*, vol. 32, no. 1, pp. 195-218.

Ferrer, J & VanGramberg, B 2007, ''Engaging': The dominant frameworks', in *21st Annual Australia and New Zealand Academy of Management*, Sydney, Australia.

Ferrer, J & VanGramberg, B 2008, 'The ongoing battle for organisational attachment: The affective commitment of Australian business academics', in *Australian and New Zealand Academy of Management*, Auckland, New Zealand.

Festinger, L 1957, *A thoery of cognitive dissonance*, Row Peterson, Evantson, USA.

Fisher, S 1994, *Stress in acdemic life: The mental assembly line*, The Society for Research into Higher Education, Open University Press, Buckingham, England.

Freudenberger, HJ 1974, 'Staff burn-out', *Journal of Social Issues*, vol. 30, no. 1, pp. 159-65.

Fried, Y & Ferris, GR 1987, 'The validity of the job characteristics model: A review and meta-analysis', *Personnel Psychology*, vol. 40 pp. 287-322.

Fritz, C & Sonnentag, S 2006, 'Recovery, Well-Being, and Performance-Related Outcomes: The Role of Workload and Vacation Experiences', *Journal of Applied Psychology*, vol. 91, no. 4, pp. 936-45.

Frone, MR, Russell, M & Cooper, ML 1995, 'Job stressors, job involvement and employee health: A test of identity theory.', *Journal of Occupational and Organizational Psychology*, vol. 68, pp. 1-11.

Gaiduk, R, Gaiduk, J & Fields, D 2009, 'Limiting the brain drain: Determinants of employee organizational attachment in Lithuania', *Baltic Journal of Management*, vol. 4, no. 2, pp. 149-68.

Gallagher, M 2000, 'The emergence of entrepreneurial public universities in Australia', in *IMHE General Conference*, Paris, September.

Gallup 2008, *About Gallup* viewed 14/10/2008, <http://www.gallup.com/corporate/115/About-Gallup.aspx >.

Gibbons, M, Limoges, C, Nowotny, h, Schwartzman, S, Scott, P & Trow, M 1994, *The new producation of knowledge: The dynamics of science and research in contempory societes*, SAGE Publications, Inc., London, England.

Goffman, E 1961, *Encounters: Two studies in the sociology of interaction*, The Bobbs-Merrill Company, Inc., Indianapolis.

Gonzalellez-Roma, V, Schaufeli, WB, Bakker, AB & Lloret, S 2006, 'Burnout and work engagement: Independant factors or opposite poles? ', *Journal of Vocational Behavior*, vol. 68, pp. 165-74.

Gopal, A 2006, 'Worker disengagement continues to cost Singapore', *Gallup Management Journal*, viewed 08/06/2006, <http://gmj.gallup.com/>.

Gorsuch, RL 1983, *Factor analysis*, 2nd edn, Lawrence Erlbaum Associates, Inc. Publishers., Hillsdale, New Jersey.

Gouldner, A 1960, 'The norm of reciprocity', *American Sociological Review*, vol. 25, no. 2, pp. 165-78.

Grant, RM 2008, *Contemporary strategic analysis*, 6th edn, Blackwell Publishing, Malden, Massachusetts. .

Green, M, Eckel, P & Barblan, A 2002, *The brave new (and smaller) world of higher education: A transatlantic view*, American Council on Education Washington, USA.

Greenfield, W 2004, 'Decision making and employee engagement', *Employee Relations Today*, vol. Summer, pp. 13-24.

Gubman, E 2004, 'From engagement to passion for work: The search for the missing person', *Human Research Planning*, pp. 42-6.

Gujarati, DN 2003, *Basic econometrics*, 4th edn, McGraw Hill, Boston.

Hackman, JR & Oldham, GR 1975, 'Development of the job diagnositc survey', *Journal of Applied Psychology*, vol. 60, no. 2, pp. 159-70.

Hackman, JR & Oldham, GR 1980, *Work Redesign*, Addison- Wesley Publishing Company, Inc., Reading, Massauchusetts.

Hair, JF, Black, WC, Babin, BJ, Anderson, RE & Tatham, RL 2006, *Multivariate data analysis*, 6th edn, Pearson Education International, New Jersey.

Hakanen, JJ, Bakker, AB & Demerouti, E 2005, 'How dentists cope with their job demands and stay engaged: The moderating role of job resources', *European Journal of Oral Sciences*, vol. 113, pp. 479-87.

Halbesleben, JRB & Buckley, MR 2004, 'Burnout in Organizational Life', *Journal of Management*, vol. 30, no. 6, pp. 859-79.

Halbesleben, JRB & Demerouti, E 2005, 'The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory', *Work & Stress*, vol. 19, no. 3, pp. 208-20.

Hallberg, UE & Schaufeli, W, B. 2006, '"Same Same" but different? Can work engagement be discriminated from job involvement and organizational commitment?', *European Psychologist*, vol. 11, no. 2, pp. 119-27.

Harley, A, Lee, D & Robinson, D 2005, 'How 02 built the business case for engagement.', *Strategic HR Review*, vol. 4, no. 6, pp. 24-7.

Harman, G 2003, 'Australian Academics and Prospective Academics: Adjustment to a More Commercial Environment', *Higher Education Management & Policy*, vol. 15, no. 3, pp. 105-22.

Harter, JK, Schmidt, F & Hayes, T 2002, 'Business- unit- level relationship between employee satisfaction, employee engagement, and business outcomes: A meta analysis', *Journal of Applied Psychology*, vol. 87, no. 2, pp. 268-79.

Harter, JK, Schmidt, FL & Keyes, CLM 2003, 'Well-being in the workplace and its relationship to business outcomes: A review of the Gallup studies', in CLM Keyes & J Haidt (eds),

Flourishing: Positive psychology and the life well-lived, American Psychological Association, Washington, pp. 205-24.

Haudan, JA & MacLean, D 2002, ''E' is for engagement: Transforming your business by transforming your people', *Journal of Change Management*, vol. 2, no. 3, pp. 255-65.

Henkel, M 2007, 'Can academic autonomy survive in the knowledge society? A perspective from Britain', *Higher Education Research & Development*, vol. 26, no. 1, pp. 87-99.

Hewitt Associates 2005, *Hewitt - Human Resource Newsletter Beligum*, Hewitt Associates, viewed 21 April 2007, <http://www.hewittassociates.com/Lib/assets/EU/en-BE/pdfs/Hewitt_HR_Newsletter_May_2005_EN.pdf >.

Hewlin, PF 2003, 'And the award for best actor goes to ...: Facades of conformity in organizational settings', *Academy of Management Review*, vol. 28, no. 4, pp. 633-42.

Hochschild, AR 1983, *The managed heart: Commercialization of human feeling*, University of California Press, California.

Hodges, T, D. & Clifton, D, O 2004, *Strengths-based development in practice*, viewed 10-01-2007, <http://www.strengthsquest.com/media/resources/Hodges_Clifton_SBD_in_Practice.pdf >.

Holmes-Smith, P, Cunningham, E & Coote, L 2006, *Structural equation modelling: From the fundamentals to the advanced topics*, Evaluation and Measurment Services, Melbounrne.

Houston, D, Meyer, LH & Paewai, S 2006, 'Academic staff workloads and job satisfaction : expectations and values in academe', *Journal of Higher Education Policy and Management*, vol. 28, no. 1, pp. 17-30.

Hugo, G 2005, 'Demographic trends in Australia's academic workforce', *Journal of Higher Education Policy and Management*, vol. 27, no. 3, pp. 327-43.

Huselid, MA, Becker, BE & Beatty, RW 2005, *The workforce scorecard: Managing human capital to execute strategy*, Harvard Business School Press, Boston, Massachusetts.

Hutchison, S 1997, 'A path model of perceived organizational support', *Journal of Social Behavior and Personaility*, vol. 12, no. 1, pp. 159-74.

Iaffaldano, MT & Muchinsky, PM 1985, 'Job Satisfaction and Job Performance : A Meta-Analysis', *Psychological Bulletin*, vol. 97, no. 2, pp. 251-73.

ISR 2004a, *Creating competitive advantage from your employees: A global study of employee engagement*, viewed 06/06/2006, <http://isrsurveys.com/pdf/insight/Engagement%20White%20Paper-US%20Singles.pdf >.

—— 2004b, *Engaging the Canadian Workforce*, viewed 06/06/2006, <http://isrsurveys.com/pdf/insight/Engagement%20in%20Canada-US%20Singles.pdf >.

—— 2004c, *Retired on the Job: How to recognise and recharge the complacent employee*, viewed 06/06/2006, <http://isrsurveys.com/pdf/insight/Reengaging%20Complacent%20Employees-US%20Singles.pdf >.

—— 2008, *Towers Perrin-ISR: A History of Helping Organizations Succeed* viewed 14/10/2008, <http://www.isrinsight.com/About/about.aspx >.

Iverson, R & Buttigieg, D 1999, 'Affective, normative and continuance commitment: Can the 'right kind' of commitment be managed?', *Journal of Management Studies*, vol. 36, no. 3, pp. 307-33.

Izard, CE 1993, 'Four systems for emotion activation: Cognitive and noncognitive processes', *Psychological Review*, vol. 100, no. 1, pp. 68-90.

James, R 2007, 'Students and student learning in mass systems of higher education: Six educational issues facing universities and academic leaders', paper presented to Mass Higher Education in UK and International Contexts, Surrey, UK., 29-30 May 2007.

Janssen, O 2003, 'Innovative behaviour and job involvement at the price of conflict and less satisfactory relations with co-workers', *Journal of Occupational and Organizational Psychology*, vol. 76, pp. 347-64.

Janssen, PPM, De Jonge, J & Bakker, AB 1999, 'Specific determinants of intrinsic work motivation, burnout and turnover intentions: A study among nurses', *Journal of Advanced Nursing*, vol. 29, no. 6, pp. 1360-9.

Jaros, S 2009, 'Measurment of Commitment', in HJ Klein, TE Becker & JP Meyer (eds), *Commitment in Organizations: Accumulated wisdom and new directions*, Routledge, Taylor & Francis Group, New York, pp. 347-82.

Jensen, S & Luthans, F 2006, 'Entrepreneurs as authentic leaders: Impact on employees' attitudes', *Leadership and Organizational Development Journal*, vol. 27, no. 8, pp. 646-66.

Johnson, M 2004, *The New Rules of Engagement: Life-work balance and employee commitment*, Chartered Institute of Personnel and Development, London.

Joreskog, KG & Sorbom, D 1989, *LISREL 7, Analysis of linear structural relationships by maximum likelihood, instrumental variables, and least squares methods*, Scientific Software, Moorseville, IN.

Judge, TA, Thoresen, CJ, Bono, JE & Patton, GK 2001, 'The Job Satisfaction - Job Performance Relationship : A Qualitative and Quantitative Review', *Psychological Bulletin*, vol. 127, no. 3, pp. 376-407.

Juric, B, Polonsky, MJ & Mankelow, G 2004, 'Attitudes about work practices, time allocation, and publication output: Profiles of Australasian marketing academics ', *Journal for Advancement of Marketing Education*, vol. 5, pp. 1-14.

Kahn, WA 1990, 'Psychological conditions of personal engagement and disengagement at work', *Academy of Management Journal*, vol. 33, no. 4, pp. 692-724.

Kahn, WA 1992, 'To be fully there: Psychologically presence at work ', *Human Relations*, vol. 45, no. 4, pp. 321- 50.

Kang, S-C, Morris, SS & Snell, SA 2007, 'Relational archetypes, organizational learning, and value creation: Extending the human resource architecture', *Academy of Management Review*, vol. 32, no. 1, pp. 236-56.

Kanungo, RN 1979, 'The concepts of alienation and involvement revisited', *Psychological Bulletin*, vol. 86, no. 1, pp. 119-38.

Kanungo, RN 1982, 'Measurement of job and work involvement', *Journal of Applied Psychology*, vol. 67, no. 3, pp. 341-9.

Kaplan, D 2009, *Structural Equation Modeling: Foundations and extensions*, 2nd edn, vol. 10, Advanced Quantitative Techniques in the Social Sciences, SAGE Publications, Inc., Thousand Oaks, California.

Karmel, P 2000, 'Funding universities', in T Coady (ed.), *Why universities matter: A conversation about values, means and directions*, ALlen & Unwin Pty Ltd, St Leonards, NSW, pp. 159-85.

Kelloway, EK & Barling, J 2000, *Knowledge work as organizational behavior*, 00-03, Queen's School of Business, http://www.business.queensu.ca/kbe.

Kim, K & Jogaratnam, G 2010, 'Effects of individual and organizational factors on job satisfaction and intent to stay in the hotel and resturant industry', *Journal of Human Resources in Hospitality and Tourism*, vol. 9, no. 3, pp. 318-39.

Kinman, G 1998, 'A survey into the causes and consequences of occupational stress in UK academic and related staff', *Association of University Teachers*, viewed 05/02/2010, <www.uofaweb.ualberta.ca/aasua//pdfs/pressurepoints.pdf>.

Kinnie, N, Hutchinson, S, Purcell, J, Rayton, B & Swart, J 2005, 'Satisfaction with HR practises and commitment to the organisation: Why one size does not fit all', *Human Resource Management Journal*, vol. 15, no. 4, pp. 9-29.

Kline, RB 2005, *Principles and practice of structural equation modelling*, 2nd edn, The Guilford Press, New York.

Knudsen, HK, Johnson, JA & Roman, PM 2003, 'Retaining counseling staff at substance abuse centers: Effects of management practises', *Journal of Substance Abuse Treatment*, vol. 24, no. 2, pp. 129-35.

Ko, J-W, Price, JL & Mueller, CW 1997, 'Assessment of Meyer and Allen's three-component model of organizational commitment in South Korea', *Journal of Applied Psychology*, vol. 82, no. 6, pp. 961-73.

Lacy, FJ & Sheehan, BA 1997, 'Job satisfaction among academic staff: An international perspective', *Higher Education*, vol. 34, pp. 305-22.

Langelaan, S, Bakker, AB, van Doornen, LJP & Schaufeli, WB 2006, 'Burnout and work engagement: Do individual differences make a difference?', *Personality and Individual Differences*, vol. 40, pp. 521-32.

Latham, GP & Ernst, CT 2006, 'Keys to motivating tomorrow's workforce', *Human Resource Management Review*, vol. 16, no. 181-198.

Latham, GP & Pinder, CC 2005, 'Work motivation theory and research at the dawn of the Twenty-First century', *Annual Review of Psychology*, vol. 56, pp. 485-516.

Lawler, EJ 2008, *Talent: Making people your competitive advantage*, Jossey-Bass, San Francisco, California.

Lawler, EJ & Hall, DT 1970, 'Relationship of job characteristics to job involvement, satisfaction and intrinsic motivation', *Journal of Applied Psychology*, vol. 54, no. 4, pp. 305-12.

Lazarus, R 1994, 'Appraisal: The long and short of it', in P Ekman & RJ Davidson (eds), *The nature of emotion: Fundamental questions*, Oxford University Press, New York, NY., pp. 208-15.

Leiter, MP & Maslach, C 1988, 'The impact of interpersonal environment on burnout and organizational commitment', *Journal of Organizational Behavior*, vol. 9, no. 2, pp. 297-308.

Leiter, MP & Maslach, C 2000, *Preventing Burnout and Building Engagement*, Jossey-Bass Inc., San Francisco.

Lepak, DP & Snell, SA 1999, 'The human resource architecture: Toward a theory of human capital allocation and development', *Academy of Management Review*, vol. 24, no. 1, pp. 31-48.

Lepak, DP & Snell, SA 2007, 'Employment subsystems and the 'HR architecture'', in P Boxall, J Purcell & P Wright (eds), *The Oxford handbook of human resource management*, Oxford University Press, Oxford, England, pp. 210-30.

Levinson, H 1965, 'Reciprocation: The relationship between man and organization', *Administrative Science Quarterly*, vol. 9, pp. 370-90.

Lindell, MK & Whitney, DJ 2001, 'Accounting for common method variance in cross- sectional resaerch designs', *Journal of Applied Psychology*, vol. 86, no. 1, pp. 114-21.

Llorens, S, Bakkar, AB, Schaufeli, WB & Salanova, M 2006, 'Testing the robustness of the job demands- resources model', *International Journal of Stress Management*, vol. 13, no. 3, pp. 378-91.

Llorens, S, Schaufeli, WB, Bakker, AB & Salanova, M 2007, 'Does a positive gain spiral of resources, efficacy beliefs and engagement exist?', *Computers in Human Behavior*, vol. 23, pp. 825-41.

Lodahl, TM & Kejner, M 1965, 'The definition and measurement of job involvement', *Journal of Applied Psychology*, vol. 49, no. 1, pp. 24-33.

Lok, P & Crawford, J 2001, 'Antecedents of organisational commitment and the mediating role of job satisfaction', *Journal of Managerial Psychology*, vol. 16, no. 8, pp. 594-613.

Lord, RG & Kanfer, R 2002, 'Emotions and organizational behavior', in RG Lord, RJ Klimoski & R Kanfer (eds) *Emotions in the workplace: Understanding the structure and role of emotions in organizational behavior*, Jossey-Bass, San Francisco, CA, pp. 5-19.

Luthans, F, Norman, SM, Avolio, BJ & Avey, JB 2008, 'The mediating role of psychological capital in the supportive organizational climate - employee performance relationship', *Journal of Organizational Behavior*, vol. 29, pp. 219-38.

Luthans, F & Peterson, S 2002, 'Employee engagement and manager self-efficacy: Implications for managerial effectiveness and development', *Journal of Management Development*, vol. 21, no. 5, pp. 376-87.

Macey, WH & Schneider, B 2008, 'The meaning of employee engagement', *Industrial and Organizational Psychology*, vol. 1, no. 1, pp. 3-30.

Maitland, R 2007, 'Support for company strategy is essential to employee engagement', *People Management*, vol. 13, no. 5, p. 48.

Mano-Negrin, R 1998, 'Occupational determinants of work attitudes and organizational attachment', *Health Manpower Management*, vol. 24, no. 4, pp. 153-60.

Marginson, S 1997, 'Steering from a Distance: Power Relations in Australian Higher Education', *Higher Education*, vol. 34, no. 1, pp. 63-80.

Marginson, S 2007, 'Global university rankings: Implications in general for Australia', *Journal of Higher Education, Policy and Management*, vol. 29, no. 2, pp. 131-42.

Martin, E 1999, *Changing academic work: Developing the learning university*, The Society for Research into Higher Education and Open University Press, Buckingham, England.

Maslach, C 1982, *Burnout - The cost of caring*, Prentice Hall Press, New York.

Maslach, C & Leiter, MP 1997, *The truth about burnout: How organizations cause personal stress and what to do about it*, Jossey- Bass Publishers, San Francisco.

Maslach, C, Schaufeli, WB & Leiter, MP 2001, 'Job Burnout', *Annual Review of Psychology*, vol. 52, pp. 397-422.

Mauno, S, Kinnunen, U & Ruokolainen, M 2007, 'Job demands and resources as antecendents of work engagement: A logitudinal study', *Journal of Vocational Behavior*, vol. 70, pp. 149-71.

May, D, Gilson, R & Harter, L 2004, 'The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work', *Journal of Occupational and Organizational Psychology*, vol. 77, pp. 11-37.

Maynard, DC & Joseph, TA 2008, 'Are all part-time faculty underemployed? The influence of faculty status preference on satisfaction and commitment', *Higher Education*, vol. 55, no. 1, pp. 139-54.

McDade, S & McKenzie, A 2002, 'Knowledge workers in the engagement equation', *Strategic HR Review*, vol. 1, no. 4, pp. 34-7.

McFarlane Shore, L & Wayne, SJ 1993, 'Commitment and employee behavior: Comparison of affective commitment and continuance commitment with perceived organizational support', *Journal of Applied Psychology*, vol. 78, no. 5, pp. 774-80.

McInnes, C 1998, 'Academics and professional administrators in Australian universities: Dissolving boundries and new tensions', *Journal of Higher Education Policy and Management*, vol. 20, no. 2, pp. 161-73.

McInnes, C 1999, *The work roles of academics in Australian universities*, 00/5, Department of Education, Training and Youth Affairs, Canberra, Australia.

Meeks, VL 2006a, 'The changing landscape of higher education research policy in Australia', in VL Meeks & C Suawanwela (eds), *Higher education, research and knowledge in the Asia Pacific region*, Palgrave, Macmillian Ltd., New York, NY., pp. 65-89.

Meeks, VL 2006b, 'Research management in the postindustrial era: Trends and issues for further investigation', in VL Meeks & C Suawanwela (eds), *Higher education, research and knowledge in the Asia Pacific region*, Palgrave, MacMillian Ltd., New York, NY, pp. 213-33.

Meyer, JP 2009, 'Commitment in a changing world of work', in HJ Klein, TE Becker & JP Meyer (eds), *Commitment in Organizations*, Routledge, Taylor & Francis Group, New York, pp. 37-68.

Meyer, JP & Allen, NJ 1984, 'Testing the 'side-bet theory' of organizational commitment: Some methodological considerations', *Journal of Applied Psychology*, vol. 69, no. 3, pp. 372-8.

Meyer, JP & Allen, NJ 1991, 'A three component conceptualisation of organisational commitment', *Human Resource Management Review*, vol. 1, no. 1, p. 61.

Meyer, JP, Stanley, D, J., Herscovitch, L & Topolnytsky, L 2002, 'Affective, continuance, and normative commitment to the organization: A meta-analysis of the antecedents, correlates and consequences', *Journal of Vocational Behavior*, vol. 61, no. 1, pp. 20-52.

Molony, J 2000, 'Australian universities today', in T Coady (ed.), *Why universities matter: A conversation about values, means and directions*, Allen & Unwin Pty Ltd, St Leonards, NSW, pp. 72-84.

Mowday, R, Porter, L & Steers, R 1982, *Employee-organization linkages: The psychology of commitment*, Academic Press., New York, NY.

Mowday, R, Steers, R & Porter, L 1979, 'The measurement of organizational commitment', *Journal of Vocational Behaviour*, vol. 14, pp. 224-47.

Mueller, CW, Wallace, J & Price, JL 1992, 'Employee commitment: Resolving some issues', *Work and Occupations*, vol. 19, no. 3, pp. 211-36.

Munck, IME 1979, *Model building in comparative education*, IEA Monograph Studies No.10, Almqvist &Wiksell International, Stockholm, Sweden.

Nahapiet, J & Ghoshal, S 1998, 'Social capital, intellectual capital, and the organizational advantage ', *Academy of Management Review*, vol. 23, no. 2, pp. 242-66.

Nayyar, D 2008, 'Globalization: What does it mean for higher education?', in LE Weber & JJ Duderstadt (eds), *The globalization of higher education*, Ecnomica Ltd., London, pp. 3-14.

Newman, DA & Harrison, DA 2008, 'Been there, bottled that: Are state and behavioral work engagement new and useful construct "wines"?', *Industrial and Organizational Psychology*, vol. 1, no. 1, pp. 31-5.

Newman, F, Couturier, L & Scurry, J 2004, *The future of Higher Education: Rhetoric, reality, and the risks of the market*, The Jossey-Bass Higher and Adult Education Series, Jossey-Bass, San Francisco.

Niland, J 2008, 'The engagement of Australian universities with globalization', in LE Weber & JJ Duderstadt (eds), *The globalization of higher education* Economica, Ltd., London, pp. 77-92.

Nogradi, GS & Anthony, PV 1988, 'Percieved job characteristics, job involvement and work motivation: An examination of the relationships for seasonal (summer) municipal recreation employees', *Journal of Park and Recreational Administration*, vol. 6, no. 3, pp. 1-13.

O'Driscoll, MP & Randell, DM 1999, 'Perceived Organisational support, satisfaction with rewards, and employee job involvement and organisational commitment', *Applied Psychology: An International Review*, vol. 48, no. 2, pp. 197-209.

Olivier, AL & Rothmann, S 2007, 'Antecedents of work engagement in a mutlinational oil company', *Southern African Journal of Industrial Psychology*, vol. 33, no. 3, pp. 49-56.

Organ, DW, Podsakoff, PM & Mackenzie, S 2006, *Organisational Citizenship Behaviours: Its nature, antecedents and consequences*, Sage Publications, Inc., California.

Orpen, C 1997, 'The interactive effects of communication quality and job involvement on managerial job satisfaction and work motivation', *Journal of Psychology*, vol. 131, no. 5, pp. 519-22.

Papalexandris, N & Galanaki, E 2009, 'Leadership's impact on employee engagement: Differences among entrepreneurs and professional CEOs', *Leadership and Organizational Development Journal*, vol. 30, no. 4, pp. 365-85.

Pedhazur, EJ 1997, *Multiple regression in behavioral research: Explanation and predication*, 3rd edn, Wadsworth, Thomson Learning, Albert Complex, Singapore.

Peters, CLO & Enders, C 2002, 'A primer for the estimation of structural equation models in the presence of missing data: Maximum likelihood algorithms', *Journal of Targeting, Measurement & Analysis for Marketing*, vol. 11, no. 1, p. 81.

Pinder, CC 1998, *Work motivation in organizational behavior*, Prentice Hall, Upper Saddle River, New Jersey.

Politis, JD 2001, 'The relationship of various leadership styles to knowledge management', *Leadership and Organizational Development Journal*, vol. 22, no. 8, pp. 354-64.

Politis, JD 2002, 'Transformational and transactional leadership enabling (disabling) knowledge acquisition of self-managed teams: the consequence for performance', *Leadership and Organizational Development Journal*, vol. 23, no. 4, pp. 186-97.

Pollitt, C 1993, *Managerialism and the public sector*, 2nd edn, Blackwell Publishing, Oxford, UK. .

Porter, L, Steers, R, Mowday, R & Boulian, P 1974, 'Organizational commitment, job satisfaction, and turnover among psychiatric technicians', *Journal of Applied Psychology*, vol. 59, no. 5, pp. 603-9.

Price, JL & Mueller, CW 1981, 'A causal model of turnover for nurses', *Academy of Management Journal*, vol. 24, no. 3, pp. 543-65.

Price, JL & Mueller, CW 1986, *Absenteeism and turnover of hospital employees*, vol. 5, Monographs in organizational behavior and industrial relations, JAI Press Inc., Greenwich, Connecticut.

Price, JL & Mueller, CW 1986, *Handbook of organisational measurement*, Pitman Publishing, INC, Massachusetts.

Purcell, J, Kinnie, N, Swart, J, Rayton, B & Hutchinson, S 2009, *People management and performance*, Routledge, Abingdon, Oxon.

Rama Devi, V 2009, 'Employee engagement is a two-way street', *Human Resource Management International Digest*, vol. 17, no. 2, pp. 3-4.

Reid, MF, Riemenschneider, CK, Allen, MW & Armstrong, DJ 2008, 'Information technology employees in State Government: A study of affective commitment, job involvement and job satisfaction', *The American Review of Public Administration*, vol. 38, no. 1, pp. 41-61.

Renn, RW & Vandenberg, RJ 1995, 'The critical psychological states: An underrepresented component in job charcteristics model research', *Journal of Management*, vol. 21, no. 2, pp. 279-303.

Rhoades, L & Eisenberger, R 2002, 'Perceived organizational support: A review of the literature', *Journal of Applied Psychology*, vol. 87, no. 4, pp. 698-714.

Rhoades, L, Eisenberger, R & Armeli, S 2001, 'Affective commitment to the organization: The contribution of perceived organizational support', *Journal of Applied Psychology*, vol. 86, no. 5, pp. 825-36.

Rhoades Shanock, L & Eisenberger, R 2006, 'When supervisors feel supported: Relationships with subordinates' perceived supervisor support, perceived organizational support, and performance.', *Journal of Applied Psychology*, vol. 91, no. 3, pp. 689-95.

Riketta, M & Dick, RV 2005, 'Foci of attachment in organizations: A meta-analytic comparison of the strength and correlates of workgroup versus organizational identification and commitment', *Journal of Vocational Behavior*, vol. 67, no. 3, pp. 490-510.

Robinson, D 2007, 'Engagement is marriage of various factors at work', *Employee Benefits*, pp. 37-.

Robinson, D, Perryman, S & Hayday, S 2004, *The drivers of employee engagement*, 405, Institute of Employee Studies, London.

Rothbard, NP 2001, 'Enriching or depleting? The dynamics of engagement in work and family roles', *Administrative Science Quarterly*, vol. 46, pp. 655-84.

Saks, AM 2006, 'Antecedents and consequences of employee engagement.', *Journal of Managerial Psychology*, vol. 21, no. 7, pp. 600-19.

Saks, AM 2008, 'The meaning and bleeding of employee engagement: How muddy is the water?', *Industrial and Organizational Psychology*, vol. 1, no. 1, pp. 40-3.

Sandelands, LE & Boudens, CJ 2000, 'Feeling at work', in S Fineman (ed.), *Emotion in Organizations*, SAGE Publications Ltd. , London, vol. 2nd.

Schaufeli, W, B. & Bakkar, A, B. 2004, 'Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study', *Journal of Organisational Behaviour*, vol. 25, pp. 293-315.

Schaufeli, W, B., Taris, T, W. & van Rhenen, W 2008, 'Workaholism, burnout, and work engagement: Three of a kind or three different kinds of employee well-being?', *Applied Psychology: An International Review*, vol. 57, no. 2, pp. 173-203.

Schaufeli, W, B. & Taris, TW 2005, 'The conceptualization and measurement of burnout: Common ground and worlds apart', *Work & Stress*, vol. 19, no. 3, pp. 256-62.

Schaufeli, WB & Bakker, AB 2001, 'Werk engagement welbevinden: Naar een positieve nbenadering in de Arbeids-engagement Gezondheidspsychologie [Work and well-being:

Towards a positive Occupational Health Psychology] ', *Gedrag & Organisatie*, pp. 229-53.

Schaufeli, WB, Bakker, AB & Salanova, M 2006, 'The measurement of work engagement with a short questionnaire: A cross national study', *Educational and Psychological Measurement*, vol. 66, no. 4, pp. 701-16.

Schaufeli, WB, Martinez, IM, Pinto, AM, Salanova, M & Bakker, AB 2002, 'Burnout and engagement in university students: A cross-national study', *Journal of Cross-Cultural Psychology* vol. 33, no. 5, pp. 464-81.

Schaufeli, WB, Salanova, M, Gonzalellez-Roma, V & Bakker, AB 2002, 'The measurement of engagement and burnout: A two sample confirmatory factor analytic approach.', *Journal of Happiness Studies*, vol. 3, pp. 71-92.

Scherer, KR 1994, 'An emotion's occurrence depends on the relevance of an event to the organism's goal/need heirarchy', in P Ekman & RJ Davidson (eds), *The nature of emotion: Fundamental questions*, Oxford University Press, New York, NY., pp. 227-31.

Schiemann, WA 2009, *Reinventing talent management: How to maximize performance in the new marketplace*, John Wiley & Sons, Inc., Hoboken, New Jersey.

Schramm, C 2008, 'Reinvigorating universities in an Entrepreneurial age', in LE Weber & JJ Duderstadt (eds), *The globalization of higher education* Economica, Ltd, London, pp. 15-26.

Schumacker, RE & Lomax, RG 2004, *A beginner's guide to structural equation modelling*, 2nd edn, Lawrence Erlbaum Associates, Publishers, Mahwah, New Jersey.

Seijts, GH & Crim, D 2006, 'What engages employees the most or, The Ten C's of employee engagement', *Ivey Business Journal*, vol. 70, no. 4, pp. 1-5.

Seligman, M, E. & Csikszentmihalyi, M 2000, 'Positive Psychology: An introduction', *American Psychologist*, vol. 55, no. 1, pp. 5-14.

Sims, RL & Kroeck, KG 1994, 'The influence of ethical fit on employee satisfaction, commitment and turnover', *Journal of Business Ethics*, vol. 13, pp. 939-47.

Sinickas, A 2005, 'Linking communication to engagement.', *Strategic Communication Management*, vol. 9, no. 3, p. 12.

Smith, P, Kendall, L & Hulin, C 1969, *The measurement of satisfaction in work and retirement*, Rand McNally, Chicago.

Solondz, K 1995, 'The cost of efficiency', in S Rees & G Rodley (eds), *The human costs of managerialism*, Pluto Press Australia Limited, Leichhardt, New South Wales, pp. 211-20.

Spreitzer, G 1995, 'Psychological empowerment in the workplace: Dimensions, measurement, and validation. ', *Academy of Management Journal*, vol. 38, no. 5, pp. 1442-65.

Swart, J 2007, 'HRM and knowledge workers', in P Boxall, J Purcell & P Wright (eds), *The Oxford handbook of human resource management*, Oxford University Press, Oxford, England, pp. 450-68.

Tabachnick, BG & Fidell, LS 2007, *Using multivariate statistics*, 5th edn, Pearson Education, Inc., Boston, MA.

Taylor, P 1999, *Making sense of academic life: Academics, universities and change*, Society for Research into Higher Education and Open University Press, Buckingham, England.

Taylor, P 2008, 'Being an academic today', in R Barnett & R DiNapoli (eds), *Changing identities in higher education: Voicing perspectives*, Routledge, Hoboken, pp. 20-39.

Tett, RP & Meyer, JP 1993, 'Job satsifaction, organizational commitment, turnover intention, and turnover: Path analyses based on meta-analytic findings', *Personnel Psychology*, vol. 46, no. 2, pp. 259-93.

Thackray, J 2001, 'Feedback for real', *Gallup Management Journal*, viewed 16/11/2006, <http://gmj.gallup.com/comntent/print/811/Feedback-for-Real.aspx >.

Tharenou, P, Donohue, R & Cooper, B 2007, *Management Research Methods*, Cambridge University Press, Port Melbourne, Melbourne.

Thomas, KW & Velthouse, BA 1990, 'Cognitive elements of empowerment: An "interpretive" model of intrinsic task motivation ', *Academy of Management Review*, vol. 15, no. 4, pp. 666-81.

Timms, C, Graham, D & Cottrell, D 2007, '"I just want to teach" Queensland independent school teachers and their workload', *Journal of Educational Administration*, vol. 15, no. 5, pp. 569-86.

Towers Perrin 2003, 'Working today: Understanding what drives employee engagement', vol. 2006, viewed 20/07/2006, <http://www.towersperrin.com/hrservices/webcache/towers/United_States/publications/Reports/Talent_Report_2003/Talent_2003.pdf >.

Towers Perrin 2006, 'Employee engagement levels are focus of global Towers Perrin study', viewed 13/07/2006, <http://towersperrin.com/tpp/jsp/masterbrand_webcache_html.jsp?webc+HR_Services/United_States/News/Moniter/2006/200601/mon_article_0106A.htm#image_1>.

Towers Perrin 2008, *About the firm*, viewed 14/10/2008, <http://www.towersperrin.com/tp/showhtml.jsp?url=global/about/index.htm&country=global >.

Universities Australia 2009, *Education stronger as Australia's third largest export - Media Release (06/02/2009)*, viewed 29/04/2009, <http://www.universitiesaustralia.edu.au/content.asp?page=/news/media_releases/2009/uniaus_media_02_09.htm>.

Van Scooter, JR 2000, 'Relationships of task performance and contextual performance with turnover, job satisfaction, and affective commitment', *Human Resource Management Review*, vol. 10, no. 1, pp. 79-95.

Waldron, VR 1994, 'Once more, *with feeling*: Reconsidering the role of emotion in work', in SA Deetz (ed.), *Communication Yearbook/ 17*, SAGE Publications, Thousand Oaks, pp. 388-416.

Wanous, JP, Reichers, AE & Hudy, MJ 1997, 'Overall job satisfaction: How good are single-item measures?', *Journal of Applied Psychology*, vol. 82, no. 2, pp. 247-52.

Warr, PB, Cook, JC & Wall, PB 1979, 'Scales for the measurement of some attitudes and aspects of psychologcial well-being', *Journal of Occupational Psychology*, vol. 52, no. 2, pp. 129-48.

Watson, D & Tellegen, A 1985, 'Toward a consensual structure of mood', *Psychological Bulletin*, vol. 98, no. 2, pp. 219-35.

Williams, LJ & Anderson, SE 1991, 'Job Satisfaction and Organizational Commitment as Predictors of Organizational Citizenship and In-Role Behaviors.', *Journal of Management*, vol. 17, no. 3, p. 601.

Winefield, AH, Gillespie, C, Dua, J, Hapuarachchi, J & Boyd, C 2003, 'Occupational stress in Australian university staff: Results from a national survey', *International Journal of Stress Management*, vol. 10, no. 1, pp. 51-63.

Winter, R & Sarros, J 2002, 'The academic work environment in Australian universities: A motivating place to work?', *Higher Education Research and Development*, vol. 21, no. 3, pp. 241- 58.

Winter, R, Taylor, T & Sarros, J 2000, 'Trouble at Mill: quality of academic worklife issues within a comprehensive Australian university', *Studies in Higher Education*, vol. 25, no. 3, pp. 279-94.

Wood, F 1990, 'Factors influencing research performance of university academic staff', *Higher Education*, vol. 19, no. 1, pp. 81-100.

Wood, F & Meeks, VL 2002, 'Over-reviewed and underfunded? The evolving policy context of Australian higher education', *Journal of Higher Education Policy & Management*, vol. 24, no. 1, pp. 7-25.

Woodruffe, C 2005, 'Employee Engagement.', *British Journal of Administrative Management*, no. 50, pp. 28-9.

Wright, P & Kehoe, RR 2009, 'Organizational - level antecedents and consequences of commitment', in HJ Klein, TE Becker & JP Meyer (eds), *Commitment in Organizations: Accumulated wisdom and new directions*, Routledge, Taylor & Francis Group, New York, pp. 285-307.

Yoon, J & Thye, SR 2002, 'A dual process of organizational commitment: Job satisfaction and organizational support', *Work and Occupations*, vol. 29, no. 1, pp. 97-124.

Zhou, W & Li, B 2008, 'Study on the relationship between organizational career management and job involvement', *Frontiers of Business Research in China*, vol. 2, no. 1, pp. 116-36.

Appendix A1: Questionnaire- Reconceptualising Engagement: A Study of University Academics

The questionnaire is organised under four key headings; demographics, emotional engagement resources, cognitive engagement resources and rational engagement resources. At the beginning of each of the main sections an introduction to the thinking needed for that section is provided. It is indicated, preceding the statements how you are required to answer them. At the end of each of the main sections is some space for you to provide, if you like, further elaboration or comments on the facilitators and barriers to your engagement or to provide an example.

At the end of the questionnaire you are asked to consider possible follow up interviews for this research project. In which you are required to supply your name and contact details which the researchers will follow up at a later stage.

Confidentiality is assured at ALL times.
Participation in this research is voluntary.

We thank you for your participation,
The Research Group, School Of Management, Victoria University

DEMOGRAPHIC QUESTIONS

1.	Are you Male? or Female? Please circle your response.
2.	Please circle your age group, from the following selections. <24years 25-34years 35-44years 45-54years 55-64years >65years
3.	At which University do you work? If you work at more than one, write down the University where you spend the greater majority of your time. _____
4.	In which department/school do you work? If you work in more than one, write down the department/ school where you spend a greater majority of your time. _____
5.	Job Status – Can you please circle to indicate what your current working status is? Full Time Part Time Sessional Other?_____
6.	What academic (lecturer) classification do you currently hold? Please circle the appropriate lecturer level. Lecturer: A B C D E
7.	How long, in years, have you worked at your current University? _____
8.	How long, in years, have you worked in your current department/ school? _____
9.	How long, in years, have you held your current academic/ lecturer level classification? In other words how long have you been at your current academic level? _____
10.	What is your highest academic qualification? Please circle your response. Bachelor Degree Masters Degree PhD Other? _____
11.	Does your University recognise you as formally research active? Please circle your response. YES – Research Active NO – Not research active

EMOTIONAL ENGAGEMENT RESOURCES

The following set of measures asks you to consider the feelings that you have that could impact on the work you do, the organisation you are working for and the people that you work with. The statements ask you to think about what emotional resources it takes for you to engage with your work, your organisation and your co-workers.

Please answer the statements according to your disagreement or agreement with them; there are seven options to consider. Please circle the one right answer.

	Strongly Disagree			Neither Agree or Disagree			Strongly Agree
MEANINGFULNESS							
1. The work I do on this job is very important to me.	1	2	3	4	5	6	7
2. My job activities are personally meaningful to me.	1	2	3	4	5	6	7
3. The work I do on this job is worthwhile.	1	2	3	4	5	6	7
4. My job activities are meaningful to me.	1	2	3	4	5	6	7
5. I feel that the work I do on my job is valuable.	1	2	3	4	5	6	7
PSYCHOLOGICAL SAFETY							
1. I'm not afraid to be myself at work.	1	2	3	4	5	6	7
2. I am afraid to express my opinions at work.	1	2	3	4	5	6	7
3. There is a threatening environment at work.	1	2	3	4	5	6	7
PSYCHOLOGICAL RESOURCES							
1. I feel mentally sharp at the end of the workday.	1	2	3	4	5	6	7
2. I can't think straight by the end of my workday.	1	2	3	4	5	6	7
3. I feel overwhelmed by the things going on at work.	1	2	3	4	5	6	7
4. I feel emotionally healthy at the end of the day.	1	2	3	4	5	6	7
5. I feel that I am at the end of my rope emotionally.	1	2	3	4	5	6	7
6. I feel emotionally drained from my work.	1	2	3	4	5	6	7
7. I feel tired before my workday is over.	1	2	3	4	5	6	7
8. I feel physically used up at the end of the day.	1	2	3	4	5	6	7

The next set of statements asks you to consider the frequency with which the statements occur, from Never to Always. Please circle the one right answer.

	Never	Infrequently	Sometimes	Half the time	Often	Very Often	Always
ABSORPTION							
1. When I am working, I forget everything else around me.	1	2	3	4	5	6	7
2. Time flies when I am working.	1	2	3	4	5	6	7
3. I get carried away when I am working.	1	2	3	4	5	6	7

FURTHER COMMENTS- Are there any facilitators and/or barriers to your emotional engagement, 'your feelings', as indicated from the questions in the section above?

COGNITIVE ENGAGEMENT RESOURCES

The following set of measures asks you to consider the cognitive aspects and your 'thinking' that could impact on the work that you do, the organisation you work for and the people that you work with. The statements ask you to think about what cognitive resources it takes for you to engage with your work, your organisation and your co-workers.

The next set of statements asks you to consider the frequency with which the statements occur, from Never to Always. Please circle the one right answer.

DEDICATION	Never	Infrequently	Sometimes	Half the time	Often	Very Often	Always
1. To me, my job is challenging.	1	2	3	4	5	6	7
2. My job inspires me.	1	2	3	4	5	6	7
3. I am very enthusiastic about my job.	1	2	3	4	5	6	7
4. I am proud of the work that I do.	1	2	3	4	5	6	7
5. I find the work that I do full of meaning and purpose.	1	2	3	4	5	6	7
VIGOR							
1. When I get up in the morning, I feel like going to work.	1	2	3	4	5	6	7
2. At my work, I feel bursting with energy.	1	2	3	4	5	6	7
3. At my work I always persevere, even when things do not go well.	1	2	3	4	5	6	7
4. I can continue working for very long periods of time.	1	2	3	4	5	6	7
5. At my job, I am very resilient, mentally.	1	2	3	4	5	6	7
6. At my job I feel strong and vigorous.	1	2	3	4	5	6	7

Please answer the statements according to your disagreement or agreement with them; there are seven options to consider. Please circle the one right answer.

INTRINSIC MOTIVATION	Strongly Disagree		Neither Agree or Disagree				Strongly Agree
1. When I do my work well, it gives me a feeling of accomplishment.	1	2	3	4	5	6	7
2. When I perform my job well, it contributes to my personal growth and development.	1	2	3	4	5	6	7
3. I feel a great sense of personal satisfaction when I do my job well.	1	2	3	4	5	6	7
4. Doing my job well increases my feeling of self esteem.	1	2	3	4	5	6	7
JOB INVOLVEMENT							
1. The most important things that happen to me involve my present job.	1	2	3	4	5	6	7
2. Most of my interests are centred around my job.	1	2	3	4	5	6	7
3. To me, my job is a very large part of who I am.	1	2	3	4	5	6	7
4. I am very much personally involved with my job.	1	2	3	4	5	6	7
5. My job is a very important part of my life.	1	2	3	4	5	6	7
ATTENTION							
1. I spend a lot of time thinking about my work.	1	2	3	4	5	6	7
2. I focus a great deal of attention on my work.	1	2	3	4	5	6	7
3. I concentrate a lot on my work.	1	2	3	4	5	6	7
4. I pay a lot of attention to my work.	1	2	3	4	5	6	7

	Strongly Disagree			Neither Agree or Disagree			Strongly Agree
AVAILABILITY							
1. I am confident in my ability to handle competing demands at work.	1	2	3	4	5	6	7
2. I am confident in my ability to deal with problems that come up at work.	1	2	3	4	5	6	7
3. I am confident in my ability to think clearly at work.	1	2	3	4	5	6	7
4. I am confident in my ability to display the appropriate emotions at work.	1	2	3	4	5	6	7
5. I am confident that I can handle the physical demands at work.	1	2	3	4	5	6	7
SELF EFFICACY Academics have many aspects to their work role; teaching, research and administrative tasks. The following set of statements ask you to consider your unique blend of these roles. Please circle the one right answer.							
1. My job is well within the scope of my abilities.	1	2	3	4	5	6	7
2. I feel confident that my skills and abilities equal or exceed those of my colleagues.	1	2	3	4	5	6	7
3. My past experiences and accomplishments increase my confidence that I will be able to perform successfully in this organisation.	1	2	3	4	5	6	7
4. Professionally speaking, my job exactly satisfies my expectations of myself.	1	2	3	4	5	6	7
5. I feel I am overqualified for the job I am doing.	1	2	3	4	5	6	7
FURTHER COMMENTS- Are there any facilitators and/or barriers to your cognitive engagement, 'your thinking', as indicated from the questions in the section above.							

INDIVIDUAL ENGAGEMENT OUTCOMES

The following set of measures asks you to consider aspects of your job that could impact on the work that you are doing, the organisation you work for and the people that you work with. The statements ask you to think about what resources it takes for you to engage with your work, your organisation and your co-workers.

The next set of statements ask you to consider your disagreement or agreement with them; there are four options to consider. Please circle the one right answer.

BURNOUT	Strongly Disagree	Disagree	Agree	Strongly Agree
1. When I work, I usually feel energized.	1	2	3	4
2. I feel more and more engaged in my work.	1	2	3	4
3. Usually, I can manage the amount of my work well.	1	2	3	4
4. This is the only type of work that I can imagine myself doing.	1	2	3	4
5. After my work, I usually feel worn out and weary.	1	2	3	4
6. Sometimes I feel sickened by my work tasks.	1	2	3	4
7. After working, I have enough energy for my leisure activities.	1	2	3	4
8. Over time, one can become disconnected from this type of work.	1	2	3	4
9. During my work, I often feel emotionally drained.	1	2	3	4
10. I find my work to be a positive challenge.	1	2	3	4
11. Lately, I tend to think less at work and do my job almost mechanically.	1	2	3	4
12. I can tolerate the pressure of my work very well.	1	2	3	4
13. After work, I tend to need more time than in the past in order to relax and feel better.	1	2	3	4
14. It happens more and more often that I talk about my work duties in a negative way.	1	2	3	4
15. There are days when I feel tired before I arrive at work.	1	2	3	4
16. I always find new and interesting aspects in my work.	1	2	3	4

Please answer the statements according to your disagreement or agreement with them; there are seven options to consider. Please circle the one right answer.

AFFECTIVE COMMITMENT	Strongly Disagree		Neither Agree or Disagree				Strongly Agree
1. I would be happy to spend the rest of my career with this University.	1	2	3	4	5	6	7
2. I enjoy discussing my University with people outside it.	1	2	3	4	5	6	7
3. I really feel as if this Universities problems are my own.	1	2	3	4	5	6	7
4. I think that I could easily become as attached to another University as I am to this one.	1	2	3	4	5	6	7
5. I do not feel like 'part of the family' at my University.	1	2	3	4	5	6	7
6. I do not feel 'emotionally attached' to this University.	1	2	3	4	5	6	7
7. This University has a great deal of personal meaning for me.	1	2	3	4	5	6	7
8. I do not feel a strong sense of belonging to my University.	1	2	3	4	5	6	7

PERCEIVED ORGANISATIONAL SUPPORT	Strongly Disagree			Neither Agree or Disagree			Strongly Agree
1. My University really cares about my well being.	1	2	3	4	5	6	7
2. My University strongly considers my goals and values.	1	2	3	4	5	6	7
3. My University shows little concern for me.	1	2	3	4	5	6	7
4. My University cares about my opinions.	1	2	3	4	5	6	7
5. My University is willing to help me if I need a special favour.	1	2	3	4	5	6	7
6. Help is available from my University when I have a problem.	1	2	3	4	5	6	7
7. My University would forgive an honest mistake on my part.	1	2	3	4	5	6	7
8. If given the opportunity, my University would take advantage of me.	1	2	3	4	5	6	7
JOB SATISFACTION							
1. I find real enjoyment in my job.	1	2	3	4	5	6	7
2. I like my job better than the average academic does.	1	2	3	4	5	6	7
3. I am seldom bored with my job.	1	2	3	4	5	6	7
4. I would not consider taking another job.	1	2	3	4	5	6	7
5. Most days I am enthusiastic with my job.	1	2	3	4	5	6	7
6. I feel fairly well satisfied with my job.	1	2	3	4	5	6	7
INTENTION TO QUIT							
1. I frequently think about quitting my job.	1	2	3	4	5	6	7
2. I am planning to search for a new job during the next twelve months.	1	2	3	4	5	6	7
3. If I have my own way, I will be working for this organisation one year from now.	1	2	3	4	5	6	7

The next set of statements asks you to consider the amount or extent of each of the job characteristics there is in your job, from Very Little to Very Much. Please circle the one right answer.

JOB CHARATERISTICS	Very Little						Very Much
1. How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?	1	2	3	4	5	6	7
2. To what extent does your job involve doing a 'whole' and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finished by other people?	1	2	3	4	5	6	7
3. How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of skills and talents?	1	2	3	4	5	6	7
4. In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well being of other people?	1	2	3	4	5	6	7
5. To what extent do managers or co-workers let you know how well you are doing on your job?	1	2	3	4	5	6	7
6. To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing – aside from any feedback co-workers and supervisors may provide?	1	2	3	4	5	6	7

FURTHER COMMENTS- Are there any **facilitators and/or barriers** to your engagement, as indicated from the questions in the section above?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

The next set of statements asks you to consider your engagement. Please circle the one right answer.

ACADEMIC ENGAGEMENT	Strongly Disagree			Neither Agree or Disagree			Strongly Agree
1. I am more engaged with my research than with my teaching.	1	2	3	4	5	6	7
2. I am engaged more closely with the work I do than with the University in which I work.	1	2	3	4	5	6	7
3. I am engaged more closely with the department/school in which I work than with the University.	1	2	3	4	5	6	7

Thank you for completing this questionnaire and for being part of this research on engagement. We now request your consideration of participating in further interviewing. It will provide an opportunity for you to discuss further your engagement to your university.

Would you consider participating in further interviewing?

YES   NO

If you circled yes, can you please provide your name and contact details below. Confidentiality is assured.

NAME:

_____

EMAIL ADDRESS:

_____

PHONE DETAILS:

_____

Thank You,
Your contribution to this research is highly valued
If you have any further enquires please feel free to contact the research group via:
Justine.Ferrer@vu.edu.au

Appendix A2: Higher Order (Common) Construct Calculations

To test the presence of higher order (common underlying) engagement constructs within this study Higher Order Confirmatory Factor Analysis (CFA) was used. A three tiered approach was used to reinforce the strength and applicability of each of the models.

Each of the measures were brought together as 'item bundles' (Hair et al. 2006), each of the measures were previously established and held up at the alpha level within this study which warranted item bundling. The item bundles are the average of the measure. This type of approach aids in model simplicity and parsimony.

In the first stage each of the measures within the models were treated as an item within a single CFA, termed the simple model. In the second stage a higher order CFA was carried out using the default settings within AMOS, termed the comparison model. The default settings in AMOS constrain the regression coefficient (λ) to 1 and the error variance (θ) to 0. The third stage allowed for the fixing of θ and λ on the model. This is calculated using the following equations because the matrix is a matrix of covariance as produced by AMOS (Munck 1979; Politis 2001, 2002).

Regression Coefficient: $\quad\quad\quad \lambda = \sigma\sqrt{\alpha}$

Error Variance: $\quad\quad\quad\quad\quad \theta = \sigma^2(1-\alpha)$

Where α = Cronbach's alpha for the construct
$\quad\quad\quad \sigma$ = Standard deviation of the item bundle
$\quad\quad\quad \sigma^2$ = Variance of the item bundle

This method maximizes the model using the available information from the data and determines the exact λ and θ. This model is termed the 'alpha model' because it is maximizing the available information using the reliability of the measure.

Each of the three steps was calculated for the calibration sample and then the final alpha model was compared with the validation sample. This was to enable reinforcement and validation of the findings and to enhance the robustness of the model. At all stages the following fit indices were used to calculate model fit (Table A.2.1). Together these fit indices provide the best overall analysis of model fit (Holmes-Smith et al. 2006).

Table A.2.1 Summary of Fit Statistics

Name	Abbreviation	Levels – Good fit	Notes
Chi Square	χ^2	p>0.05	Impacted by sample size
Normed Chi Square	χ^2/df	$1.0 < \chi^2/df < 3.0$	Close to 1 good fit, less than 1 over fit
Goodness of fit and adjusted goodness of fit	GFI AGFI	>0.95	0.9- 0.95 adequate fit Difference between the two should not be more than .06
Standardized root mean square residual	SRMR	SRMR <0.05	0.05-0.1 adequate fit
Root mean square error of approximation	RMSEA	RMSEA <0.05	0.00-0.1 adequate fit
Tucker Lewis, Non normed fit index or Rho2	TLI NNFI P2	TFI >0.95	0.9- 0.95 adequate fit >1 = overfit
Comparative Fit Index	CFI	CFI >0.95	0.9- 0.95 adequate fit

Note: Table adapted from Holmes- Smith et al. (2006)

The analysis is presented under the hypothesised common underlying constructs: emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes.

Emotional Engagement Capabilities

The variables of meaningfulness, vigour, availability and psychological capabilities were hypothesised to represent the common underlying factor of emotional engagement capabilities.

Stage 1 – Simple Model (emotional engagement capabilities)

Figure A.2.1 - Simple Model Step 1
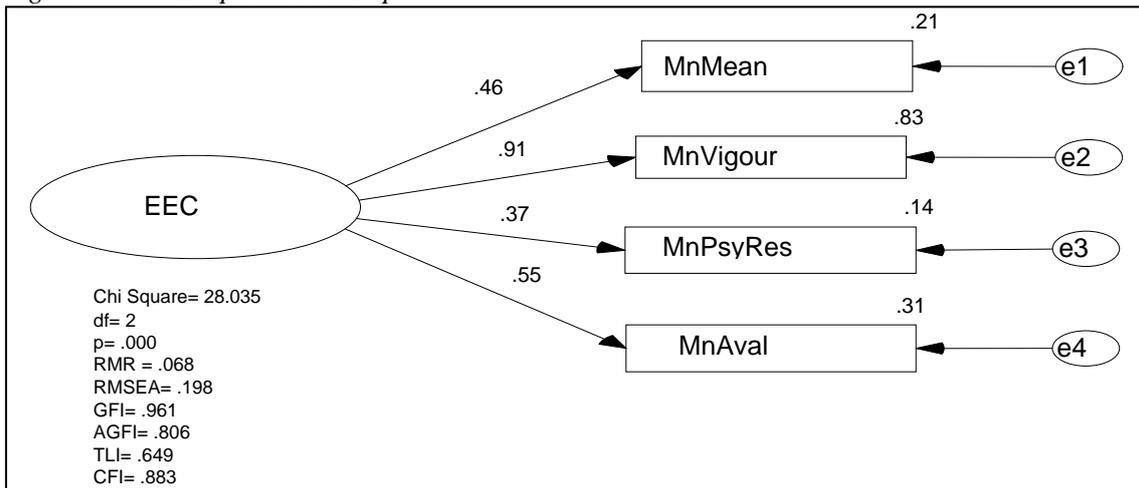
In Figure A.2.1, the first attempt at model fit using the simple model, the model did not adequately fit the data. The fit indices did not indicate model fit (χ^2calibration = 28.035, df=2, p=0.000).

Using the modification indices as produced in AMOS and a theoretical understanding of the indicators, the error terms on meaningfulness and vigour were co-varied (e1 & e2). The resulting effect was greater model fit (χ^2calibration = 3.9647, df=1, p=0.046), all indices except the χ^2 and RMSEA indicated adequate model fit. To correct for problems associated with normal distribution Bollen-Stein's correction was used, p=0.54, which suggests good model fit. The RMSEA indicates a moderate fit with the data.

Figure A.2.2 –Simple Model Stage 2
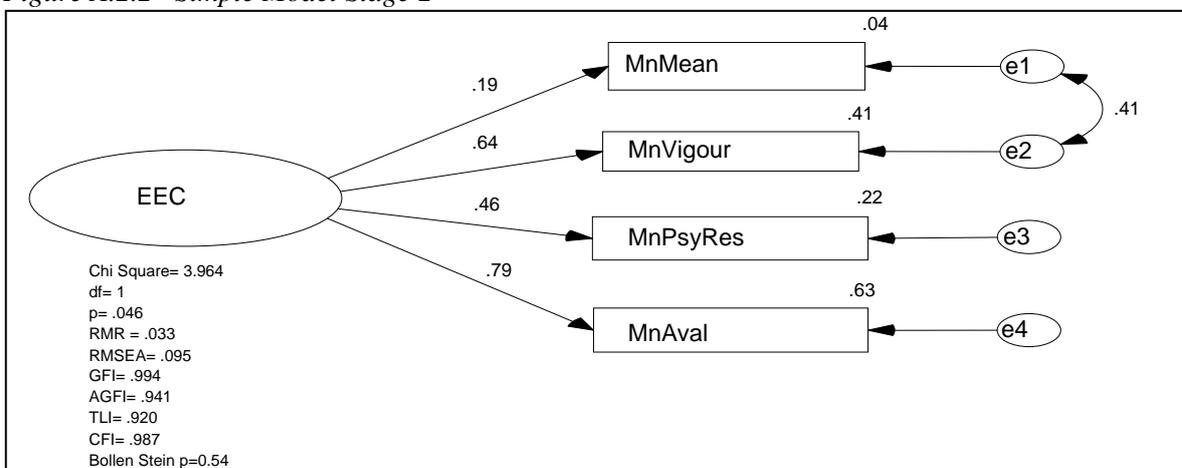
Stage 2 – Comparison Model (emotional engagement capabilities)

For the comparison model, each of the measures (item bundles) was treated as an indicator within a higher order CFA. Using the co-varying as in the simple model (Figure A.2.2) the comparison model co-varied the residual terms on the latent factors meaningfulness and vigour (r1 & r2). As a common underlying factor, emotional engagement capabilities maintained model fit with the same accuracy as the simple model (Figure A.2.3.).

Figure A.2.3 – Comparison Model (emotional engagement capabilities)
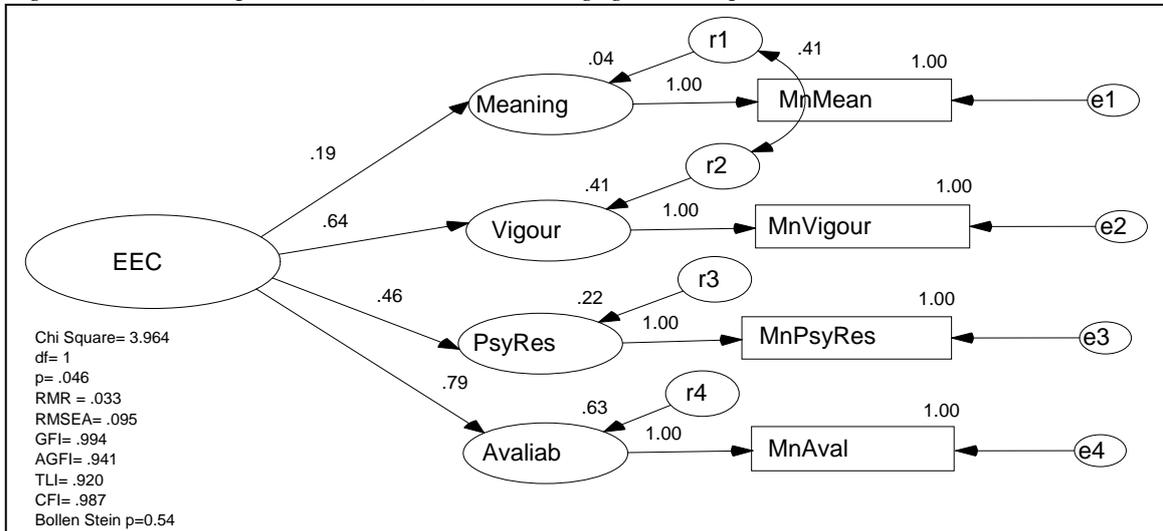
Stage 3 – Alpha Model (emotional engagement capabilities)

To calculate the alpha model requires the fixing of both λ and θ in the model to maximise the model fit using the available information. The calculations for λ and θ are presented in Table A.2.2.

Table A.2.2 – Calculation for the Alpha Model (emotional engagement capabilities)

Variable	Mean	S.D σ	α	σ^2	$\sqrt{\alpha}$	$1-\alpha$	$\lambda= \sigma\sqrt{\alpha}$	$\theta= \sigma^2(1-\alpha)$
Meaningfulness	5.906	0.927	0.919	0.859	0.959	0.081	0.889	0.070
Vigour	5.023	0.954	0.828	0.911	0.910	0.172	0.868	0.157
Availability	5.519	0.934	0.838	0.873	0.915	0.162	0.855	0.141
Psychological Resources	4.433	1.306	0.889	1.706	0.943	0.111	1.232	0.189

The λ and the θ values were fitted onto the model; using the available information the model is maintained (Figure A.2.4).

Figure A.2.4 - Alpha Model (emotional engagement capabilities)
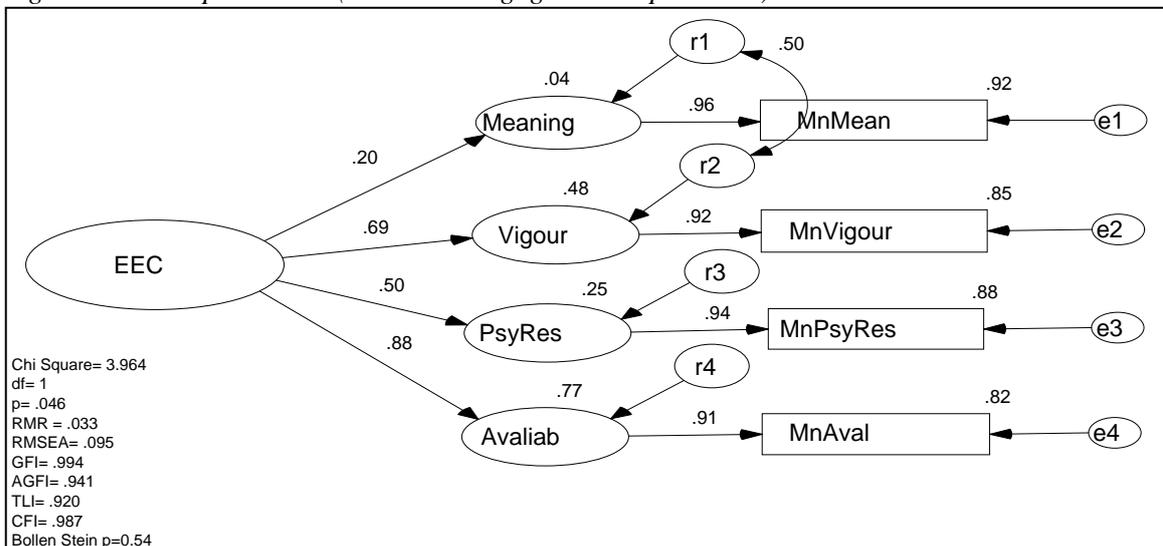
Validation of Model (emotional engagement capabilities)

Using the model that was calibrated in the previous three stages, the same process was replicated and fitted to the validation sample using the alpha model approach. The λ and θ were calculated and are presented in Table A.2.3 based on the validation sample.

Table A.2.3 Calculation for the Alpha Model (emotional engagement capabilities) Validation Sample

Variable	Mean	S.D σ	α	σ²	√ α	1- α	λ= σ√α	θ= σ²(1-α)
Meaningfulness	5.919	1.025	0.950	1.052	0.975	0.050	1.000	0.053
Vigour	5.136	0.999	0.884	0.998	0.940	0.116	0.939	0.116
Availability	5.710	0.892	0.896	0.796	0.947	0.104	0.844	0.083
Psychological Resources	4.418	1.239	0.882	1.536	0.939	0.118	1.164	0.181

When fit to data the validation sample revealed a slight overfit of the model (Figure A.2.5) ($\chi^2_{validation}$ = 0.16, df=1, p=0.69). This is indicated in normed χ^2=0.16.

Figure A.2.5. Alpha Model _ Validation Step 1
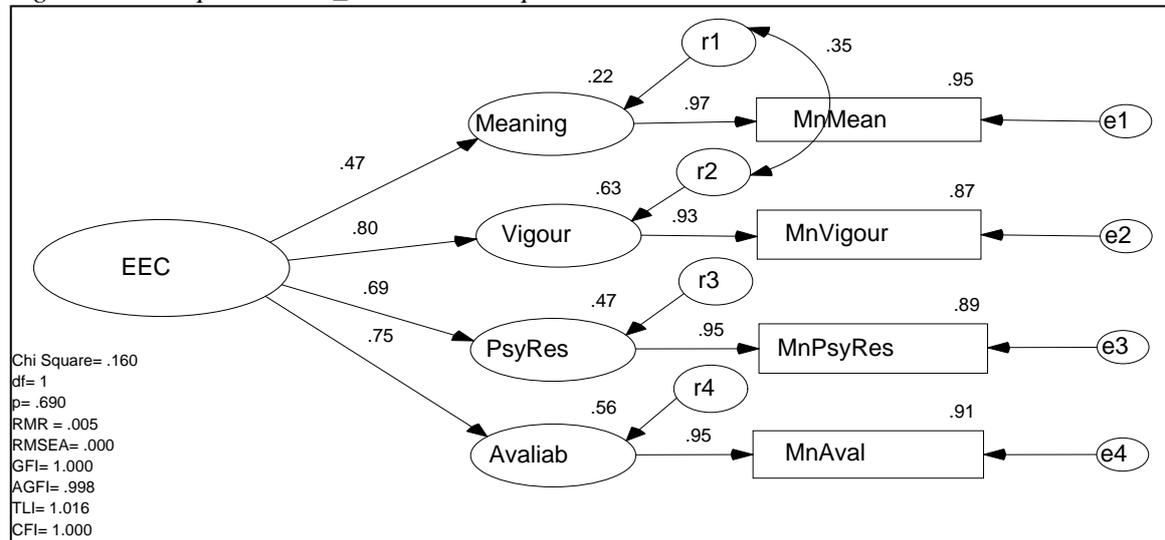
Subsequently the co-varying residuals were removed to test model fit, the model that was revealed is presented in Figure A.2.6. This model has moderate to adequate fit on the indices of RMR. GFI, AGFI, TLI and CFI, however, the χ^2 ($\chi^2_{validation}$ = 10.169, df=2, p=0.006).and the RMSEA are both inflated. When correcting the model with Bollen-Stein correction, the p=0.046, which rejects this model.

Overall it can be concluded that the measures of meaningfulness, vigour, availability and psychological resources is represented by the common underlying factor- emotional engagement capabilities. Whilst the models do not fit perfectly to the data, the common underlying hypothesis is still partially supported. For both the calibration and the validation sample the regression coefficients indicate that each of the individual latent indicators are significant predictors of emotional engagement capabilities.

Figure A.2.6 – Alpha Model – Validation sample Step 2
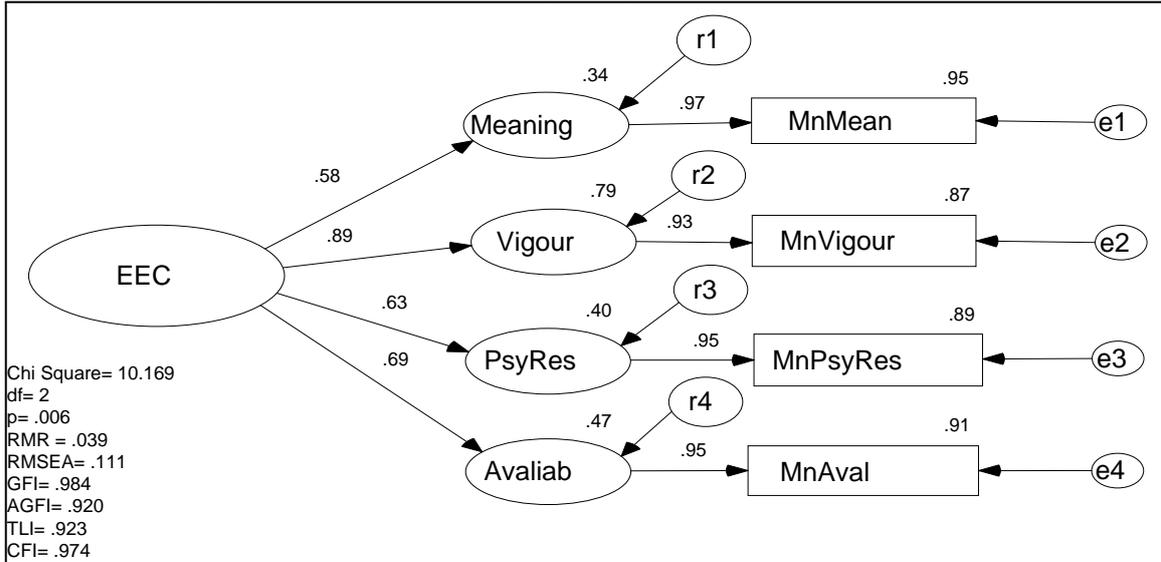
Cognitive Engagement Capabilities

The measures of motivation, job involvement, dedication, attention and absorption were hypothesized to be represented by the common underlying construct – cognitive engagement capabilities. This is established through a three stage approach.

Stage 1 – Simple Model (cognitive engagement capabilities)

The simple model is presented in Figure A.2.7. The fit indices demonstrate that the data does not fit the model. ($\chi^2_{calibration}$ = 61.866, df=5, p=0.000).

Figure A.2.7 - Simple Model (cognitive engagement capabilities) Stage 1
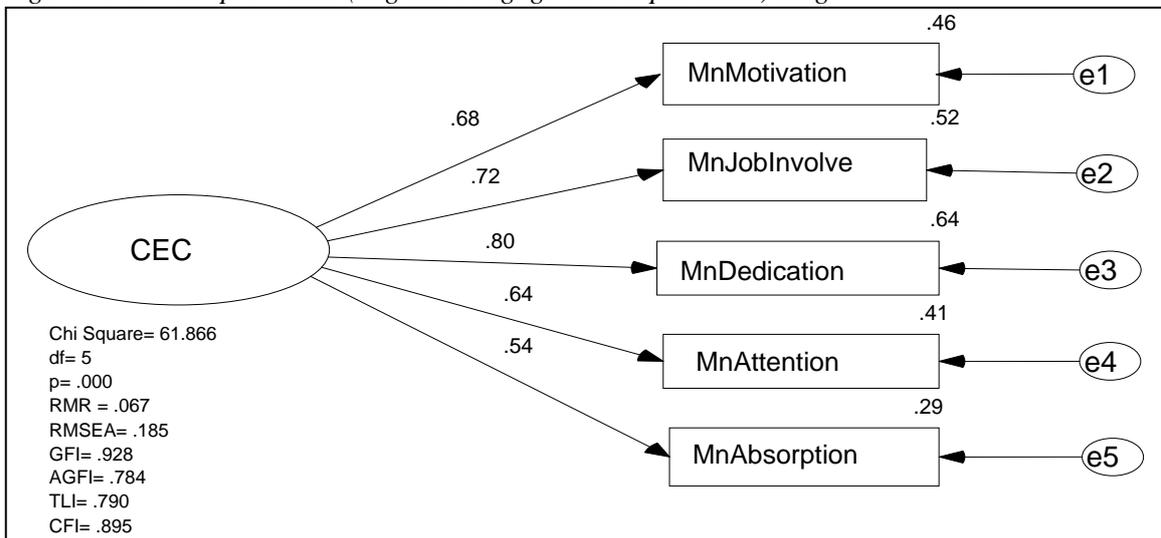
With theoretical support and consultation of the reported modification indices in AMOS output, the error terms on job involvement and attention were co-varied (e2 & e4). This resulted in better model fit ($\chi^2_{calibration}$ = 12.357, df=4, p=0.015). (Figure A.2.8). Each of the reported fit indices were of the moderate to good levels of model fit, the exception being the χ^2 and associated significance value. To correct for distribution Bollen-Stein correction was used, p= 0.184, this supports acceptance of the model.

Figure A.2.8 – Simple Model (cognitive engagement capabilities) Stage 2
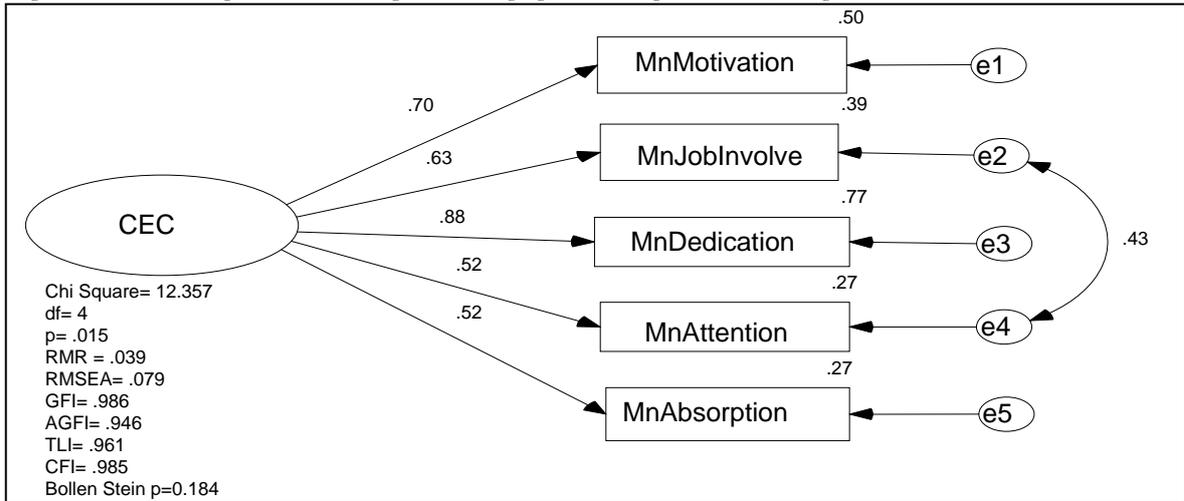
Stage 2 – Comparison Model (cognitive engagement capabilities)

The comparison model is represented by a higher order CFA. The comparison model results support the results found for the simple model. Like emotional engagement capabilities, the co-varying of terms for cognitive engagement capabilities is on the residual to the latent of the indicator. The result was the co-varying of job involvement and attention (r2 & r4). The results are presented in Figure A.2.9 below. The comparison model maintained model fit.

Figure A.2.9- Comparison Model (cognitive engagement capabilities)
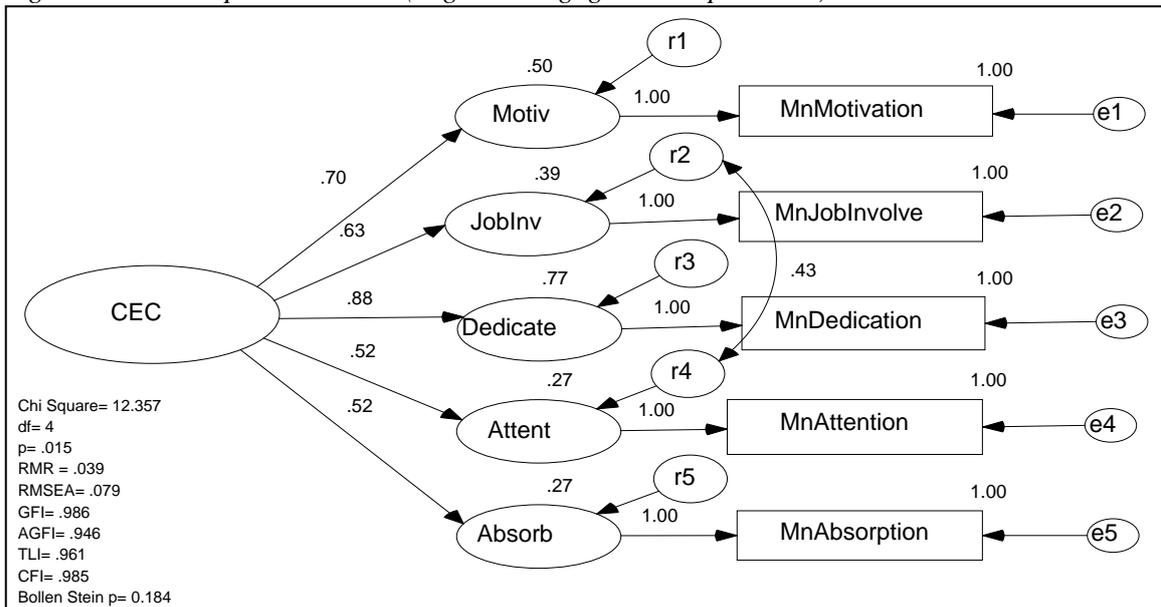
Stage 3 – Alpha Model (cognitive engagement capabilities)

The alpha model requires the calculation of λ and θ based on the information available within the sample. These calculations are presented in Table A.2.4

250

Table A.2.4 Calculation for the Alpha Model (cognitive engagement capabilities)

Variable	Mean	S.D σ	α	σ²	√ α	1- α	λ= σ√α	θ= σ²(1-α)
Motivation	6.170	0.885	0.895	0.783	0.946	0.105	0.837	0.082
Job Involvement	4.407	1.301	0.896	1.692	0.947	0.104	1.231	0.176
Dedication	5.250	1.106	0.899	1.223	0.948	0.101	1.049	0.124
Attention	5.601	0.966	0.939	0.933	0.969	0.061	0.936	0.057
Absorption	4.625	1.184	0.797	1.401	0.893	0.203	1.057	0.284

The λ and θ are then fixed onto the model and model fit is calculated. This approach maximises the information available. As noted in Figure A.2.10, when using all the available information the data fits the model (moderate – adequate levels of model fit) when correcting for distribution (Bollen-Stein p=0.184).

Figure A.2.10 Alpha Model (cognitive engagement capabilities)
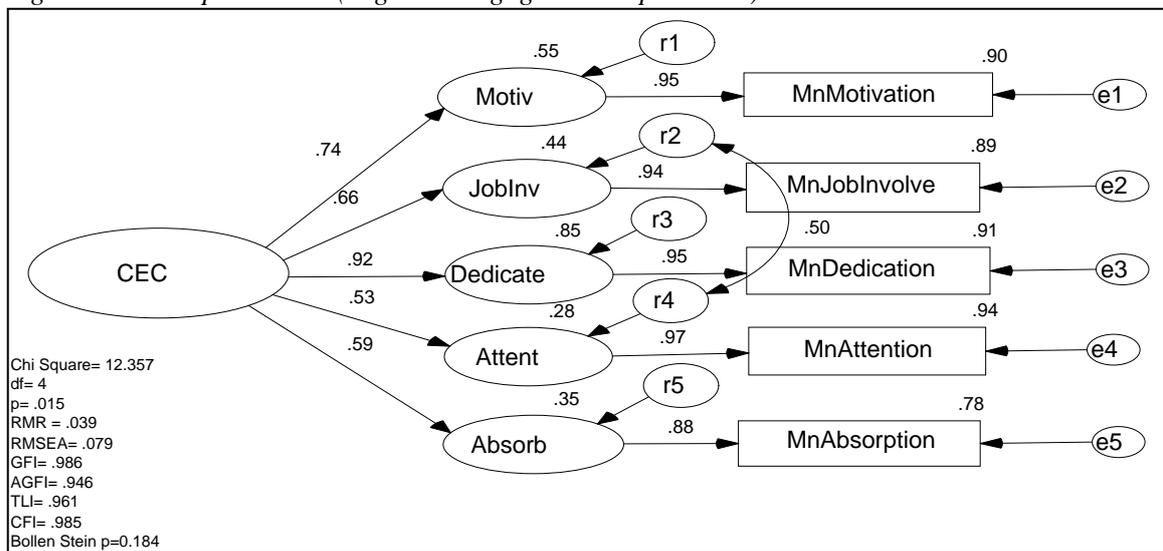
Validation of Model (cognitive engagement capabilities)
To validate the model that was developed and supported in the calibration stage, the model was fitted to the validation sample. The λ and θ were calculated to fit on the alpha model based on the validation sample. The calculations are presented in Table A.2.4.

Table A.2.4 Calculation for the Alpha Model (cognitive engagement capabilities) Validation Sample

Variable	Mean	S.D σ	α	σ²	√ α	1- α	λ= σ√α	θ= σ²(1-α)
Motivation	6.206	0.879	0.896	0.773	0.947	0.104	0.832	0.080
Job Involvement	4.511	1.250	0.889	1.562	0.943	0.111	1.178	0.173
Dedication	5.362	1.107	0.912	1.226	0.955	0.088	1.058	0.108
Attention	5.609	0.970	0.931	0.941	0.965	0.069	0.936	0.065
Absorption	4.772	1.111	0.751	1.234	0.867	0.249	0.963	0.307

The λ and θ were fixed on to the common underlying model for cognitive engagement capabilities. The alpha model as presented in Figure A.2.11, validates the developed calibration model with the validation sample. ($\chi^2_{validation}$ = 6.636, df=4, p=0.156). All of the fit indices indicate good model fit. These results suggest that the model was adequately validated with the testing on the additional validation sample.

251

Overall, the results present the measures of motivation, job involvement, dedication, attention and absorption as representing the common underlying construct of cognitive engagement capabilities. The model is supported at the calibration stage and then verified at the validation stage. The fit indices for both samples indicate that the there was moderate to adequate model fit. For both sample, each of the regression paths significant predict the common underlying construct of cognitive engagement capabilities.

Figure A.2.10 Alpha Model (cognitive engagement capabilities) - Validation Sample
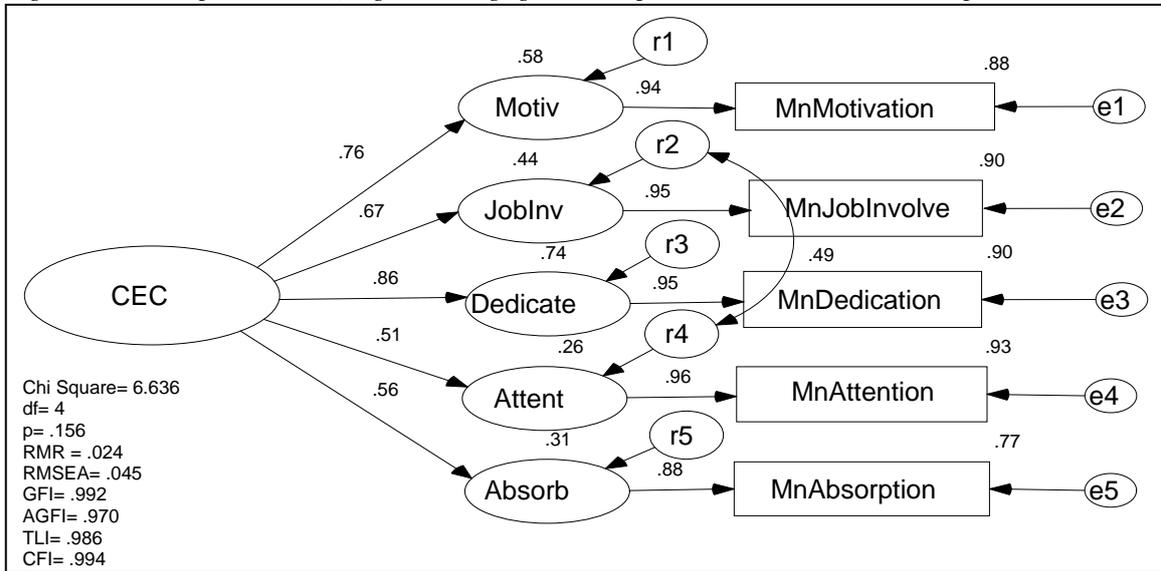
Individual Engagement Outcomes

The measures of affective commitment, job satisfaction, disengagement, exhaustion and intention to quit were hypothesized to represent the common underlying construct if individual engagement outcomes. This is established through a three stage approach.

Stage 1 – Simple Model (individual engagement outcomes)

The results of the simple model are presented in Figure A.2.12, this first model indicates a poor fit between the data and the model as demonstrated by the fit indices ($\chi^2_{calibration}$ = 50.579, df=5, p=0.000).

Figure A.2.12 – Simple Model (individual engagement outcomes) – Step 1
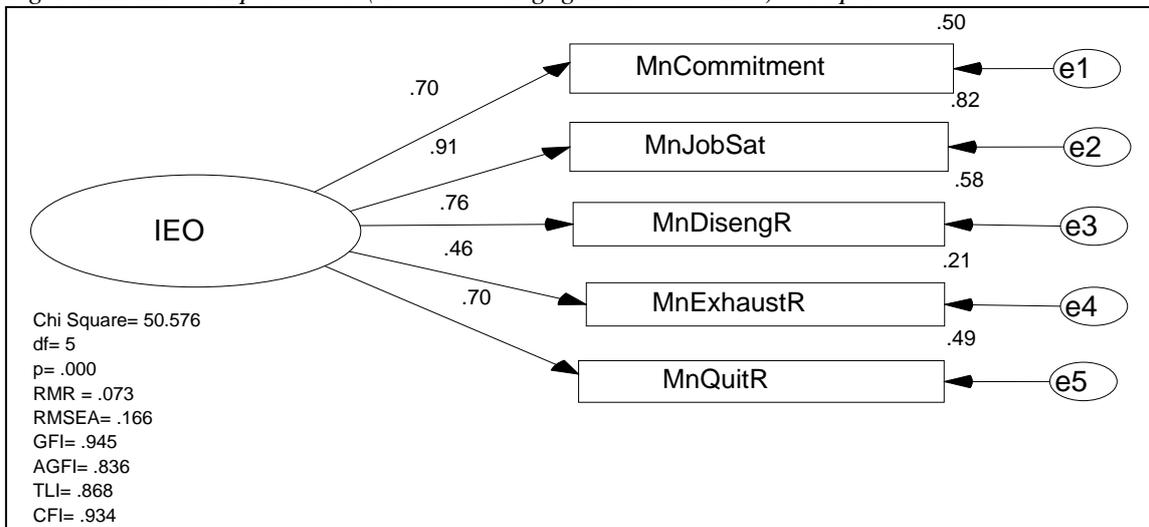
With theoretical justification and consultation of the modification indices, the following error terms were co-varied commitment and intention to quit (e1 & e5). In addition, disengagement and intention to quit were also co-varied (e3 & e5). The result of these model amendments present a better model fit (Figure A.2.13)

Figure A.2.13 Simple Model (individual engagement outcomes) – Step 2
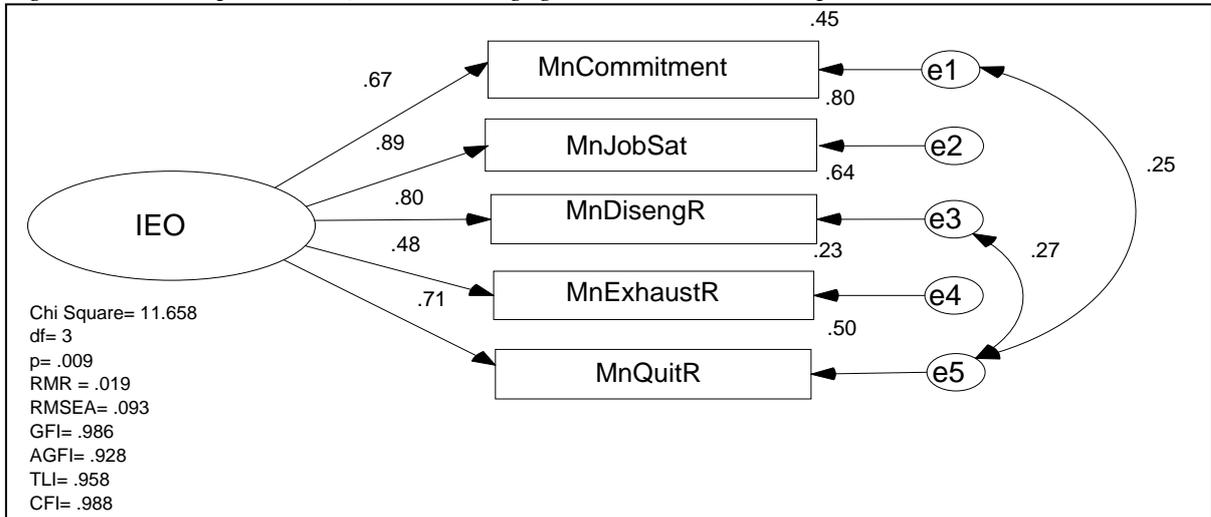
The fit indices indicate moderate to adequate level fit of the data to the revised model ($\chi^2_{calibration}$ = 11.658, df=3, p=0.019). To correct for distribution the Bollen–Stein correction was used, the result was acceptance of the current model fit, p=0.137.

Stage 2 – Comparison Model (individual engagement outcomes)
The comparison model is presented in Figure A.2.14. Using the co-varying error terms as identified in the simple model of individual engagement outcomes these were fixed onto the residual error terms in the comparison model. Consistent results were found which indicate that the model still fits the data at a moderate to adequate level as a common underlying construct.

Figure A.2.14 Comparison model (individual engagement outcomes)
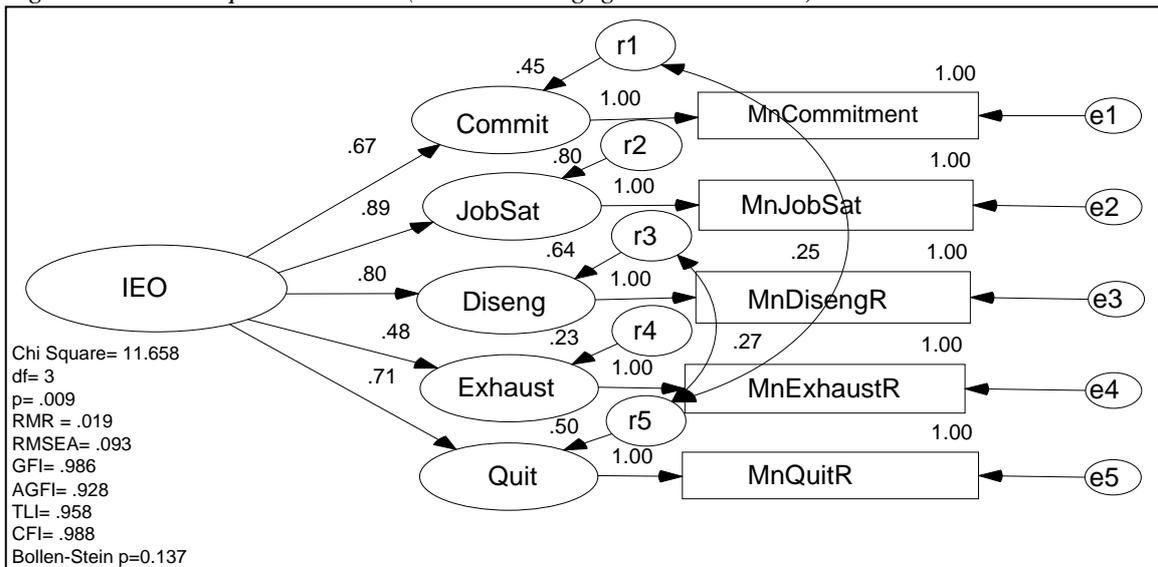
Stage 3 – Alpha Model (individual engagement outcomes)
The alpha model requires the calculation λ and θ, then these are fixed onto the model to maximise the available information. The calculations for λ and θ are presented in Table A.2.5.

Table A.2.5 – Calculations for Alpha Model (individual engagement outcomes)

Variable	Mean	S.D σ	α	σ^2	$\sqrt{\alpha}$	$1-\alpha$	$\lambda= \sigma\sqrt{\alpha}$	$\theta= \sigma^2(1-\alpha)$
Commitment	3.871	1.236	0.848	1.528	0.921	0.152	1.138	0.232
Job Satisfaction	4.800	1.194	0.868	1.426	0.932	0.132	1.112	0.188
Disengagement	2.947	0.520	0.719	0.270	0.848	0.281	0.441	0.076
Exhaustion	2.681	0.635	0.836	0.403	0.914	0.164	0.581	0.066
Intention to Quit	4.751	1.715	0.771	2.940	0.878	0.229	1.506	0.673

When λ and θ were fixed onto the model, the results as found in the simple and comparison still held. The model moderately to adequately fit the data when using Bollen-Stein correction. This model is presented in Figure A.2.15.

Figure A.2.15 Alpha Model (individual engagement outcomes)
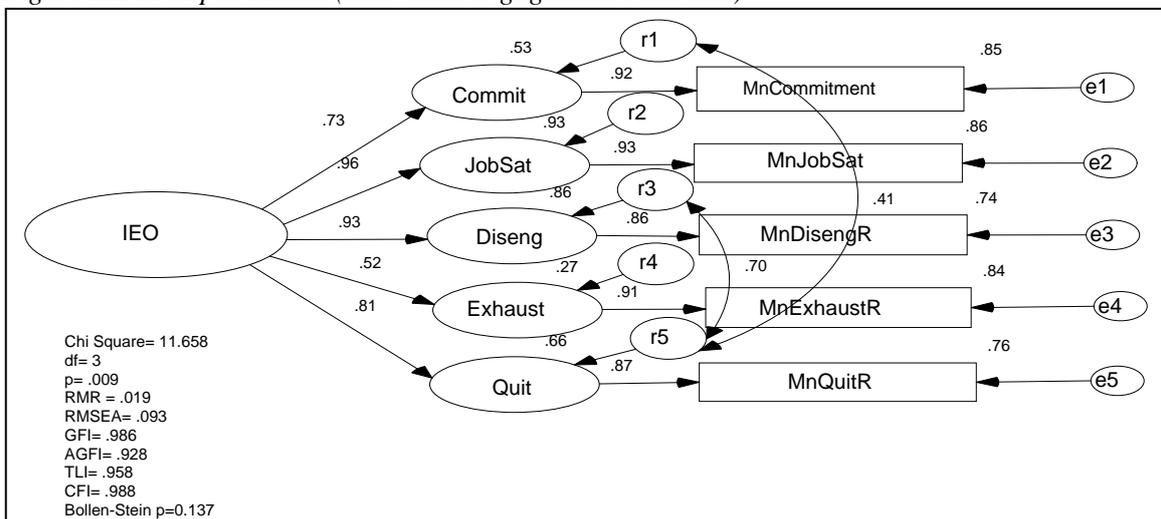
Validation of Model (individual engagement outcomes)
To validate the model that was developed in the calibration (alpha) stage it was fitted to the validation sample using the same processes. The calculations are presented in Table A.2.6.

Table A.2.6 – Calculations for Alpha Model (individual engagement outcomes) Validation Sample

Variable	Mean	S.D σ	α	σ^2	$\sqrt{\alpha}$	$1-\alpha$	$\lambda= \sigma\sqrt{\alpha}$	$\theta= \sigma^2(1-\alpha)$
Commitment	3.950	1.208	0.852	1.459	0.923	0.148	1.115	0.216
Job Satisfaction	5.028	1.066	0.852	1.135	0.923	0.148	0.984	0.168
Disengagement	3.017	0.536	0.735	0.287	0.857	0.265	0.460	0.076
Exhaustion	2.696	0.613	0.823	0.376	0.907	0.177	0.556	0.066
Intention to Quit	4.783	1.625	0.720	2.639	0.849	0.280	1.379	0.739

Once the λ and θ were calculated these were fixed onto the model and model fit was reassessed. The model based on the calibration sample had two co-varying elements (r1 & r5, and r3 & r5) when fitted to the validation sample there was an overfit of the model to the data (Figure A.2.16) ($\chi^2_{validation}$ = 0.937, df=3, p=0.817) This indicates that the model fits the data better for the validation sample than compared to the calibration sample.

Figure A.2.16 Alpha Model (individual engagement outcomes) Validation Sample – Overfit
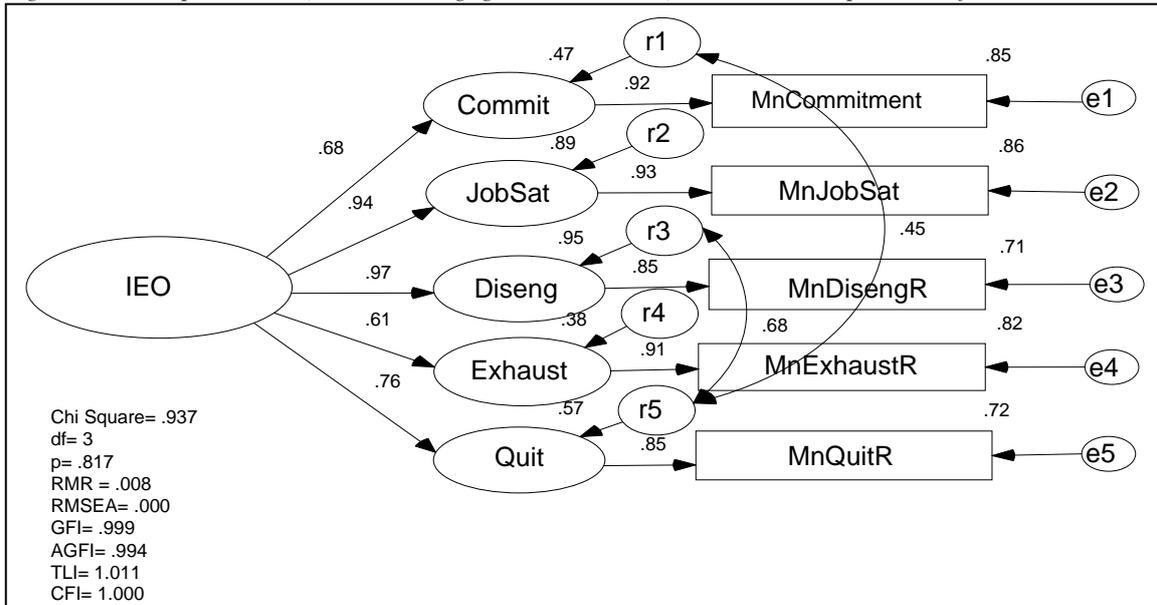
Due to the overfit the co-varying r3 and r5 (Figure A.2.17) was removed this improved the fit to an acceptable level ($\chi^2_{validation}$ = 6.051, df=4, p=0.195). This covariance was removed as opposed to the co-varying between r1 and r5 because the strength of the relationship between affective commitment and intention to quit is well recognised within the literature (Gaiduk, Gaiduk & Fields 2009; Mano-Negrin 1998; Riketta & Dick 2005). All the fit indices indicate a good fit of the model to the data.

Figure A.2.17 - Alpha Model (individual engagement outcomes) Validation Sample
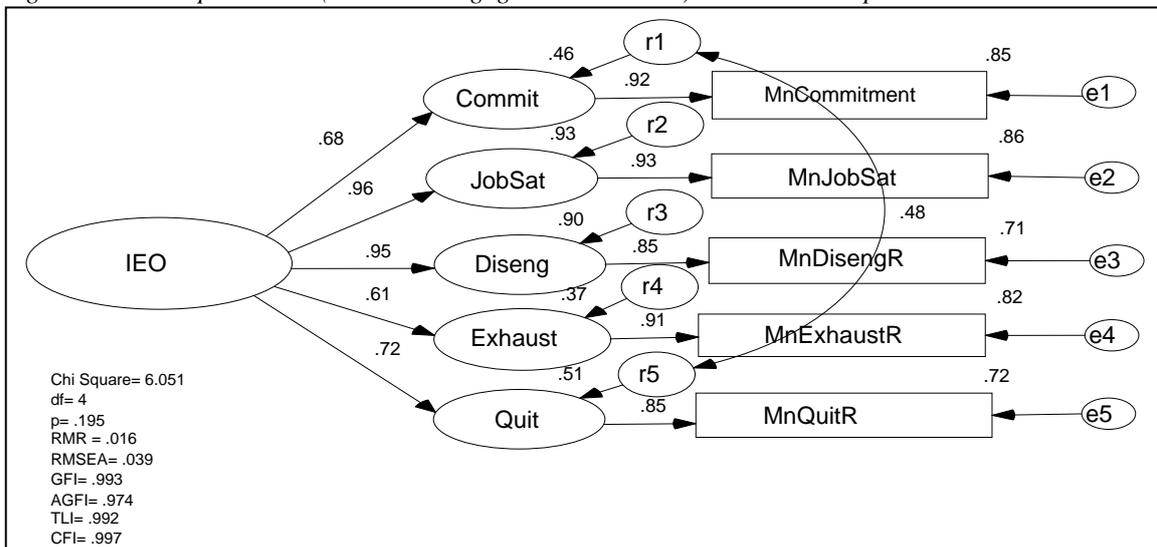
In summary, the inter relationships between commitment, job satisfaction; disengagement, exhaustion and intention to quit indicate a common underlying construct – individual engagement outcomes. This is collaborated with validation sample which indicated a better fit between the data and the model.

Appendix A3: Hierarchical Regression Analysis of Full Engagement Model

Hierarchical regression was used to establish the significance of the relationships between each of the engagement elements before testing within a full structural model. The benefit of this approach was to determine the degree of the relationships between the emotional engagement capabilities and cognitive engagement capabilities on the individual engagement outcomes, whilst controlling for potential variation from the contextual variables and the organisational aspects. This appendix will detail each of the steps of the analysis. The hierarchical model that was tested is presented in Figure A.3.1.

Figure A.3.1 – Hierarchical Model

| **Contextual Variables** | **Organisational Characteristics** | **Individual Engagement Capabilities** | **Engagement Outcomes** |
| Age
Sex
Lecturer Level
Group of 8 | POS
JobCh | Emotional Engagement Capabilities

Cognitive Engagement Capabilities | Individual Engagement Outcomes |
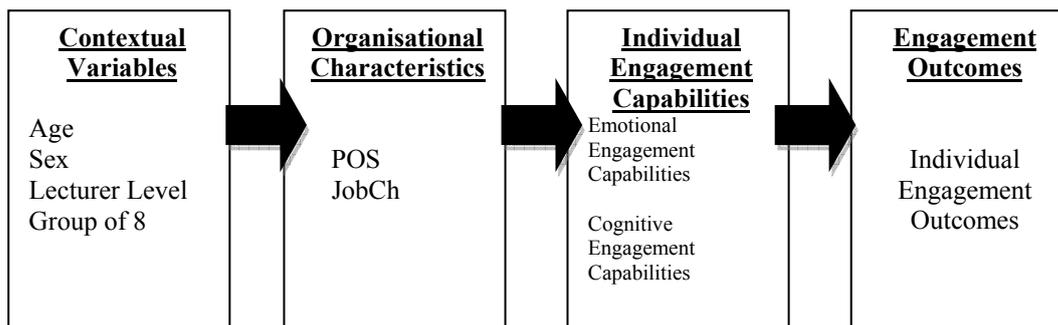
Multicollinearity

Issues of multicollinearity can be caused from the correlations between the independent variables which can lead to difficulties in the interpretation of the regression statistics (Pedhazur 1982). An initial inspection of the data showed this to be unlikely as no correlation between the variables were greater than .7 which means the tolerance value is above .5 (Hair et. al 2006). To further ensure that there were no issues of multicollinearity a Variance Inflation Faction (VIF) was calculated using SPSS. Hair et al. (2006) notes a VIF of 1 means that the square root of 1 is 1 and the standard error is unaffected. Having calculated the VIF for the variables within regression, the predictor (independent) variables used in the multiple regressions were within the required thresholds to indicate that multicollinearity is not a concern (Table A.3.1).

Table A.3.1 Collinearity Statistics and Multicollinearity Test

Variable	Tolerance Value	VIF	1/VIF < 0.05	SQRT VIF	Multicollinearity
Gender		1.098	0.91	1.05	No
Higher Lecturer	.911	1.158	0.86	1.08	No
Go8	.864	1.049	0.95	1.02	No
55 years and over	.953	1.122	0.89	1.06	No
POS	.891	1.485	0.67	1.22	No
JobCH	.673	1.689	0.59	1.30	No
EEC	.592	1.718	0.58	1.31	No
CEC	.582	1.473	0.68	1.21	No

The thresholds indicated by Gujarati (2003) indicate that the VIF if higher than 20 will demonstrate issues of multicollinearity and when the VIF is divided by one (1/VIF) then the resulting number if lower than 0.05, then this too suggests issues of multicollinearity. Hair et al. (2006) notes that square root of VIF of close to 1 means that the standard error remains substantively unchanged and there is no sign of multicollinearity. This is a common cut off value to determine if there is multicollinearity. According to Hair (2006) a tolerance value of .10 which corresponds to a VIF value of 10 with a square root of 10 creating a 3.16 inflation of the

standard errors. As shown in Table A.3.1 there is no evidence for multicollinearity for any of the variables entered into the regression equation.

Regression – Calibration Sample
The model was tested in the first instance using the calibration sample. The first step entered the contextual variables that were specific to academics, these were 55 years and over, gender, higher lecturer level and whether the academic worked at a Group of 8 university or not. In the first step, the model was not significant with a multiple R= 0.15, $F_{(4, 327)}$ = 1.977, p=0.098. None of the contextual variables were significant predictors of individual engagement outcomes, as presented in the summary hierarchical regression table A.3.1.

Table A.3.2. Hierarchical Regression Results for Calibration Sample

		B	SE	Beta â	t	Sig	Zero Order	Partial	Part	AdjR²	ÄR²
		INDIVIDUAL ENGAGEMENT OUTCOMES									
		Calibration Sample									
Step 1										.012	.024
	(Constant)	3.81	.16		24.12	.00					
	Sex	-.04	.10	-.02	-0.43	.67	-.049	-.024	-.023		
	55years +	.14	.11	.07	1.24	.22	.074	.069	.068		
	HighLect	.14	.11	.07	1.18	.24	.095	.065	.064		
	Go8	.20	.10	.10	1.86	.06	.107	.102	.101		
		F (4,327) = 1.977, p=0.098									
Step 2										.521	.506
	(Constant)	.86	.21		4.1	.00					
	Sex	-.05	.07	-.03	-0.73	.47	-.049	-.040	-.028		
	55years +	.19	.08	.10	2.46	.015*	.074	.135	.093		
	HighLect	.05	.08	.03	0.66	.51	.095	.037	.025		
	Go8	.03	007	.01	0.34	.73	.107	.019	.013		
	POS	.29	.03	.43	9.73	.000***	.631	.475	.370		
	JobCh	.37	.04	.40	8.84	.000***	.617	.440	.336		
		F (6,325)= 60.921, p=0.000									
Step 3										.598	.079
	(Constant)	-.59	.27		-2.22	.03					
	Sex	.05	.06	.03	0.77	.44	-.049	.043	.027		
	55years +	.14	.07	.07	1.88	.06	.074	.104	.066		
	HighLect	.01	.07	.00	0.18	.86	.095	.010	.006		
	Go8	.02	.07	.01	0.27	.79	.107	.015	.009		
	POS	.24	.03	.36	8.67	.000***	.631	.435	.302		
	JobCh	.22	.05	.24	4.98	.000***	.617	.267	.173		
	EEC	.40	.06	.33	7.2	.000***	.635	.372	.251		
	CEC	.04	.04	.04	0.82	.41	.414	.046	.029		
		F (8,323) = 62.663, p=0.000									

Note: EEC = emotional engagement capabilities, CEC = cognitive engagement capabilities. Dependant Variable - Individual Engagement Capabilities. B= Unstandardised coefficients, SE = standard error of B, Beta β = standardised coefficients, AdjR² = Adjusted R squared, ΔR² = change in R squared. * p<.05, **p< .01, *** p<.001.

The second step introduced the organisational aspects of POS and JobCH, the model was significant with a multiple R = 0.73 (R²= 0.53), $F_{(6, 325)}$ = 60.921, p=0.000. In total, 53% (52% adjusted) of the variation in individual engagement outcomes was accounted for. Of the organisational element, both POS and JobCh were significant predictors of individual engagement outcomes. Interestingly, with the introduction of the organisational aspects, those academics aged 55 years and over became a significant predictor of individual engagement outcomes (β=0.10, p<0.05). Using the squared semi partial correlations (from the part column) of each of the predictor variables as presented in Table A.3.2., POS accounted for 13.7% (sr²=0.370²) of the explained variance in the dependant variable, JobCh accounted for 11.3% (sr²=0.336²) and higher lecturer levels accounts for 0.86% (sr²=0.093²).

With the introduction of the individual engagement capabilities at the third step, the model was significant with a multiple R= 0.78, $F_{(8, 323)}$= 62.663, p=0.000. 60.1% (59.8% adjusted) of the variation in the individual engagement outcomes was accounted for. Of the individual engagement capabilities, only the emotional engagement capabilities was a significant predictor (β=0.33, p<0.001). As expected the organisational aspects remained significant predictors in the model with the introduction of the individual engagement capabilities. POS accounted for the most explained variation, accounting for 9.8% (sr^2=0.302^2), emotional engagement capabilities for 6.3% (sr^2=0.251^2) and the JobCh 3% (sr^2=0.173^2). Contrary to the expected results, the cognitive engagement capabilities were not significant, the correlation between cognitive engagement capabilities and the individual engagement outcomes was significant (r=0.414), however, the partial correlation is only indicating a small relationship. This may be due to the simultaneous entry of both individual capabilities into the regression equation; emotional engagement capabilities may be acting as a mediating variable between cognitive engagement capabilities and individual engagement outcomes. The benefit of a validation sample allows for the cross checking of these results.

Hierarchical Regression - Validation Sample
The intention of the validation sample was to provide verification of the results found in the first sample. The exact same hierarchical regression was tested, the results of which are presented in Table A.3.3.

In the first step of the regression the contextual variables were entered. The model was significant with a multiple R = 0.23 (R^2=0.05), $F_{(4,327)}$= 4.359, p=0.002. The group of 8 university group was a significant predictor of individual engagement outcomes (β=0.16, p<0.01). In the second step the organisational elements were entered, the model was significant with a multiple R =0.71 (R^2=0.5), $F_{(6,325)}$= 53.62, p=0.000. In step two 50% (48.8% adjusted) of the variation in individual engagement outcomes is accounted for. Both of the organisational variables were significant predictors of the dependant variable, when controlling for variation due to the introduction of the organisational elements, group of 8 is no longer a significant predictor. POS accounted for 14% (sr^2=0.374^2) of the explained variation and JobCh accounted for 9.5%.

The third step saw the introduction of the individual engagement capabilities, emotional engagement capabilities and cognitive engagement capabilities. The model was significant with a multiple R = 0.80 ($R^2$0.63), $F_{(8,323)}$ = 69.983, P=0.000. The model accounted for 63.4% (62.5% adjusted) of the variation in individual engagement outcomes. Both of the individual engagement capabilities and the organisational aspects were found to be significant predictors of the individual engagement outcomes. The emotional engagement capabilities accounted for 9.2% (sr^2=0.303^2) of the explained variation in the dependant variable, POS accounted for 6.8% (sr^2=0.26^2), JobCh accounted for 3% (sr^2=0.172^2) and the cognitive engagement capabilities accounted for 0.6% (sr^2=0.079^2).

The results found within the validation sample were slightly different. Firstly the significance of the contextual demographic variables varied between samples, however, when introducing the organisational elements and the individual engagement capabilities the variation the significant contextual variables was controlled for. The differences between the significant variables between the samples could be due to sample fluctuations.

As expected in both samples, POS and JobCh were both significant predictors in both steps 2 and 3. The most significant differences between the samples were the effect of the cognitive engagement capabilities on the individual engagement outcomes. The calibration samples did not find cognitive engagement capabilities as a significant predictor whereas the validation sample did. It could be argued that the effect of cognitive engagement capabilities on individual

engagement outcomes in the calibration was potentially being mediated through the emotional engagement capabilities. And in the validation sample the strength of the mediation effect may not quite as a high. Overall the results of the hierarchical regressions in both samples provide support for the hypotheses.

Table A.3.3. Hierarchical Regression Results for Validation Sample

		B	SE	Beta â	t	Sig	Zero Order	Partial	Part	AdjR²	ÄR²
		INDIVIDUAL ENGAGEMENT CAPABILITIES									
		Validation Sample									
Step 1										.039	.051
	(Constant)	3.48	.16		22.09	.000					
	Sex	.14	.09	.09	1.51	.13	.033	.083	.081		
	55years +	.15	.140	.08	1.46	.15	.098	.080	.079		
	HighLect	.18	.10	.10	1.73	.09	.119	.095	.093		
	Go8	.14	.09	.09**	2.94	.004**	.174	.160	.158		
		**F (4,327) = 4.359, p=0.002**									
Step 2										.488	.447
	(Constant)	1.29	.19		6.85	.000					
	Sex	.05	.07	.03	0.77	.44	.033	.043	.030		
	55years +	.11	.08	.06	1.43	.153	.098	.079	.056		
	HighLect	.00	.08	.00	0.02	.99	.119	.001	.001		
	Go8	.11	.08	.06	1.46	.14	.174	.081	.058		
	POS	.26	.03	.43	9.52	.000***	.618	.467	.374		
	JobCh	.29	.04	.36	7.85	.000***	.590	.399	.309		
		**F (6,325)= 53.62, p=0.000**									
Step 3										.625	.137
	(Constant)	-.50	.247		-2.12	.034					
	Sex	.10	.06	.06	1.60	.11	.033	.089	.054		
	55years +	.02	.07	.01	0.24	.81	.098	.013	.008		
	HighLect	-.10	.07	-.05	-1.45	.15	.119	-.080	-.049		
	Go8	.07	.06	.04	1.13	.26	.174	.063	.038		
	POS	.19	.03	.32	7.74	.000***	.618	.395	.260		
	JobCh	.18	.03	.22	5.10	.000***	.590	.273	.172		
	EER	.41	.05	.40	9.01	.000***	.670	.448	.303		
	CER	.10	.04	.10	2.36	.019*	.428	.130	.079		
		**F (8,323) = 69.983, p=0.000**									

Appendix A4: Full Measurement Model Calculations

The full structural model was assessed using the calibration sample and then verified with the validation sample. The common underlying factors were first developed into item bundles, where each of the measures represented an item (Hair et al. 2006). This was a viable option as the hypothesised common underlying constructs held as presented in Chapter Six.

In testing the full model, an approach was used which maximises the reliability using composite reliability calculations and congeneric factors that can be fixed on to the full structural model (Munck 1979; Politis 2001, 2002). The steps are outlined below for calculating the maximised reliability and congeneric factor scores for emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes.

Step 1: Fit the model
Step 2: Compute a composite using the factor score regression weights by;
    Sum the factor score regression weights
    Divide each factor score weight by the total to get new values.
    In SPSS, calculate the composite by running the syntax of item number multiplied by factor score weight that was generated in step 2 b.
Step 3: In SPSS, find the standard deviation, variance, minimum and maximum of the composite.
Step 4: Calculate the reliability by;
    In AMOS find the implied covariance matrix and construct matrix.
    In AMOS find the error variances and enter on the diagonal of the theta- delta matrix
    Using the recalibrated (those summed to equal 1) factor score weights to put into the WFS vector.
    Run the syntax window and record the reliability.
Step 5: Calculate the factor loading and error variances using equations above.
    Regression Coefficient: $\lambda = \sigma\sqrt{\alpha}$

    Error Variance: $\theta = \sigma^2(1-\alpha)$

    Where α = reliability of the composite (r_c)
            σ = Standard deviation of the item bundle
            σ^2 = Variance of the item bundle
Step 6: These values will then be used to fix the λ and θ in the full structural model.

Congeneric Factor Analysis
This section is divided into six subsections, representing the calibration and the validation samples on emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes. Each of the subsections provides the calculations (following the above steps) for the maximised reliability method; factor score regression weights, composite reliability and congeneric factor scores for λ and θ for each of the engagement elemenets; emotional engagement capabilities, cognitive engagement capabilities and individual engagement outcomes.

Calibration sample – Emotional Engagement Capabilities
<u>Step 1</u>: Fit the Model
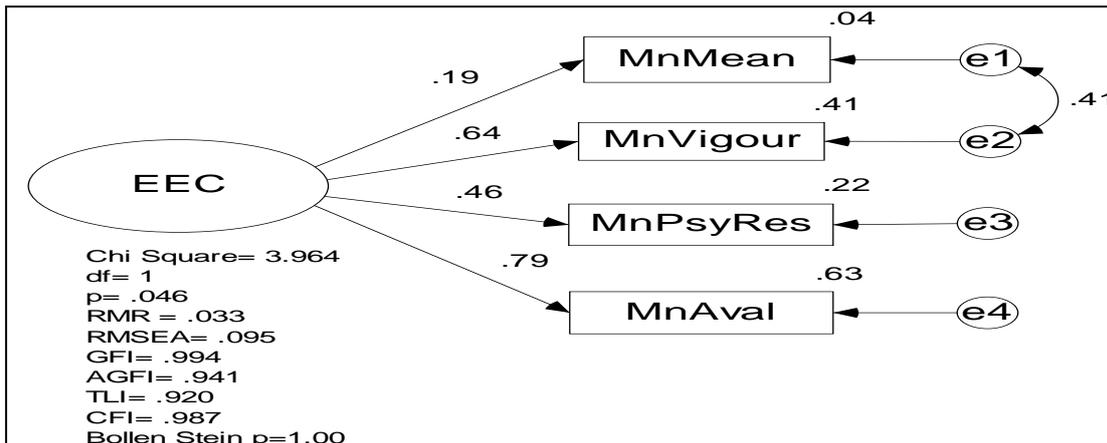
Improved Measurement Model for EEC	
χ^2 (1)= 3.964, p=0.046 BollenStein p=1.00	Acceptable Fit
χ^2/df = 3.964	Moderate Fit
GFI = 0.994	Acceptable Fit
AGFI = 0.941	Acceptable Fit
RMR = 0.033	Acceptable Fit
RMSEA = 0.095	Moderate Fit
TLI = 0.92	Acceptable Fit
CFI = 0.987	Acceptable Fit

Step 2: Compute the composite using factor score weights
   a. Sum the factor score regression weights
   b. Divide each factor score weight by the Sum (Σ)

	Factor Score	Sum (Σ) of Factor Score	Factor Score Divide by Sum (Σ)	Sum (Σ)
MnMeaningfulness	-0.052		-0.05	
MnVigour	0.313		0.301	
MnPsyRes	0.129	1.04	0.124	1
MnAvaliability	0.65		0.625	

   c. In SPSS, calculate the composite by running the syntax of running item number multiplied be factor score weight that was generated in step 2 b.

COMPUTE EEC$_{calibration}$ = MnMeaningfullness*-0.05+MnVigour*0.301+MnPsyRes*0.124+MnAvaliability*0.625

Step 3: In SPSS, find the standard deviation, variance, minimum and maximum of the composite.

Emotional Engagement Capabilities Composite

N	Valid	332
	Missing	0
Mean		5.3282
Std. Deviation		.82088
Variance		.674
Minimum		1.24
Maximum		6.85

Step 4: Calculate the reliability by;
    a. In AMOS find the implied covariance matrix and construct a matrix.

Implied Covariances

	MnAvaliability	MnPsyResources	MnVigour	MnMeaningfulness
MnAvaliability	.802	.410	.459	.129
MnPsyResources	.410	1.540	.372	.105
MnVigour	.459	.372	1.024	.419
MnMeaningfulness	.129	.105	.419	.913

    b. In AMOS find the error variances and enter on the diagonal of the theta-delta matrix

	MnAvaliability	MnPsyResources	MnVigour	MnMeaningfulness
MnAvaliability	0.296	0.00	0.00	0.00
MnPsyResources	0.00	1.209	0.00	0.00
MnVigour	0.00	0.00	0.607	0.00
MnMeaningfulness	0.00	0.00	0.00	0.880

    c. Using the recalibrated (those summed to equal 1) factor score weights to put into the WFS (Weighted Factor Scores) vector.

	Weighted Factor Scores
MnAvaliability	0.625
MnPsyResources	0.124
MnVigour	0.301
MnMeaningfulness	-0.05

    d. Run the syntax window and record the reliability.

Where;
s= implied covariance matrix (step 4 a)
td= error variance matrix (step 4 b)
WFS= weighted factor scores developed (step 2 c)

*Reliabilty coefficients.
MATRIX.
COMPUTE Relfs=MAKE(1,1,0)

compute s={0.802, 0.410, 0.459, 0.129;
      0.410, 1.54, 0.372, 0.105;
      0.459, 0.372, 1.204, 0.419;

0.129, 0.105, 0.419, 0.913}.

compute td={0.296, 0.000, 0.000, 0.000;
       0.000, 1.209, 0.000, 0.000;
       0.000, 0.000, 0.607, 0.000;
       0.000, 0.000, 0.000, 0.880}.

compute wfs={0.625,0.124,0.301,-0.05}.

compute relfs=(wfs*(s-td)*TRANSPOS(wfs))/(wfs*s*TRANSPOS(wfs)).
print relfs.
END MATRIX.

Composite Reliability = 0 .7227428756

Step 5: Calculate the factor loading and error variances using equations below.

$$\lambda = \sigma\sqrt{\alpha}$$

$$\theta = \sigma^2(1-\alpha)$$

Composite	Variance	Standard Deviation	Reliability	$\lambda = \sigma\sqrt{\alpha}$ SD*SQRT Rel	$\theta = \sigma^2(1-\alpha)$ Var * (1-Rel)
EECConger	0.673844	0.82088	.7227428756	0.697865	0.186828

Step 6: These values will then be used to fix the λ and θ in the full structural model.

263
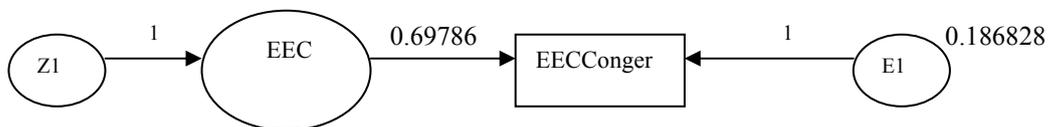
Calibration Sample – Cognitive Engagement Capabilities
Step 1: Fit the Model
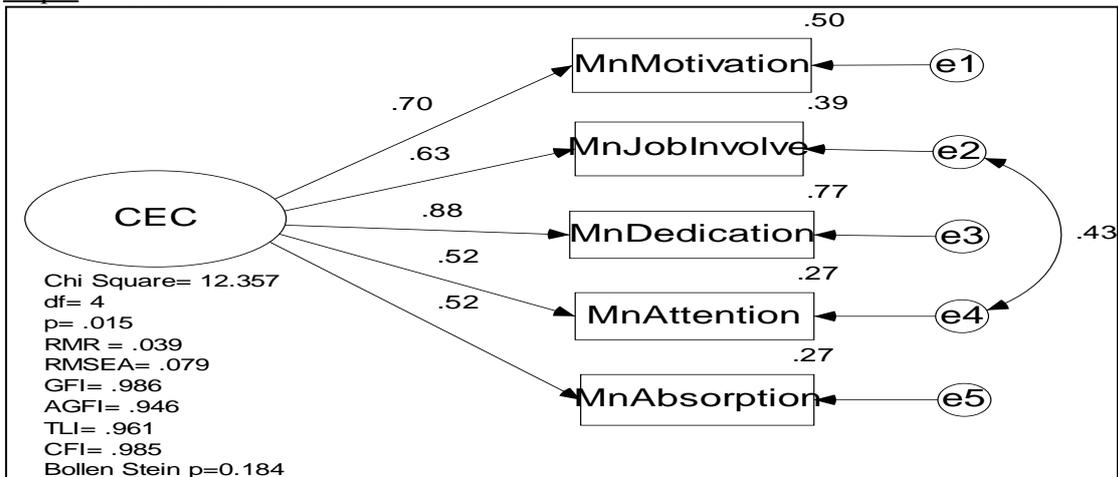
Improved Measurement Model for CEC	
χ^2 (4)= 12.357, p=0.015 Bollen Stein =0.184	Moderate Fit
χ^2/df = 3.089	Moderate Fit
GFI = 0.968	Acceptable Fit
AGFI = 0.946	Acceptable Fit
RMR = 0.039	Acceptable Fit
RMSEA = 0.079	Moderate Fit
TLI = 0.961	Acceptable Fit
CFI = 0.985	Acceptable Fit

Step 2: Compute the composite using factor score weights
1. Sum the factor score regression weights
2. Divide each factor score weight by the Sum (Σ)

	Factor Score	Sum (Σ) of Factor Score	Factor Score Divide by Sum (Σ)	Sum (Σ)
MnAbsorption	0.097		0.096	
MnAttention	0.059		0.059	
MnDedication	0.513	1.008	0.509	1
MnJobInvolve	0.105		0.104	
MnMotivation	0.234		0.232	

c. In SPSS, calculate the composite by running the syntax of running item number multiplied be factor score weight that was generated in step 2 b.

COMPUTE CEC$_{calibration}$ =
MnAbsorption*0.096+MnAttention*0.059+MnDedication*0.509+MnJobInvolve*0.104+MnMotivation*0.232

Step 3: In SPSS, find the standard deviation, variance, minimum and maximum of the composite.

Cognitive Engagement Capabilities Composite

N	Valid	332
	Missing	0
Mean		5.3489
Std. Deviation		.91402
Variance		.835
Minimum		2.07
Maximum		7.00

Step 4: Calculate the reliability by;

    e. In AMOS find the implied covariance matrix and construct a matrix.

Implied Covariances

	MnAbsorption	MnAttention	MnDedication	MnJobInvolve	MnMotivation
MnAbsorption	1.306	.299	.610	.466	.388
MnAttention	.299	.943	.513	.741	.326
MnDedication	.610	.513	1.352	.798	.665
MnJobInvolve	.466	.741	.798	1.559	.508
MnMotivation	.388	.326	.665	.508	.852

    f. In AMOS find the error variances and enter on the diagonal of the theta-delta matrix

	MnAbsorption	MnAttention	MnDedication	MnJobInvolve	MnMotivation
MnAbsorption	0.950	0.000	0.000	0.000	0.000
MnAttention	0.000	0.692	0.000	0.000	0.000
MnDedication	0.000	0.000	0.307	0.000	0.000
MnJobInvolve	0.000	0.000	0.000	0.949	0.000
MnMotivation	0.000	0.000	0.000	0.000	0.429

    g. Using the recalibrated (those summed to equal 1) factor score weights to put into the WFS (Weighted Factor Scores) vector.

	Weighted Factor Scores
MnAbsorption	0.096
MnAttention	0.059
MnDedication	0.509
MnJobInvolve	0.104
MnMotivation	0.232

    h. Run the syntax window and record the reliability.

Where;

s= implied covariance matrix (step 4 a)

td= error variance matrix (step 4 b)

WFS= weighted factor scores developed (step 2 c)

*Reliabilty coefficients.

MATRIX.

COMPUTE Relfs=MAKE(1,1,0)

compute s={1.306, 0.299, 0.610, 0.466, 0.388;

0.299, 0.943, 0.513, 0.741, 0.326;
0.610, 0.513, 1.352, 0.798, 0.665;
0.466, 0.741, 0.798, 1.559, 0.508;
0.388, 0.326, 0.665, 0.508, 0.852}.

compute td={0.950, 0.000, 0.000, 0.000, 0.000;
0.000, 0.692, 0.000, 0.000, 0.000;
0.000, 0.000, 0.307, 0.000, 0.000;
0.000, 0.000, 0.000, 0.949, 0.000;
0.000, 0.000, 0.000, 0.000, 0.429}.

compute wfs={0.096, 0.059, 0.509, 0.104, 0.232}.

compute relfs=(wfs*(s-td)*TRANSPOS(wfs))/(wfs*s*TRANSPOS(wfs)).
print relfs.
END MATRIX.

Composite Reliability = 0.8510351761

Step 5: Calculate the factor loading and error variances using equations below.

$$\lambda = \sigma\sqrt{\alpha}$$

$$\theta = \sigma^2(1-\alpha)$$

Composite	Variance	Standard Deviation	Composite Reliability	$\lambda = \sigma\sqrt{\alpha}$ SD*SQRT Rel	$\theta = \sigma^2(1-\alpha)$ Var * (1-Rel)
CECConger	0.835433	0.91402	0.8510351761	0.843198	0.12445

Step 6: These values will then be used to fix the λ and θ in the full structural model.
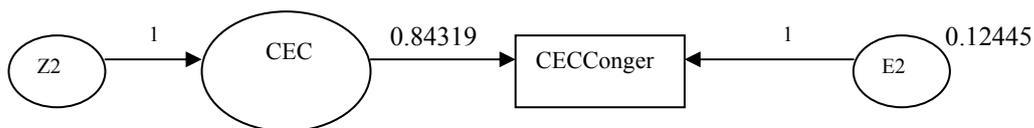
Calibration Sample – Individual Engagement Outcomes
Step 1: Fit the Model
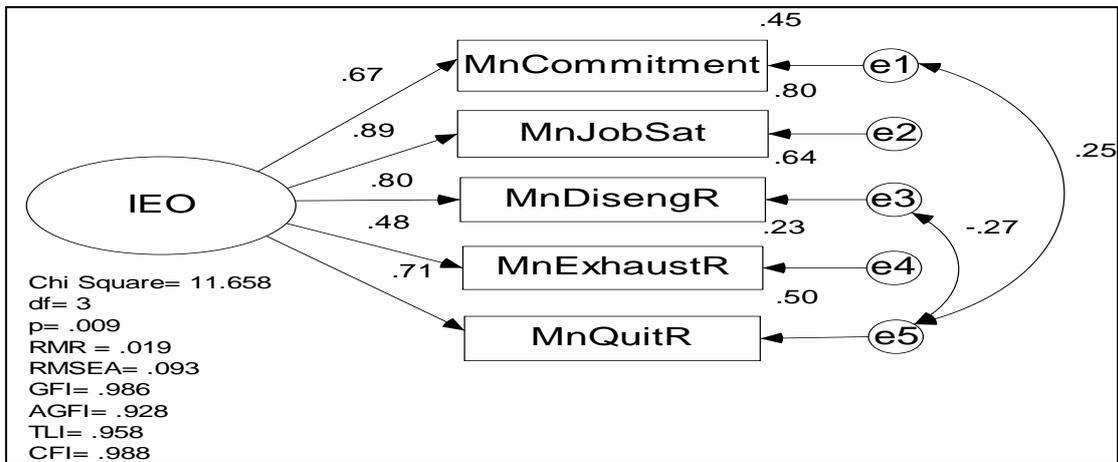
Improved Measurement Model for IEO	
χ^2 (3)= 11.658, p=0.009 Bollen Stein= 0.137	Moderate Fit
χ^2/df = 3.886	Poor Fit * adjusted with Bollen Stein
GFI = 0.986	Acceptable Fit
AGFI = 0.928	Moderate Fit
RMR = 0.019	Acceptable Fit
RMSEA = 0.093	Moderate Fit
TLI = 0.958	Moderate Fit
CFI = 0.988	Acceptable Fit

Step 2: Compute the composite using factor score weights
   a. Sum the factor score regression weights
   b. Divide each factor score weight by the Sum (Σ)

	Factor Score	Sum (Σ) of Factor Score	Factor Score Divide by Sum (Σ)	Sum (Σ)
MnQuitR	0.118		0.094	
MnExhaustR	0.105		0.084	
MnDisengR	0.556	1.254	0.443	1
MnJobSat	0.407		0.325	
MnCommitment	0.068		0.054	

   c. In SPSS, calculate the composite by running the syntax of running item number multiplied be factor score weight that was generated in step 2 b.

COMPUTE IEOconger = MnQuitR*0.094+MnExhaustR*0.084+MnDisengR*0.443
 +MnJobSat*0.325+MnCommitment*0.054

<u>Step 3:</u> In SPSS, find the standard deviation, variance, minimum and maximum of the composite.

Individual Engagement Outcomes Composite

N	Valid	332
	Missing	0
Mean		3.8107
Std. Deviation		.75500
Variance		.570
Minimum		1.19
Maximum		5.28

<u>Step 4:</u> Calculate the reliability by;
   i.   In AMOS find the implied covariance matrix and construct a matrix.

	MnQuitR	MnExhaustR	MnDisengR	MnJobSat	MnCommitment
MnQuitR	2.861	.365	.409	1.251	1.268
MnExhaustR	.365	.405	.130	.318	.252
MnDisengR	.409	.130	.289	.447	.355
MnJobSat	1.251	.318	.447	1.368	.865
MnCommitment	1.268	.252	.355	.865	1.519

   j.   In AMOS find the error variances and enter on the diagonal of the theta-delta matrix

	MnQuitR	MnExhaustR	MnDisengR	MnJobSat	MnCommitment
MnQuitR	1.427	0.000	0.000	0.000	0.000
MnExhaustR	0.000	0.313	0.000	0.000	0.000
MnDisengR	0.000	0.000	0.105	0.000	0.000
MnJobSat	0.000	0.000	0.000	0.276	0.000
MnCommitment	0.000	0.000	0.000	0.000	0.833

   k.   Using the recalibrated (those summed to equal 1) factor score weights to put into the WFS (Weighted Factor Scores) vector.

	Weighted Factor Scores
MnQuitR	0.094
MnExhaustR	0.084
MnDisengR	0.443
MnJobSat	0.325
MnCommitment	0.054

   l.   Run the syntax window and record the reliability.
Where;
s= implied covariance matrix (step 4 a)
td= error variance matrix (step 4 b)
WFS= weighted factor scores developed (step 2 c)

*Reliabilty coefficients.
MATRIX.
COMPUTE Relfs=MAKE(1,1,0)

compute s={2.861, 0.365, 0.409, 1.251, 1.268;
        0.365, 0.405, 0.130, 0.318, 0.252;

0.409, 0.130, 0.289, 0.447, 0.355;
        1.251, 0.318, 0.447, 1.368, 0.865;
        1.268, 0.252, 0.355, 0.865, 1.519}.

compute td={1.427, 0.000, 0.000, 0.000, 0.000;
        0.000, 0.313, 0.000, 0.000, 0.000;
        0.000, 0.000, 0.105, 0.000, 0.000;
        0.000, 0.000, 0.000, 0.276, 0.000;
        0.000, 0.000, 0.000, 0.000, 0.833}.

compute wfs={0.094, 0.084, 0.443, 0.325, 0.054}.

compute relfs=(wfs*(s-td)*TRANSPOS(wfs))/(wfs*s*TRANSPOS(wfs)).
print relfs.
END MATRIX.

Composite Reliability =   0.8820949522

Step 5: Calculate the factor loading and error variances using equations six and seven below.

Equation Six: $\lambda = \sigma\sqrt{\alpha}$

Equation Seven: $\theta = \sigma^2(1-\alpha)$

Composite	Variance	Standard Deviation	Composite Reliability	$\lambda = \sigma\sqrt{\alpha}$ SD*SQRT Rel	$\theta = \sigma^2(1-\alpha)$ Var * (1-Rel)
IEOconger	0.570	0.75500	0.8820949522	0.709095	0.067209

Step 6: These values will then be used to fix the λ and θ in the full structural model.

269
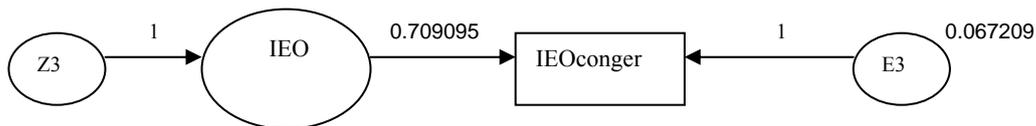
Validation Sample – Emotional Engagement Capabilities

Step 1: Fit the Model
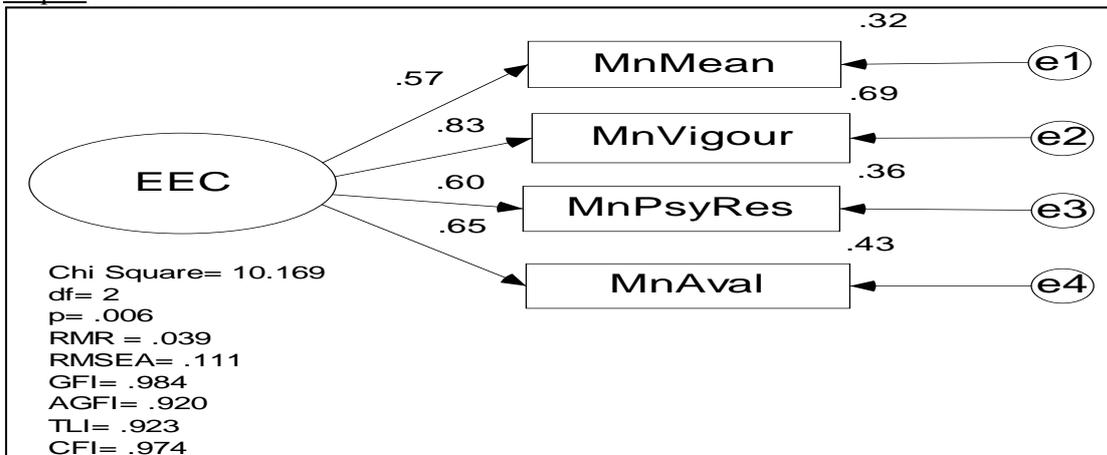
Improved Measurement Model for EEC	
χ² (2)= 10.169, p=0.006 Bollen Stein p=0.046	Poor Fit
χ²/df = 5.08	Poor Fit
GFI = 0.984	Acceptable Fit
AGFI = 0.920	Acceptable Fit
RMR = 0.039	Acceptable Fit
RMSEA = 0.111	Poor Fit
TLI = 0.923	Acceptable Fit
CFI = 0.974	Acceptable Fit

Step 2: Compute the composite using factor score weights
  a. Sum the factor score regression weights
  b. Divide each factor score weight by the Sum (Σ)

|	Factor Score	Sum (Σ) of Factor Score	Factor Score Divide by Sum (Σ)	Sum (Σ)
MnAvaliability	0.243		0.216	
MnPsyRes	0.144		0.128	
MnVigour	0.569	1.123	0.507	1
MnMeaningfullness	0.167		0.149	

c. In SPSS, calculate the composite by running the syntax of running item number multiplied be factor score weight that was generated in step 2 b.

COMPUTE EEC$_{validation}$ =
MnAvaliability*0.216+MnPsyRes*0.128+MnVigour*0.507+MnMeaningfullnes*0.149

Step 3: In SPSS, find the standard deviation, variance, minimum and maximum of the composite.

Emotional Engagement Capabilities Composite

N	Valid	332
	Missing	0
Mean		5.2214
Std. Deviation		.79812
Variance		.637
Minimum		2.64
Maximum		6.83

Step 4: Calculate the reliability by;

    a. In AMOS find the implied covariance matrix and construct a matrix.

Implied Covariances

	MnAvaliability	MnPsyResources	MnVigour	MnMeaningfulness
MnAvaliability	.873	.476	.478	.345
MnPsyResources	.476	1.693	.612	.442
MnVigour	.478	.612	.888	.443
MnMeaningfulness	.345	.442	.443	.995

    b. In AMOS find the error variances and enter on the diagonal of the theta-delta matrix

	MnAvaliability	MnPsyResources	MnVigour	MnMeaningfulness
MnAvaliability	0.501	0.00	0.00	0.00
MnPsyResources	0.00	1.083	0.00	0.00
MnVigour	0.00	0.00	0.274	0.00
MnMeaningfulness	0.00	0.00	0.00	0.674

    c. Using the recalibrated (those summed to equal 1) factor score weights to put into the WFS (Weighted Factor Scores) vector.

	Weighted Factor Scores
MnAvaliability	0.216
MnPsyResources	0.128
MnVigour	0.507
MnMeaningfulness	0.149

    d. Run the syntax window and record the reliability.

Where;
s= implied covariance matrix (step 4 a)
td= error variance matrix (step 4 b)
WFS= weighted factor scores developed (step 2 c)

*Reliabilty coefficients.
MATRIX.
COMPUTE Relfs=MAKE(1,1,0)

compute s={0.873, 0.476, 0.478, 0.345;
      0.476, 1.693, 0.612, 0.442;

271

0.478, 0.612, 0.888, 0.443;
　　　　0.345, 0.442, 0.443, 0.995}.

compute td={0.501, 0.000, 0.000, 0.000;
　　　　0.000, 1.083, 0.000, 0.000;
　　　　0.000, 0.000, 0.274, 0.000;
　　　　0.000, 0.000, 0.000, 0.674}.

compute wfs={0.216, 0.128, 0.507, 0.149}.

compute relfs=(wfs*(s-td)*TRANSPOS(wfs))/(wfs*s*TRANSPOS(wfs)).
print relfs.
END MATRIX.

Composite Reliability = 0.800847649

Step 5: Calculate the factor loading and error variances using equations below.

$$\lambda = \sigma\sqrt{\alpha}$$

$$\theta = \sigma^2(1-\alpha)$$

Composite	Variance	Standard Deviation	Reliability	$\lambda = \sigma\sqrt{\alpha}$ SD*SQRT Rel	$\theta = \sigma^2(1-\alpha)$ Var * (1-Rel)
EECConger	0.636998	0.798121	0.800847649	0.71424	0.12686

Step 6: These values will then be used to fix the λ and θ in the full structural model.
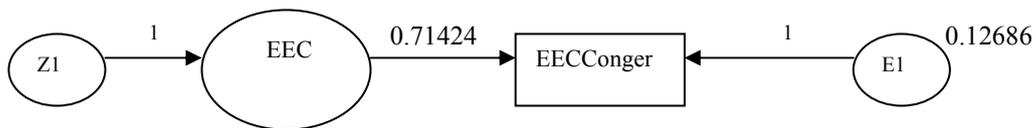
Validation Sample – Cognitive Engagement Capabilities
<u>Step 1</u>: Fit the Model
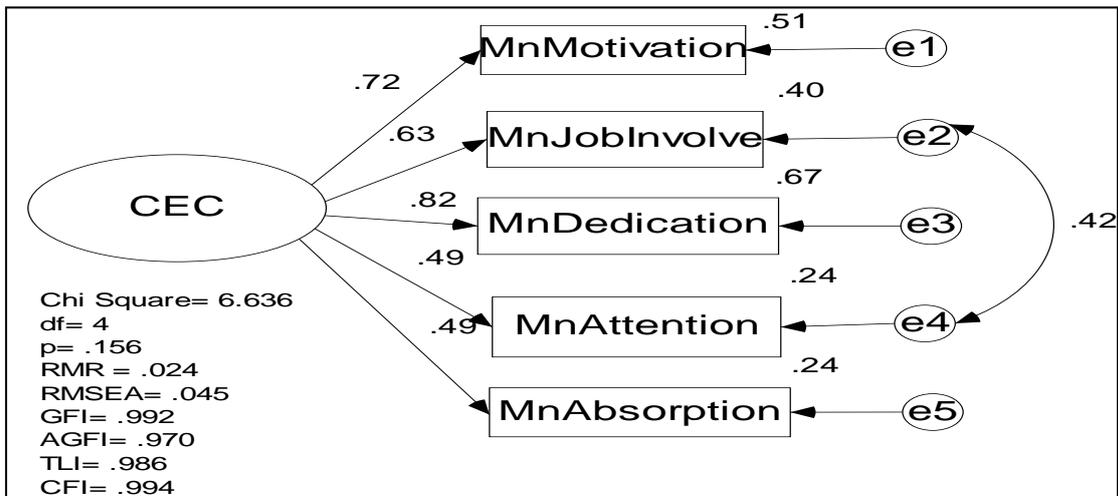
Improved Measurement Model for CEC	
χ^2 (4)= 6.636, p=0.156	Acceptable Fit
χ^2/df = 1.659	Acceptable Fit
GFI = 0.992	Acceptable Fit
AGFI = 0.970	Acceptable Fit
RMR = 0.024	Acceptable Fit
RMSEA = 0.045	Acceptable Fit
TLI = 0.986	Acceptable Fit
CFI = 0.994	Acceptable Fit

<u>Step 2:</u> Compute the composite using factor score weights
   a. Sum the factor score regression weights
   b. Divide each factor score weight by the Sum (Σ)

	Factor Score	Sum (Σ) of Factor Score	Factor Score Divide by Sum (Σ)	Sum (Σ)
MnAbsorption	0.109		0.098	
MnAttention	0.063		0.057	
MnDedication	0.464	1.115	0.416	1
MnJobInvolve	0.135		0.121	
MnMotivation	0.344		0.308	

   c. In SPSS, calculate the composite by running the syntax of running item number multiplied be factor score weight that was generated in step 2 b.

COMPUTE CEC$_{validation}$ =
MnAbsorption*0.098+MnAttention*0.057+MnDedication*0.416+MnJobInvolve*0.121+MnMotivation*0.308

<u>Step 3:</u> In SPSS, find the standard deviation, variance, minimum and maximum of the composite.

Cognitive Engagement Capabilities Composite

N	Valid	332
	Missing	0
Mean		5.4680
Std. Deviation		.80547
Variance		.649
Minimum		2.16
Maximum		6.93

<u>Step 4:</u> Calculate the reliability by;

    a.   In AMOS find the implied covariance matrix and construct a matrix.

Implied Covariances

	MnAbsorption	MnAttention	MnDedication	MnJobInvolve	MnMotivation
MnAbsorption	1.320	.268	.483	.462	.337
MnAttention	.268	.930	.407	.748	.284
MnDedication	.483	.407	1.092	.702	.512
MnJobInvolve	.462	.748	.702	1.686	.490
MnMotivation	.337	.284	.512	.490	.695

    b.   In AMOS find the error variances and enter on the diagonal of the theta-delta matrix

	MnAbsorption	MnAttention	MnDedication	MnJobInvolve	MnMotivation
MnAbsorption	1.002	0.00	0.00	0.00	0.00
MnAttention	0.00	0.704	0.00	0.00	0.00
MnDedication	0.00	0.00	0.359	0.00	0.00
MnJobInvolve	0.00	0.00	0.00	1.014	0.00
MnMotivation	0.00	0.00	0.00	0.00	0.338

    c.   Using the recalibrated (those summed to equal 1) factor score weights to put into the WFS (Weighted Factor Scores) vector.

	Weighted Factor Scores
MnAbsorption	0.098
MnAttention	0.057
MnDedication	0.416
MnJobInvolve	0.121
MnMotivation	0.308

    d.   Run the syntax window and record the reliability.

Where;
s= implied covariance matrix (step 4 a)
td= error variance matrix (step 4 b)
WFS= weighted factor scores developed (step 2 c)

*Reliabilty coefficients.
MATRIX.
COMPUTE Relfs=MAKE(1,1,0)

compute s={1.320, 0.268, 0.483, 0.462, 0.337;
      0.268, 0.930, 0.407, 0.748, 0.284;

       0.483, 0.407, 1.092, 0.702, 0.512;
       0.462, 0.748, 0.702, 1.686, 0.490;
       0.337, 0.284, 0.512, 0.490, 0.695}.

compute td={1.002, 0.000, 0.000, 0.000, 0.000;
       0.000, 0.704, 0.000, 0.000, 0.000;
       0.000, 0.000, 0.359, 0.000, 0.000;
       0.000, 0.000, 0.000, 1.014, 0.000;
       0.000, 0.000, 0.000, 0.000, 0.338}.

compute wfs={0.098, 0.057, 0.416, 0.121, 0.308}.

compute relfs=(wfs*(s-td)*TRANSPOS(wfs))/(wfs*s*TRANSPOS(wfs)).
print relfs.
END MATRIX.

Composite Reliability = 0.8130514673

Step 5: Calculate the factor loading and error variances using equations below.

$$\lambda = \sigma\sqrt{\alpha}$$

$$\theta = \sigma^2(1-\alpha)$$

Composite	Variance	Standard Deviation	Composite Reliability	$\lambda = \sigma\sqrt{\alpha}$ SD*SQRT Rel	$\theta = \sigma^2(1-\alpha)$ Var * (1-Rel)
CECConger	0.648787	0.805473	0.8130514673	0.72629	0.12129

Step 6: These values will then be used to fix the λ and θ in the full structural model.
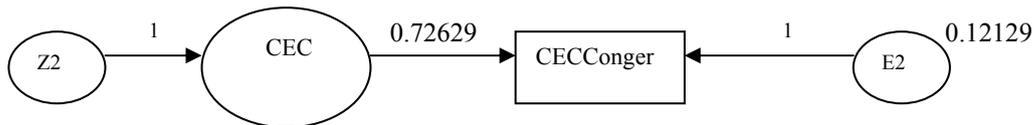
Validation Sample – Individual Engagement Outcomes

Step 1: Fit the Model
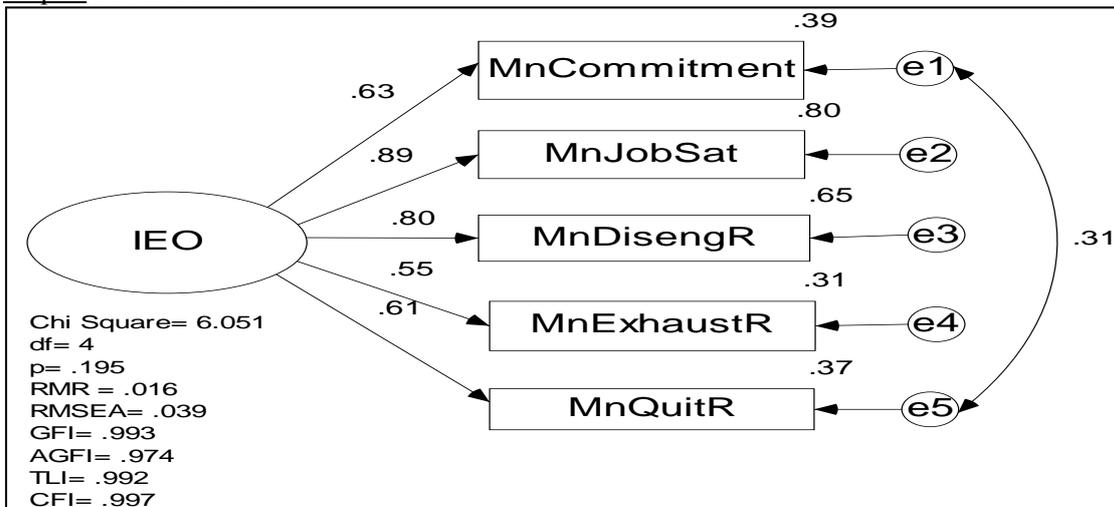
| Improved Measurement Model for IEO	
χ^2 (4)= 6.051, p=0.195	Acceptable Fit
χ^2/df = 1.513	Acceptable Fit
GFI = 0.993	Acceptable Fit
AGFI = 0.974	Acceptable Fit
RMR = 0.016	Acceptable Fit
RMSEA = 0.039	Acceptable Fit
TLI = 0.992	Acceptable Fit
CFI = 0.997	Acceptable Fit

Step 2: Compute the composite using factor score weights
   a. Sum the factor score regression weights
   b. Divide each factor score weight by the Sum (Σ)

	Factor Score	Sum (Σ) of Factor Score	Factor Score Divide by Sum (Σ)	Sum (Σ)
MnQuitR	0.054		0.041	
MnExhaustR	0.16		0.121	
MnDisengR	0.536	1.326	0.404	1
MnJobSat	0.494		0.373	
MnCommitment	0.082		0.062	

   c. In SPSS, calculate the composite by running the syntax of running item number
       multiplied be factor score weight that was generated in step 2 b.

COMPUTE IEOconger$_{Validation}$ = MnQuitR*0.041+ MnExhaustR*0.121+ MnDisengR*0.404 + MnJobSat*0.373+ MnCommitment*0.062

Step 3: In SPSS, find the standard deviation, variance, minimum and maximum of the composite.

Individual Engagement Outcomes Composite

N	Valid	332
	Missing	0
Mean		3.7958
Std. Deviation		.70870
Variance		.502
Minimum		1.66
Maximum		5.26

Step 4: Calculate the reliability by;

      a. In AMOS find the implied covariance matrix and construct a matrix.

	MnQuitR	MnExhaustR	MnDisengR	MnJobSat	MnCommitment
MnQuitR	2.669	.336	.413	.980	1.130
MnExhaustR	.336	.372	.140	.332	.255
MnDisengR	.413	.140	.266	.408	.313
MnJobSat	.980	.332	.408	1.211	.744
MnCommitment	1.130	.255	.313	.744	1.448

      b. In AMOS find the error variances and enter on the diagonal of the theta-delta matrix

	MnQuitR	MnExhaustR	MnDisengR	MnJobSat	MnCommitment
MnQuitR	1.677	0.000	0.000	0.000	0.000
MnExhaustR	0.000	0.258	0.000	0.000	0.000
MnDisengR	0.000	0.000	0.094	0.000	0.000
MnJobSat	0.000	0.000	0.000	0.243	0.000
MnCommitment	0.000	0.000	0.000	0.000	0.877

      c. Using the recalibrated (those summed to equal 1) factor score weights to put into the WFS (Weighted Factor Scores) vector.

	Weighted Factor Scores
MnQuitR	0.041
MnExhaustR	0.121
MnDisengR	0.404
MnJobSat	0.373
MnCommitment	0.062

      d. Run the syntax window and record the reliability.

Where;

s= implied covariance matrix (step 4 a)

td= error variance matrix (step 4 b)

WFS= weighted factor scores developed (step 2 c)

*Reliabilty coefficients.

MATRIX.

COMPUTE Relfs=MAKE(1,1,0)

compute s={2.669, 0.336, 0.413, 0.980, 1.130;
        0.336, 0.372, 0.140, 0.332, 0.255;

              0.413, 0.140, 0.266, 0.408, 0.313;
              0.980, 0.332, 0.408, 1.211, 0.744;
              1.130, 0.255, 0.313, 0.744, 1.448}.

compute td={1.677, 0.000, 0.000, 0.000, 0.000;
        0.000, 0.258, 0.000, 0.000, 0.000;
        0.000, 0.000, 0.094, 0.000, 0.000;
        0.000, 0.000, 0.000, 0.243, 0.000;
        0.000, 0.000, 0.000, 0.000, 0.877}.

compute wfs={0.041, 0.121, 0.404, 0.373, 0.062}.

compute relfs=(wfs*(s-td)*TRANSPOS(wfs))/(wfs*s*TRANSPOS(wfs)).
print relfs.
END MATRIX.
Composite Reliability =   0.881922364

Step 5: Calculate the factor loading and error variances using equations six and seven below.

Equation Six: $\lambda = \sigma\sqrt{\alpha}$

Equation Seven: $\theta = \sigma^2(1-\alpha)$

Composite	Variance	Standard Deviation	Composite Reliability	$\lambda = \sigma\sqrt{\alpha}$ SD*SQRT Rel	$\theta = \sigma^2(1-\alpha)$ Var * (1-Rel)
IEOconger	0.708699	0.502254	0.881922364	0.665544	0.059305

Step 6: These values will then be used to fix the λ and θ in the full structural model.
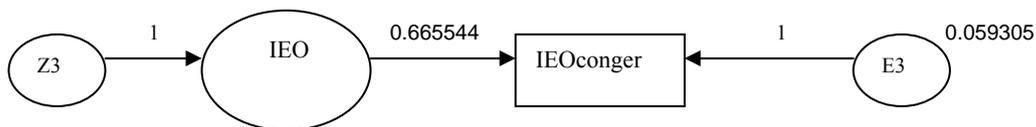
Alpha Loadings for POS and JobCh for Model Testing
The organisational aspects of POS (perceived organisational support) and JobCh (job characteristics) were tested within the model as with alpha loadings. The fixing of λ and θ within the full model using the reliability of the measure (Cronbach's Alpha α) rather than the composite reliability. This method uses the equations as used to calculate the alpha loadings in the higher order CFA. The calculations are detailed below (Table A.4.1.) for both POS and JobCh for the calibration sample and the validation sample.

Table A.4.1 – Calculation of Alpha Loadings for Full Model

Variable	Mean	S.D σ	α	σ^2	$\sqrt{\alpha}$	$1-\alpha$	$\lambda = \sigma\sqrt{\alpha}$	$\theta = \sigma^2(1-\alpha)$
POS – Calibration	3.782	1.280	0.890	1.639	0.943	0.110	1.208	0.180
JobCh- Calibration	5.150	0.901	0.704	0.811	0.839	0.296	0.756	0.240
POS – Validation	3.569	1.329	0.926	1.765	0.962	0.074	1.278	0.131
JobCh – Validation	5.060	0.991	0.745	0.981	0.863	0.255	0.855	0.250

The alpha approach was used as opposed to congeneric factor analysis for both of these variables because both job characteristics and perceived organisational support are both pre-established within the literature (Eisenberger, Fasolo & Davis-LaMastro 1990; Eisenberger et al. 1986; Hackman & Oldham 1975, 1980; Saks 2006). In addition both of the measures were used in their original intended formats.

Appendix A5: Alternative Engagement Model (Hypothesis 8)

Within this research, an alternative structural engagement model was tested to determine the directionality of POS and JobCH within the full engagement model. Hypothesis 8 stated that there will be a positive association between POS and JobCH and JobCh will impact the POS.

The research surrounding the directional relationship between the two constructs was limited. Hutchison (1997) specified that POS acts as a mediating variable between aspects of the job characteristics and various outcomes variables such as organisational commitment. With this as the starting point the calibration model used directionality from JobCh$\rightarrow$ POS. The model was established and held with this relationship (see Chapter Six, sections 6.6.1), the fit statistics are presented in Table A.5.1. The regression weight between the Job$\rightarrow$POS is β= 0.646, p=0.00.

TABLE A.5.1 Final Model (Calibration Stage) JobCh$\rightarrow$ POS

χ^2 (12)=18.131, p=0.112	Acceptable Fit
χ^2/df = 1.511	Acceptable Fit
GFI = 0.987	Acceptable Fit
AGFI = 0.96	Acceptable Fit
RMR = 0.012	Acceptable Fit
RMSEA = 0.039	Acceptable Fit
TLI = 0.978	Acceptable Fit
CFI = 0.991	Acceptable Fit

Within this calibration stage the direction of the arrow was respecified POS $\rightarrow$ JobCh. The results of the respecified model are presented below in Figure A.5.1 and the path summaries are provided in Table A.5.2 and model summary in Table A.5.3

TABLE A.5.2 – Path Summaries POS$\rightarrow$JobCH

| Hypothesis	Pathway			Beta	SE	CR	P
H4$_A$	IEO	<---	EEC	.175	.068	2.956	.003
H4$_B$	IEO	<---	CEC	.314	.085	4.260	***
H4$_c$	EEC	<---	CEC	.292	.115	2.606	.009
H6$_A$	EEC	<---	POS	.118	.098	1.292	.196
H6$_B$	CEC	<---	POS	-.209	.088	-2.400	.016
H6$_c$	IEO	<---	POS	.214	.071	3.470	***
H7$_A$	EEC	<---	JobCH	.309	.162	1.816	.069
H7$_B$	CEC	<---	JobCH	.842	.100	8.479	***
H7$_c$	IEO	<---	JobCH	.355	.121	3.223	.001
H8	JobCH	<---	POS	.636	.059	10.625	***
H10 $_A$	POS	<---	Over55	-.077	.138	-0.813	.416
H11 $_B$	JobCH	<---	HigherLect	.105	.121	1.900	.057
H12 $_B$	JobCH	<---	Go8	.144	.112	1.876	.061
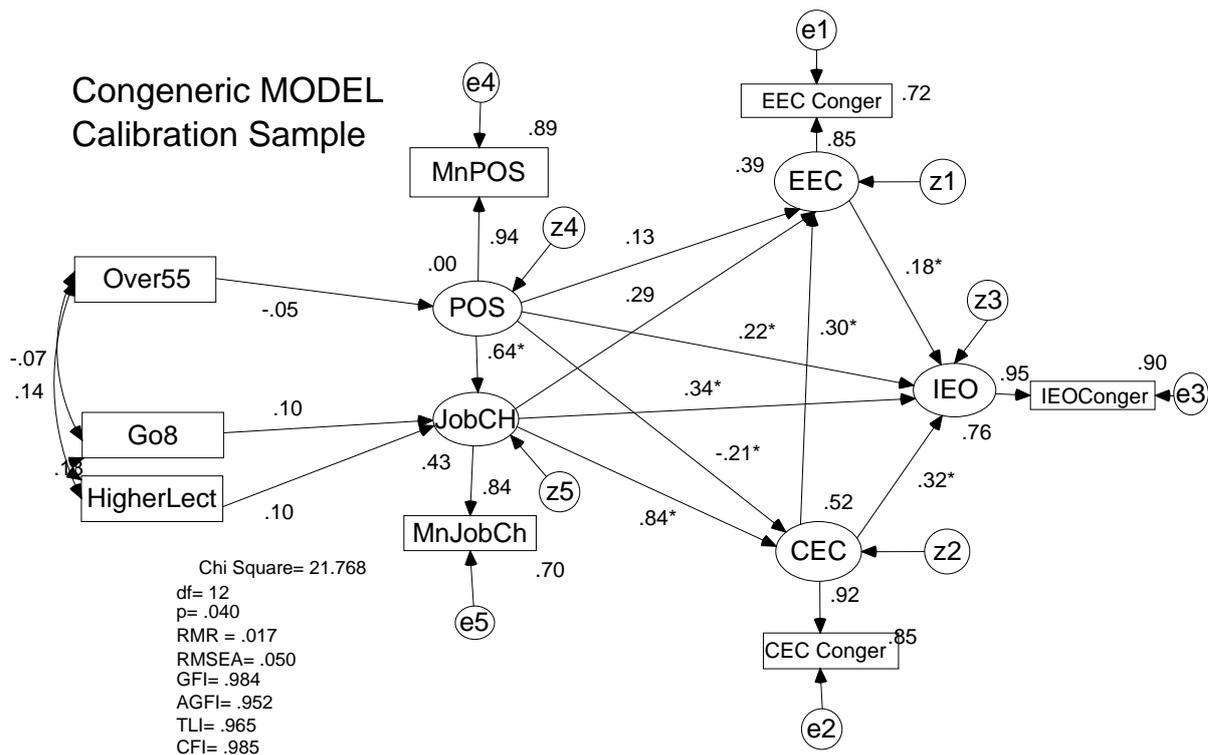
Figure A.5.1 Structural Model (Calibration Stage) Pos→ JobCh

TABLE A.5.3 Final Model (Calibration Stage) POS → JobCh

χ² (12)=21.768 p=0.04 Bollen Stein p=0.273	Acceptable Fit
χ²/df = 1.814	Acceptable Fit
GFI = 0.984	Acceptable Fit
AGFI = 0.952	Acceptable Fit
RMR = 0.017	Acceptable Fit
RMSEA = 0.05	Acceptable Fit
TLI = 0.965	Acceptable Fit
CFI = 0.985	Acceptable Fit
χ² (12)=21.768 p=0.04	Acceptable Fit

From the presented results, the model holds with both causal relationships however, the model with the directionality specified from JobCh→POS presents a stronger casual impact (β-0.646) than compared to POS→JobCh (β=0.636). Between both of the models, JobCH→POS has a greater model fit as presented in Table A.5.1 as the second model required Bollen Stein p to correct for non normality (Mardias co-efficent = 11.240). With the altered directionality between these two constructs within the model, the significance of the paths remained consistent with the original model. Given that the strength of the relationship between POS→JobCH, model fit and the maintenance of the significant paths within the model, it would suggest that the model with JobCH→POS path is the strongest. Therefore within the full final model the directionality on the structural paths are job characteristics impacting the perceptions of organisational support as consistent with Hutchinson (1997).