

WORK WELLNESS IN A GOVERNMENT ORGANISATION IN SOUTH AFRICA

Kenneth K.K. Boemah, M.A. Administration (HRM)

Thesis submitted in fulfilment of the requirements for the degree Philosophiae Doctor in
Industrial Psychology at the North-West University, Potchefstroom Campus.

Promoter: Prof. S. Rothmann

Potchefstroom

2006

REMARKS

The reader is reminded of the following:

- The references as well as the editorial style as prescribed by the *Publication Manual (5th edition)* of the American Psychological Association (APA) were followed in this thesis. This practice is in line with the policy of the Programme in Industrial Psychology at the North-West University to use APA style in all scientific documents as from January 1999.
- The thesis is submitted in the form of an introductory chapter, a conclusion and three research articles.

ACKNOWLEDGEMENTS

I wish to extend my unflinching appreciation to all those who in many diverse ways helped to bring this study to fruition.

- I wish to thank God for the divine health I enjoyed throughout this study.
- I owe a special debt of gratitude to Prof. S. Rothmann, my mentor, particularly for assisting me in analysing the data, and also for his relentless patience, tolerance and guidance throughout this study.
- I wish to thank my wife and children for their support and the several sacrifices they made to bring this work to its culmination.
- I am very thankful to the Mafikeng civil servants who willingly responded to the questionnaires.
- My heartfelt thanks to my boss, Rev. O.J. Tselapedi for the encouragement he gave me throughout this study.
- My very sincere thanks to Kwabena Fosu-Amoah who did the type setting for this study.
- I extend my grateful appreciation to the many friends who in many diverse ways stood behind me even when the going got tough.
- Thanks to my parents who unfortunately did not live to see the end of this study.
- My thanks to Elize du Plooy for editing this work.
- I acknowledge the “unsung heroes”, the University Librarians, particularly, Erika Rood, Melanie, the Secretary to Professor Rothmann, and the many others, who were always there for me.

The financial assistance of the National Research Foundation (NRF) towards this research is also acknowledged. Opinions expressed and conclusions arrived at are those of the author and are not necessarily to be attributed to the National Research Foundation.

TABLE OF CONTENTS

	Page
List of Figures	v
List of Tables	vi
Summary	vii
Opsomming	x
CHAPTER 1: INTRODUCTION	1
1.1 Background to the study	1
1.2 Research objectives	11
1.2.1 General objective	11
1.2.2 Specific objectives	11
1.3 Research method	12
1.3.1 Literature review	12
1.3.2 Research design	12
1.3.3 Participants	13
1.3.4 Measuring battery	13
1.3.5 Statistical analyses	15
1.4 Overview of chapters	17
1.5 Chapter summary	17
CHAPTER 2: RESEARCH ARTICLE 1	25
CHAPTER 3: RESEARCH ARTICLE 2	60
CHAPTER 4: RESEARCH ARTICLE 3	87

TABLE OF CONTENTS (continued)

CHAPTER 5: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1	Conclusions	121
5.2	Limitations of this research	129
5.3	Recommendations	130
5.3.1	Recommendations for the organisation	130
5.3.2	Recommendations for future research	133
	References	135

LIST OF FIGURES

Figure	Description	Page
Research Article 2		
Figure 1	Model of occupational stress, commitment, and ill-health	66
Research Article 3		
Figure 1	Structural model of work-related well-being	110

LIST OF TABLES

Table	Description	Page
Research Article 1		
Table 1	Comparison of Test-retest Reliability Scores	32
Table 2	Comparison of Alpha Coefficients of the MBI and MBI-GS	33
Table 3	Comparison of Alpha Coefficients of the UWES	34
Table 4	Characteristics of the Participants	37
Table 5	Goodness-of-Fit Statistics for the Hypothesised MBI-GS Model	41
Table 6	Goodness-of-Fit Statistics for the Hypothesised UWES Model	42
Table 7	Descriptive Statistics, and Alpha Coefficients of the MBI-GS and the UWES	42
Table 8	Manova: Differences between Burnout Levels of the Demographic Characteristics	43
Table 9	Statistical Significant Differences between Work Engagement and the Demographic Variables	44
Table 10	Principal Component Analysis	45
Research Article 2		
Table 1	Characteristics of the Participants	70
Table 2	Descriptive Statistics, Sten, and Alpha Coefficients of the ASSET	73
Table 3	Product-moment Correlation Coefficients of the ASSET Dimensions	74
Table 4	Standard Multiple Analyses for the Job Stressors and the Outcomes	75
Research Article 3		
Table 1	Characteristics of the Participants	96
Table 2	Descriptive statistics and Cronbach's Alpha Coefficients of the Measuring Instruments.	101
Table 3	Factor Analyses of the Job Demands-Resources Scale	102
Table 4	Product-moment Correlation Coefficients between the Constructs	105

SUMMARY

Topic: Work wellness in a government organisation in South Africa

Key terms: Burnout, engagement, organisational commitment, stress, strain, coping, reliability, and validity, job demands, job resources and civil service.

Various occupational stressors like the physical environment, noise, lighting, temperature, aspects of the job, role conflict, workload, lack of career path, poor relationships with peers, and lack of participation are likely to lead to various stress outcomes, namely behavioural; proneness to accidents, cognitive; inability to make sound decisions, physiological; increased blood pressure, physical and mental health, and organisational; lower productivity, and high turnover rate. These outcomes could however be influenced by moderator variables like age and gender, physiological experience and affective behaviours (type 'A' behaviour, life change, and social support). Studies have also found instances where some workers, exposed to the same unbearable work environments, did suffer from neither stress nor burnout. These findings have therefore led to the study of work engagement, which is considered the opposite of burnout.

The study of stress, burnout and work engagement has therefore become vehicles through which employees' effectiveness and efficiency can be facilitated. It has become necessary to jointly study stress with burnout and work engagement in a holistic model so as to have a better understanding of work wellness. Burnout and work engagement therefore represent the two aspects of wellness namely, the energy dimension and the identification with work dimension. Studies have identified two underlying dimensions of work wellness in which they identified activation as ranging from exhaustion to vigour, and identification as ranging from mental distance to dedication.

Thus burnout according to them is characterised by a combination of exhaustion (low activation) and mental distance (low identification), while engagement is represented by vigour (high activation) and dedication (high identification). Extreme exhaustion may render employees emotionally and physically drained which may lead them to distance themselves emotionally and cognitively from their work and clients, while an engaged worker develops high levels of energy, and derives a sense of significance, attachment and dedication to work.

However, to measure burnout, work engagement, stress, commitment and ill health requires valid and reliable instruments. In South Africa there aren't many systematic studies that have investigated stress, burnout, work engagement, commitment and ill health among civil servants. It is this dearth of well-designed studies in the area that makes this study very important.

The objectives of this study were to assess the reliability and validity of the MBI-GS, the UWES, the *ASSET*, the Job Demands-Resource Scale, Commitment and Ill Health subscales for civil servants, determine the occupational stressors that they experience and whether the biographic variables by any way increase or moderate the effects of the stressors, and to finally test a structural model of work wellness consisting of burnout, work engagement, job demands-job resources, ill health, and commitment.

The research method for each of the three articles consists of a brief literature review and an empirical study. A cross-sectional survey design was used. An accidental sample ($N = 500$) for research articles 1, 2 and 3 were targeted from the civil servants in the Mafikeng area of the North West Province of South Africa. The measuring instruments used in this study are; the Maslach Burnout Inventory-General Survey (MBI-GS), Utrecht Work Engagement Scale (UWES), Job Demands and Job Resources Scale (JDRS), Health subscales, Organizational Commitment subscales, the *ASSET* questionnaire and a biographical questionnaire.

Structural equation modelling was used to test the factor structures of the Maslach Burnout Inventory-General Survey (MBI-GS), and the Utrecht Work Engagement Scale (UWES) respectively, namely exhaustion, cynicism, cognitive weariness, and professional efficacy, and vigour, dedication and absorption. In respect of the MBI-GS, a four-factor model of burnout, consisting of exhaustion (physically drained), cynicism (distancing oneself from colleagues and clients), professional efficacy (feeling of accomplishment) and cognitive weariness (lack of focus on one's work), was found to fit the sample data best in comparison to the three-factor, two-factor and one-factor models. Thus the study established burnout as a four-dimensional construct.

In the case of the UWES a two-factor model of work engagement, consisting of vigour and dedication fitted the data best as compared to a three-factor or one-factor model. This means that the UWES is a two-dimensional construct and not a three-factor nor a one-factor

dimensional construct. The scales of the MBI-GS, UWES, and the *ASSET* subscales of work relationships, work life balance, overload, job security, control, resources/communication, aspects of the job, and the stress outcomes of organisational commitment, individual commitment, physical health and psychological (un)well-being showed acceptable internal consistencies. There existed no statistically significant differences between burnout, work engagement, the stress dimensions, commitment and ill health respectively and any of the biographical variables.

The study found that psychological (un)well-being, is a major stress outcome for the civil servants followed by physical (un)health, respectively. It was discovered that the civil servants generally have low levels of stress, and security was the lowest stressor. Employee commitment was also found to be high. Stress, due to lack of resources, predicted physical ill health and explained 21% of the variance of ill health among the sample of civil servants. Stress relating to aspects of the job and security, predicted psychological ill health and explained 31% of the variance in psychological ill health. Issues relating to control on the job and security predicted organisational and individual commitment respectively and further explained 28% and 20% of organisational commitment and individual commitment. Stress due to lack of job resources, security and aspects of the job seem to be the most important stressors.

Another objective of the study was to find out if energy and identification with work could be predicted from job demands and job resources respectively. It was found that job demands and lack of job resources lead to ill health through burnout, and job resources could lead to commitment via engagement. The implications are that employees who experience excessive workload are likely to experience burnout, which in turn leads to health related problems. Continuous availability of job resources would lead to work engagement, which in turn leads to organisational commitment, while lack of it would lead to burnout.

Recommendations for future research were accordingly made.

OPSOMMING

Onderwerp: Werkwelstand binne 'n regeringsorganisasie in Suid-Afrika

Sleutelwoorde: Uitbranding, begeestering, organisasieverbondenheid, stres, inspanning, coping, betroubaarheid, geldigheid, werkseise, werks hulpbronne en staatsdiens.

Die hedendaagse werksomgewing gaan met verskillende tipes stressors gepaard, insluitende die fisiese omgewing (bv. geraas, beligting en temperatuur), aspekte van die pos, rolkonflik, werkclading, 'n gebrek aan loopbaanroetes, swak verhoudings met medewerkers en 'n tekort aan deelname. Hierdie stressors het weer verskeie stresuitkomstes tot gevolg wat op verskillende vlakke na vore kom, insluitende die gedragsvlak, kognitiewe vlak (geneigdheid tot ongelukke), fisiologiese vlak (die onvermoë om goeie besluite te neem), fisiese en geestesgesondheid vlak (verhoogde bloeddruk) en die organisatoriese vlak (verlaagde produktiwiteit en 'n hoë personeelomset).

Bogenoemde uitkomstes kan egter deur modererende veranderlikes beïnvloed word, bv. ouderdom en geslag, fisiologiese ervaring en affektiewe gedrag (tipe A-gedrag, lewensverandering en sosiale ondersteuning). Navorsing het getoon dat daar wel sekere gevalle was waar werkers vir 'n hele aantal jare aan dieselfde onuithoudbare werksomgewing blootgestel is sonder om aan stres of uitbranding te lei. Hierdie bevindinge het tot navorsing oor werksbegeestering, wat as die teenpool van uitbranding beskou word, gelei.

Navorsing oor stres, uitbranding en werksbegeestering het 'n hulpmiddel geword waardeur werknemers se bekwaamheid en doeltreffendheid gefasiliteer kan word. Ten einde werkwelstand beter te kan begryp, het 'n holistiese benadering tot die bestudering van stres, waarvolgens uitbranding en begeestering ingesluit word, noodsaaklik geword. Uitbranding en werksbegeestering verteenwoordig dus die twee aspekte van welstand, naamlik die energiedimensie en die identifisering met werk-dimensie. Navorsing het twee onderliggende dimensies van werkwelstand geïdentifiseer, naamlik aktivering (wat wissel van uitputting tot lewenskrag) en identifisering (wat wissel van distansiëring tot toewyding). Uitbranding word dus gekenmerk deur 'n kombinasie van uitputting (lae aktivering) en distansiëring (lae identifisering), terwyl begeestering deur lewenskrag (hoë aktivering) en toewyding (hoë identifisering) gekenmerk word.

identifisering) verteenwoordig word. 'n Hoë mate van uitputting kan werknemers emosioneel en fisiek uitput, wat weer daartoe kan lei dat werknemers hulleself emosioneel en kognitief van hulle werk en kliënte distansieer. 'n Begeesterde werknemer ontwikkel egter hoë vlakke van energie en put betekenis, geneentheid en toewyding uit sy/haar werk. Om egter uitbranding, werksbegeestering, stres, verbondenheid en swak gesondheid te kan meet, is geldige en betroubare meetinstrumente nodig. Daar is tot op datum baie min sistematiese studies in Suid-Afrika onderneem met betrekking tot stres, uitbranding, werksbegeestering, verbondenheid en swak gesondheid onder staatsdiensamptenare. In die lig van die groot tekort aan goed ontwerpte studies in hierdie veld is die onderhawige studie dus baie belangrik vir die werkwelstand van staatsdiensamptenare.

Die doelwitte van hierdie studie was eerstens om die betroubaarheid en geldigheid van die MBI-GS, die UWES, die *ASSET*, die Werkseise-werkhulpbronnenskaal en die Toewyding- en Swak Gesondheidssubskale vir staatsdiensamptenare te bepaal. Die tweede doelwit was om te bepaal watter beroepstressors staatsdiensamptenare ervaar, terwyl die derde doelwit was om te bepaal of biografiese veranderlikes die gevolge van stressors verhoog of modereer. Die vierde doelwit was om 'n strukturele model van werkwelstand, bestaande uit uitbranding, werksbegeestering, werkseise-werkhulpbronne, swak gesondheid en verbondenheid te toets.

'n Kort literatuuroorsig en 'n empiriese studie is as navorsingsmetode vir Artikel 1, 2 en 3 gebruik. 'n Dwarssnit opname-ontwerp is gebruik en 'n gerieflikheidsteekproef ($N=207$) is uit staatsdiensamptenare in die Mafikengarea van die Noordwes-provinsie in Suid-Afrika getrek. Die meetinstrumente wat in hierdie studie gebruik is, sluit die volgende in: die Maslach Uitbrandingsvraelys-Algemene Opname (MBI-GS), die Utrecht Werksbegeesteringskaal (UWES), die Werkseise-werkhulpbronnenskaal (JDRS), die Gesondheidssubskale, die Organisasoriese Verbondenheidssubskale, die *ASSET* vraelys en 'n biografiese vraelys.

Strukturele vergelykingsmodellering is gebruik om die teoretiese driefaktorstrukture van die Maslach Uitbrandingsvraelys-Algemene Opname (MBI-GS), wat uitputting, sinisme, kognitiewe vermoeidheid en professionele doeltreffendheid insluit, sowel as die Utrecht Werksbegeesteringskaal (UWES), wat lewenskrag, toewyding en absorpsie insluit, te toets. Met betrekking tot die MBI-GS het die vierfaktormodel van uitbranding, bestaande uit uitputting (fisies uitgeput), sinisme (distansiering van kollegas en kliënte), professionele doeltreffendheid ('n gevoel dat jy iets bereik het) en kognitiewe vermoeidheid (gebrekkige

aandag aan 'n mens se werk), beter passing met die data getoon as die driefaktor-, tweefaktor- en eenfaktormodel. Daar is bevind dat uitbranding 'n vierdimensionele konstruk is.

In die geval van die UWES het 'n tweefaktormodel van werksbegeesting, bestaande uit lewenskrag en toewyding, beter passing met die data getoon as die tweefaktor- of eenfaktormodel. Dit beteken dat die UWES 'n tweedimensionele konstruk is; dit is nie 'n driefaktor- of eenfaktorkonstruk nie.

Die MBI-GS- en die UWES-skale, asook die ASSET subskale naamlik werksverhoudings, werk-lewecbalans, oorlading, werksekuriteit, beheer, hulpbronne/kommunikasie, fisieke gesondheid en psigologiese (on)gesondheid het almal aanvaarbare interne konsekwentheid getoon. Geen statistiese betekenisvolle verskille is tussen uitbranding, werksbegeesting, die stresdimensies, verbondenheid, en swak gesondheid en enige van die biografiese veranderlikes gevind nie.

Die studie het bevind dat psigologiese (on)gesondheid 'n belangrike bron van stres vir staatsdiensamptenare is, gevolg deur fisieke gesondheid. Die resultate het getoon dat staatsdiensamptenare oor die algemeen lae stresvlakke ervaar en dat sekuriteit die laagste stressor was. Hoë vlakke van werknemerverbondenheid is ook gevind. Stres as gevolg van 'n gebrek aan hulpbronne het fisieke ongesondheid voorspel en 21% van die variansie in ongesondheid onder die steekproef van staatsdiensamptenare verklaar. Stres as gevolg van aspekte van die pos en sekuriteit het psigologiese ongesondheid voorspel en 31% van die variansie in psigologiese ongesondheid verklaar. Kwessies aangaande beheer in die pos en sekuriteit het onderskeidelik organisatoriese verbondenheid en individuele verbondenheid voorspel en het 28% en 20% van die variansie in organisatoriese verbondenheid en individuele verbondenheid verklaar. Dit blyk dat stres as gevolg van 'n tekort aan werkhulpbronne, sekuriteit en aspekte van die pos die vernaamste stressors is.

Die laaste doelwit van die studie was om te bepaal of werkseise en werkhulpbronne onderskeidelik energie en identifisering met werk kon voorspel. Daar is bevind dat werkseise en tekort aan werkhulpbronne deur uitbranding tot swak gesondheid kan lei, en dat werkhulpbronne deur begeesting tot verbondenheid kan lei. Die implikasies is dat werknemers met 'n besonder hoë werklading ook heel moontlik uitbranding sal ervaar, wat op sy beurt weer tot gesondheidsverwante probleme kan aanleiding gee. Die deurlopende

beskikbaarheid van werkshulpbronne sal tot werksbegeestering lei, wat op sy beurt weer tot organisasieverbondenheid lei, terwyl 'n tekort daaraan tot uitbranding sal lei.

Aanbevelings vir toekomstige navorsing is ook gemaak.

CHAPTER 1

INTRODUCTION

This thesis deals with stress, burnout, engagement, organisational commitment, ill health, and a model of work wellness among civil servants of the North West Province in South Africa.

In this chapter the background to the study and the problem statement is discussed. The research objectives and the significance of the study are also set out. Following this, the research method is explained and the proposed division of chapters is presented.

1.1 BACKGROUND TO THE STUDY

The rapid changes in technology, globalisation, restructuring, tension among diverse groups of employees, the increased demand for quality service, change management and HIV/AIDS have brought tremendous pressure to bear on workers worldwide (Carrell, Elbert, Hatfield, Gobbler, Marx, & Van der Schyf, 1998). In South Africa, it is widely known that this pressure is mainly borne by the public servants since they are largely spearheading all the transformational changes, i.e. policies related to gender equity, diversity, racial representativity and many more (Fraser-Moleketi, 2002).

As is usual with many young democracies worldwide, they tend to face several challenges as mentioned above. Obviously South Africa is not an exception, and the vehicle for change has often been the public service. Therefore, towards the end of the first term of the democratic government in South Africa, several serious weaknesses in the way the state functioned became apparent. This was observed by Rev. F. Chikane in his foreword to "A planning framework for government" (The Presidency, Republic of South Africa, 2001). According to Rev. F Chikane, these weaknesses included the lack of alignment between the different planning cycles in government, weak co-ordination, both across national departments and between the different spheres of government, and the imperative of emphasising a more integrated approach to both policy formulation and implementation.

In order to correct these weaknesses as identified by Rev. F Chikane, the Forum of South African Directors-General (FOSAD) was established just before the 1999 elections. Key

structural changes included the budget cycle, which was to take account of the electoral mandates. This challenge to Directors-General - who are the heads of national and the various provincial departments - to successfully implement government priorities to ensure effective service delivery, has since brought them under pressure which could cause stress and even burnout. However, this does not only affect top management, it cascades down the entire civil service. It is now widely known that these mandates and their deadlines have been echoing in the President's State of the Nation Address since 2001. In the 2001 State of the Nation Address, the President said "...it is a time when the parties face the twin challenge of transforming the public service to improve the reach, depth, efficiency and quality of social service delivery..." (State of the Nation Address, 2001).

Furthermore, in 2004, Cabinet proposed a document entitled "Proposal and Implementation Plan for a Government-Wide Monitoring and Evaluation system" (The Presidency, Republic of South Africa, 2005). The publication, according to Rev. F. Chikane (The Presidency, Republic of South Africa, 2005) was intended for various levels of management within government, senior management, and technical, programme and project managers. Part one of the document contains the conceptual and operational framework for monitoring and evaluation as well as the implementation plan, while part two offers guidelines for the monitoring and evaluation of programmes and projects at a macro level.

This background highlights the enormous responsibility the South African government has placed on its public service, which in turn could cause high levels of stress or even burnout among public servants. Burnout, according to Schaufeli and Enzmann (1998) is characterised by exhaustion and manifests in reduced energy levels, or reduced effectiveness, emotional withdrawal from clients, and ultimately to decreased motivation or low identification with work.

Maslach (1982) describes burnout as a condition comprising three dimensions, namely feelings of emotional exhaustion, depersonalisation or cynicism, and reduced personal accomplishment. According to Maslach (1982), exhaustion is the individual stress element of burnout, which is often depicted by feelings of reduced physical and emotional resources. As a result of this, the affected worker often distances himself/herself emotionally and cognitively from his or her work. The cynicism dimension refers to an employee's negative, cynical and callous attitudes to clients. Lack of personal accomplishment forms the self-

evaluation dimension of burnout. This refers to feelings of insufficiency as described by (Schaufeli & Buunk, 1996), a lack of achievement and feelings of unproductiveness (Maslach Schaufeli, & Leiter, 2001).

Schaufeli and Enzmann (1998, p. 36) partially agree with Maslach (1982) and describe burnout as “a persistent, negative, work-related state of mind in normal individuals that is primarily characterized by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes, and behaviors at work.” Potter (1998) views burnout as a slow, almost invisible process that reduces one’s energy levels, motivation, happiness, and feelings of usefulness.

Moss (1999) defines burnout as a syndrome resulting from the cumulative effects of stress in a work-related environment. He describes the burnout phenomenon as a syndrome of mental, physical, and spiritual exhaustion characterised by the progression of loss of energy, idealism and purpose. Schaie and Willis (1996) regard burnout as a process that occurs when workers perceive a discrepancy between their work input and the output they had expected from work. Savicki (1993) and Savicki and Cooley (1987) agree that burnout is a syndrome in which workers feel emotionally fatigued, withdraw emotionally from their clients and perceive a diminution of their accomplishments at work.

Maslach (1982), however, is of the view that despite the seemingly varied definitions of burnout, there is a general agreement that burnout occurs at an individual level and that burnout is an internal psychological experience involving feelings, attitudes, motives and expectations. According to the author, there is a general agreement that burnout is a negative experience for the individual, in that it relates to problems, distress, discomfort, dysfunction, and or negative consequences, such as ill health.

It is evident from the literature that burnout is, without doubt, a serious concern at the workplace – something which affects the workforce across the globe. According to Carrell et al. (1998), the concern about burnout or work-related stress stems from the fact that burnout takes a heavy toll on both human resources and other organisational resources. Marino (1997) has remarked that work-related stress among especially managers has reached epidemic proportions. According to Cavanaugh, Boswell, Roehling, and Boudreau (2000), recent survey results seem to support this claim. They state that for example, in recent surveys of

managers, 88% reported elevated levels of stress and the majority reported feeling more pressure than they could ever remember.

Furthermore, according to Newsline (2002), burnout among managers in the United States had been on the rise. During 2001 burnout had hit such a high level that many managers quit their jobs without any idea of what they were going to do next. According to Bogg and Cooper (1995), senior UK civil servants reported significantly higher levels of job dissatisfaction and displayed more mental and physical ill health than their private sector counterparts because of stress that was inherent in factors intrinsic to the job. According to Markinor (2002), the BBC News has reported that the Work-Life Balance Trust reported that at least one in every ten British workers has suffered from serious work-related stress, and seven million workdays are lost each year in the UK because of stress-related illnesses.

In South Africa, several organisations like Eskom, the Chamber of Mines, Iscor, Nedbank and the Civil Service have introduced Employee Assistance Programmes as a direct attempt to reduce the negative effects of occupational stress (Olwage, 1993). Employee assistance personnel provide counselling to employees with acute anxiety or depression, and provide therapeutic aid for employees suffering from burnout and post-traumatic stress disorders. It has been estimated that in South Africa stress related accidents have been on the increase hence according to Olwage (1993), 2 000 people are killed annually in work-related incidents, 20 000 people are permanently disabled, 7 000 people undergo amputations, 900 people are blinded, and 7 500 people sustain brain injuries, most of which are related to occupational stress, and over the years occupational accidents have escalated to a total of 122 889 (Department of Labour, 1999), and then to 250 000 (Taljaard, 2005).

According to Carrell, Kuzmits, and Elbert (1992), the issue of job stress has also captured the attention of many human resource managers and organisational researchers in recent years. According to Lazarus and Folkman (1984), stress is an outcome of a transaction or relationship between the person and the environment, and that when the environmental stressors are perceived by an individual to be demanding, and have exceeded his or her personal resources to cope with them, the person will experience stress. The reasons for the interest in job stress according to Carrell, Kuzmits, and Elbert (1992) and Lu (1999) can be ascribed to the resultant effect of the problem on organisations. According to Lai, Chan, Ko, and Boey (2000), stress can be manifested psychologically, physically and behaviourally. The

effects include low productivity, increased absenteeism and turnover, and an assortment of medical ills including alcoholism and cardiovascular problems. In South Africa, the average cost of man-hours per staff member ranges from R25.00 to R50.00 per hour or more, depending on the level of skill of the employee (Carrell et al., 1998).

Another reason for the interest in job stress is the increasing number of stress-related workers' compensation claims (Carrell et al., 1998). According to Carrell et al. a further reason is the preservation of corporate bench strength. When individuals who have climbed the organisational hierarchy become mentally or physically impaired, have to retire early, or even die before they have made their most important contributions, it is a waste of human resources. The personal tragedy and disappointment are obvious, but the organisational cost can also be significant (Carrell et al., 1998).

The possible causes of job stress and burnout in South Africa include increased domestic and foreign competition, which has led to a substantial number of downsizings, lay-offs and merger activities, rapidly changing technology, globalisation, restructuring, tension among diverse groups of employees, and increased demands for higher quality and service (Carrell et al., 1998; Fraser-Moleketi, 2002; Kotzé, 2002). It is also believed that the additional pressures in South Africa can be ascribed to crime, violence, corruption, shortages of skilled labour and industry legislation. According to Carrell et al. (1998), organisational and institutional managers are therefore anxious to maintain a lower level of job stress and burnout. These demands therefore tend to put pressure on managers, be they corporate or public service managers.

The source of pressure and the consequent stress on the South African public service can be said to emanate from three factors, namely a) the strict compliance with the prescripts of the Public Finance Management Act (PFMA)(1999) - violation of which is tantamount to serious transgression, which in some instances could lead to a disciplinary hearing that could lead to dismissal, b) the call for service delivery, which permeates the entire public service from the Director-General through the heads of departments to the lower echelons of the departments, and c) the annual assessments through the Performance Management and Development System (PMDS) for employees at level 1 to 12, and signing of performance agreements for levels 13, 14, 15 and 16.

According to Newline (2002), organisations and institutions are currently feeling more pressure to perform than ever before. Therefore managers appointed into the senior management system (SMS) positions in the South African civil service are similarly under pressure to perform (Department of Public Service Administration, 2002). They are mandated to see to the successful implementation of government priorities, and compliance is ensured through performance agreements that each SMS member signs with the employer. A portion of the foreword to the SMS handbook states that “improved service delivery remains a fundamental priority of government. To achieve this, we need a modern, people-centred public service: a public service that accepts both the challenges and opportunities of being a primary agent of the developmental state. It is the responsibility of our senior managers to convert the policy mandates of government into effective departmental strategies, plans and programmes. It is their responsibility to ensure that resources – both material and human – are effectively used and accounted for in the pursuit of performance delivery” (Senior Management Service Handbook, 2003). Maslach (1978) concludes that stressful events lead to a strain reaction, and persistent or chronic strain may lead to exhaustion and psychological or physical distress, all of which are potential consequences of burnout.

It is in view of this background that Carrell et al. (1998) state that unless management helps workers cope in ways that go beyond the stop smoking, cardio-vascular, and fitness programmes of the 1970s and 1980s, offices, factories and stores could become stress, if not burnout, pools. They conclude that ignoring the problem of burnout will only lead to increased absenteeism, disability claims, high medical costs which might even lead to resignations and retirements which will consequently lead to recruitments and training costs. Coleman (1998) also asserts that whatever efforts are undertaken, and however much is spent on high technology equipment, nothing will improve the organisation’s efficiency and profitability more than taking care of its employees, reducing their exposure to stress, and learning how to get the best out of them. According to Coleman (1998), an organisation’s biggest asset is the people it employs.

Managers and staff undeniably play a pivotal role in any organisation or institution. Therefore, studies aimed at identifying and managing a problem such as burnout in especially the senior management of the civil service in order to help retain them in their jobs and enhance their performance in their work environments should be welcomed. This is especially relevant because of the observation of (Dubrin, 1990) that managers suffering from burnout

tend to spread it to their subordinates, thereby becoming a serious threat to their organisations. It is widely known that despite the effect of burnout on the workforce, there are still some workers who cope and find their work challenging and even satisfying, i.e. employees who are engaged (Schaufeli & Bakker, 2001). The importance of psychological health and the ability of particularly the managerial group to cope effectively with job demands, which is instrumental in the long-term sustainability of the organisation, cannot be overemphasised. Ineffective coping may result in burnout, which could impact negatively (ill health) on the managerial effectiveness and efficiency (Rothmann & Van Vuuren, 2002).

Unlike the case of burnout, the concept of work engagement does not have a long research history. The concept was developed from a perspective of positive psychology. In the past, psychological health research predominantly centred on psychological dysfunction, ill health and unwell-being, thereby ignoring the psychological health and well-being of individuals (Seligman & Csikszentmihalyi, 2000). The use of basic terms is still prejudiced and the focus is on the absence of illness rather than the presence of wellness. Thus as a paradigm shift, a new school of thought, namely “positive psychology” that recently emerged focuses on the presence of wellness, rather than the absence of illness (Seligman & Csikszentmihalyi, 2000).

Positive psychology aims at studying the strengths and virtues of human beings. Antonovsky (1979) also introduced the construct of *salutogenesis*, which proposes that the focus should be on the origins of health rather than the causes of diseases. The fundamental question is not why people get sick, but why some people stay well despite stressful situations and hardship. Salutogenesis focuses on resources, and maintains and improves the movement towards health. It is the opposite of the pathogenic concept in which the focus is on obstacles and deficits. Antonovsky (1979) described health as a continuum between the two poles of excellent and ill health, along which people constantly move upwards and downwards. Strümpfer (1995) argued that the construct of *salutogenesis* should be broadened from a focus on health only to *fortigenesis* (strength). Wissing and Van Eeden (1997) suggested a new sub-discipline of psychofortology and proposed that not only should the origin of psychological well-being be studied, but also the nature, symptoms, and ways to enhance psychological well-being. The focus on work engagement is in line with the assumptions of the positive psychology paradigm.

Maslach et al. (2001) therefore proposed a shift of focus from burnout to its opposite, namely work engagement. The implication of this is that workers' adaptation at work could also be examined in a positive way. Work engagement, according to Maslach and Leiter (1997), is characterised by energy, involvement and efficacy, which are the direct opposites of the burnout dimensions exhaustion, cynicism and lack of professional efficacy respectively. Engaged persons have a sense of energetic and effective connection with their work activities, and they see themselves as able to deal completely with the demands of their job.

Schaufeli, Salanova, González-Romá, and Bakker (2002) take a different approach and consider burnout and work engagement as opposite concepts that should be measured independently with different instruments. They define engagement as a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication and absorption. Rather than a fleeting and specific condition, engagement refers to a more relentless and persistent affective-cognitive state that is not focused on any particular object, event, individual or behaviour.

Not many studies have systematically investigated the demographic differences in burnout and work engagement among civil servants (Maslach et al., 2001). The most frequently studied demographic variables include age, gender and level of education. Some other demographic variables gleaned from the literature include salary, marital status, years at current position and location of work. It will also be of interest to consider differences in burnout and work engagement among civil servants of different cultural groups in the North West Province of South Africa.

Another impediment in assessing work burnout, work engagement and the stress levels of civil servants is the lack of validated cut-off points (Schaufeli & Dierendonck, 1995). Due to the lack of South African norm for both burnout and engagement of civil servants, it is necessary to determine norms for the levels of stress and wellness that could serve as a reference point for civil servants in South Africa.

In order to explain the relationship between occupational stressors and their outcomes, theoretical models like the Job Demands-Control Model of Karasek (Karasek, 1979) have to be looked at. The model explains that the interaction between job demands and the degree of authority to make decisions on the job (job control) are the means to explaining strain-related

outcomes. That is, jobs that combine high levels of demand with low levels of autonomy and minimum job control tend to be the most stressful (Winefield, Gillespie, Stough, Dua, & Hapuararchchi, 2002).

Siu (2002) is of the view that there are some variables that can moderate the effects of occupational stress and one of these is organisational commitment. A moderator, according to Cooper, Dewe, and O'Driscoll (2001), is a variable that affects the direction and strength of the relation between independent and dependent variables. Lee and Olshfski (2002) have linked organisational commitment to work engagement. According to Blau and Boal (1987), commitment can either be seen as a behaviour during which a person becomes committed to an organisation because it is too costly for the person to leave, or the person is committed to the organisation because of shared goals and the wish to remain a member.

Siu (2002) and Meyer, Stanley, Herscovitch, and Topolnytsky (2002) have adopted a broader view of organisational commitment by identifying three dimensions, namely affective, continuance and normative commitment. They explain affective commitment as an emotional attachment to, identification with, and involvement in the organisation. Continuance commitment is the perceived cost associated with leaving the organisation, and normative commitment reflects a perceived responsibility to remain in the organisation (Meyer et al., 2002).

Suliman and Iles (2000) have found that committed employees (compared to less committed employees) are more likely to stay with an organisation and contribute to the success of the organisation. Siu (2002) observed that organisational commitment related to most of the physical and psychological outcomes among workers, and also to the moderating effects on the stressor-health relationship. Siu (2002) is therefore of the view that the moderating effect of commitment guards workers against the negative effect of stress, because it allows them to attach direction and meaning to their work. Organisational commitment may also provide workers with stability, and a feeling of belonging or the other way round (Siu, 2002). It could be inferred that organisational commitment could play an important role in moderating the effect of occupational stress on employee health.

In order to effectively discuss work wellness, it would be important to refer to the model of well-being developed by Schaufeli and Bakker (2001). Demerouti, Bakker, Nachreiner and

Schaufeli (2000) developed the Job-Demand Resources (JD-R) model and used it to confirm that job demands are related to exhaustion, and that a lack of job resources is associated with disengagement. Schaufeli and Bakker (2004) extended the JD-R model by including work engagement, and by adding indicators for health impairment and organisational withdrawal in the Comprehensive Burnout and Work engagement (COBE) model.

The COBE model presupposes two psychological processes, namely a motivational and an energetic process. The motivational process associates job resources through work engagement with organisational outcomes, and the energetic process is linked to job demands with health problems through burnout. Therefore, according to Maslach and Jackson (1986), work overload, role conflict, and role ambiguity will lead to an increase in the frequency of burnout. Savicki and Cooley (1987) found that employees who enjoy autonomy in their work, have the opportunity to use their professional skills, and have an environment free from ambiguities will experience lower levels of burnout.

Emanating from the above, it becomes seemingly important to develop a model of work wellness for the South African civil service by integrating burnout and work engagement, and the effect of job resources and job demands on this association between burnout and work engagement. This is especially relevant due to the lack of a causal model of work wellness for the South African civil service.

It is against this backdrop that this study seeks to focus on the burnout and engagement of civil servants in South Africa. The need for valid and reliable instruments for measuring burnout and engagement therefore becomes pertinent. However, from the literature, there appears to be no valid and standardised instrument of burnout, work engagement and the *ASSET* for South African civil servants. Furthermore, due to the multicultural nature of the South African society, it becomes obvious that civil servants would be drawn from diverse cultural backgrounds. It should therefore not be assumed that results obtained in one culture could be generalised to other cultural groups (Storm & Rothmann, 2005).

The following research questions emerged from the problem statement:

- What are the construct validity and internal consistency of the MBI-GS for South African civil servants?

- What are the construct validity and internal consistency of the UWES among civil servants?
- What is the relationship between burnout and work engagement?
- What are the occupational stressors of civil servants?
- Does occupational stress predict ill health and lack of organisational commitment of civil servants?
- Will organisational commitment moderate the effects of occupational stress on ill health?
- Do the levels of burnout, engagement and occupational stress among civil servants differ with regard to their demographic characteristics?
- Is it possible to develop a structural model of work-related well-being for civil servants?

This thesis will make the following contributions to the subject of Industrial Psychology: First, it will result in a model of work-related well-being for civil servants, which includes both negative and positive aspects of work-related well-being. Second, it will provide scientific information about occupational stress, organisational commitment and ill health of public servants in South Africa. This information could be used as benchmark for future studies of the wellness of public servants. Third, a structural model which explains positive and negative aspects of work-related well-being will exist for public servants in South Africa.

1.2 RESEARCH OBJECTIVES

The following research objectives have emerged from the problem statement:

1.2.1 General objective

The general objective of this research is to assess the reliability and validity of the Maslach Burnout Inventory (MBI) and the Utrecht Work Engagement Scale (UWES), the ASSET (An Organisational Stress Screening Tool), the Job Demands-Resources Scale, Health and Commitment subscales, test the levels of stress and further test structural models of burnout and engagement, job demands, job resources, ill health and commitment of civil servants.

1.2.2 Specific objectives

The specific objectives of this study are:

- To investigate the reliability and validity of the MBI-GS for civil servants.
- To determine the reliability and validity of the UWES for civil servants.
- To determine the relationship between burnout and work engagement.
- To determine the reliability of the ASSET
- To determine the stressors among the civil servants.
- To investigate whether the levels of burnout, engagement and occupational stress among civil servants differ with regard to their demographic characteristics.
- To investigate whether occupational stressors predict ill health and organisational commitment.
- To assess whether organisational commitment moderates the effects of occupational stress on ill health of civil servants.
- To test a structural model of work-related well-being for civil servants.
- To make recommendations to manage burnout and work engagement among civil servants in South Africa.

1.3 RESEARCH METHOD

The research method for each of the three subsequent articles to be submitted for the purposes of this thesis comprises a brief literature review and an empirical study. A literature study is provided for each article.

1.3.1 Literature review

The literature review centres on prior research on burnout, work engagement, occupational stress and strain, and the measurement of these constructs. The literature review provides the conceptualisation of these constructs as well as some findings in respect of the measuring of burnout, work engagement, occupational stress and strain.

1.3.2 Research design

A survey design was used to attain the research objectives. The study is synchronic or cross-sectional, whereby the study is carried out once off (Christensen, 1980; Lor, 1990; Mouton,

1998; Rothmann, Malan, & Rothmann, 2001). Despite the criticism of Schaufeli and Enzmann (1998) with regard to the use of a cross-sectional design in research on burnout, the literature review has confirmed that it is still considered one of the most appropriate designs for the validation of the MBI and the UWES. Furthermore, cross-sectional designs can tap a broad range of variations so that relationships among variables can be discerned readily and the data gathering operations can be completed efficiently and quickly. Furthermore, over the years a variety of powerful methods have been devised for analysing cross-sectional data in order to draw out their less obvious theoretical implications (Nachmias & Nachmias, 1997; Stasoft, 2003).

These advantages adequately rationalise both past and future cross-sectional research projects (Heise, 1977). Structural equation modelling was used to deal with the problems associated with the design (Byrne, 2001). Structural equation modelling (SEM) is a statistical methodology that assumes a confirmatory (hypothesis-testing) approach rather than an exploratory approach to the analysis of data (Byrne, 2001).

1.3.3 Participants

An accidental sample ($N=500$) was targeted from Mafikeng civil servants of the North West province of South Africa. The study population comprised predominantly Africans with fewer whites and Indians and the educational level of participants ranged from grade 12 to postgraduate.

1.3.4 Measuring battery

Six measuring instruments were used in the empirical study, namely the Maslach Burnout Inventory-General Survey (MBI-GS) (Maslach, Jackson, & Leiter, 1996), the Utrecht Work Engagement Scale (UWES) (Schaufeli, Salanova, González-Romá, & Bakker, 2002), the *ASSET* (An Organisational Stress Screening Tool) (Cartwright & Cooper, 2002), and the Job Demands-Resources Scale (JDERS).

The *Maslach Burnout Inventory-General Survey* (MBI-GS) by Schaufeli et al. (1996) verifies the level of burnout in the respondents. The MBI-GS consists of three subscales, namely Exhaustion (Ex) (five items - "I feel emotionally drained from my work"), Cynicism (Cy)

(five items - "I have become more callous toward people since I took this job"), and Professional Efficacy (PE) (six items - "In my opinion, I am good at my work"). The MBI-GS provides a three-dimensional viewpoint of burnout. Cronbach's alpha scores reported by Maslach et al. (1996) ranged from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism, and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism), and 0,67 (Professional Efficacy) (Maslach et al., 1996). The items were scored on a seven-point frequency rating scale ranging from 0 (*never*) to 6 (*daily*). High scores on Exhaustion and Cynicism, and low scores on Professional Efficacy are indicative of burnout.

The *Utrecht Work Engagement Scale* (UWES), constructed by Schaufeli et al. (2002), was used to measure the engagement of research subjects. This scale consists of three subscales, namely vigour, dedication and absorption. The UWES is conceptually considered as the opposite of burnout. It is scored on a seven-point frequency rating scale, varying from 0 (*never*) to 6 (*always*) and includes items such as "Time flies when I am at work" and "My job inspires me". The alpha coefficients for the three subscales varied between 0,68 and 0,91. Based on the findings of Storm and Rothmann (2005), the MBI-GS and UWES items have been mixed and combined into a 42-item questionnaire. It is hoped that this would ensure a more valid response from subjects.

The *Cognitive Weariness Scale* (CWS) was developed by Van Horn, Taris, Schaufeli, and Schreurs (2004) to measure cognitive well-being of respondents. The scale consisted of six items, which were scored on a seven-point scale, varying from 0 (*never*) to 6 (*daily*). The scale refers to the capacity to take up new information and loss of concentration at work. Examples include "I have problems processing new information", "I have trouble concentrating" and "I make errors when I am at work." Van Horn et al. (2004) found an alpha coefficient of 0,92, while Coetzee and Rothmann (2004) reported an alpha coefficient of 0,76.

An *Organisational Stress Screening Tool* (ASSET) was used to obtain an accurate picture of how a job occupant personally evaluates specific aspects of his or her work environment. This questionnaire measures potential exposure to stress in respect of common workplace stressors, information on current levels of physical health, psychological well-being and organisational commitment. There are four components of the ASSET questionnaire. The first part, which consists of 37 items, measures the individual's perception of his or her job, and

includes questions pertaining to eight potential sources of stress. These include work-life balance, job security, overload, control, work relationship, resources and communication, pay and benefits. The second questionnaire (nine items) measures the individual's attitude towards his or her organisation. These questions relate to perceived levels of commitment to and from the organisation. The third questionnaire (19 items) concerns the individual's physical and psychological health. The fourth questionnaire (24 items) deals with information relating to factors that may affect stress. Reliability of the *ASSET* is based on the Guttman split-half coefficient. All except two factors returned coefficients in excess of 0,70, ranging from 0,60 to 0,91 (Cartwright & Cooper, 2002). Tytherleigh (2003) found the reliability of the *ASSET* with scores ranging from 0,64 to 0,94.

The *Job Demands-Resources Scale* (JD-RS) consists of two parts, namely job demands and job resources. The seven job demand items included questions such as "Do you have too much work to do", "Do you work under time pressure" and "Do you have contact with difficult staff in your work". The job resources items included questions such as "Does your supervisor inform you of how well you are doing your work", "Can you participate in decisions", and "Are you kept adequately up to date about important issues within your department".

1.3.5 Statistical analysis

The main statistical package used in this study is the SPSS program (SPSS Inc, 2003). Cronbach's alpha coefficients were used to assess the reliability and validity of the measuring instruments (Berenson & Levine, 1996; Clark & Watson, 1995; Norušis, 1994). Coefficient alpha conveys important information regarding the proportion of error variance contained in a scale. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) were also used to analyse the data. According to Minium and Clarke (1982), these descriptive statistics give the researcher a feel of the data and also provide the basic information about the results. Multiple analysis of variance (MANOVA) was used to determine the main and interaction effects of categorical variables on multiple dependent internal variables (Berenson & Levine 1996).

Principal components extraction was firstly used to estimate the number of factors, presence of outliers, the maximum portion of the variance present, and factorability of the correlation

matrices (Nachmias & Nachmias, 1997). Principal component extraction with varimax rotation was also performed on the measuring instruments. The varimax rotation method has been the most commonly used orthogonal rotation procedure. The rotation of the reference axes of the factor solution simplifies the factor structure, and helps achieve a more meaningful and interpretable solution (Nachmias & Nachmias, 1997). If factors were significantly related, a principal component analysis with a direct oblimin method was used. This method allows factors to be correlated with each other (Berenson & Levine, 1996; Nachmias & Nachmias, 1997). This method is also used to extract the factor structure where correlations above 0,30 may be found (Storm & Rothmann, 2005).

The level of statistical significance was set at $p \leq 0,05$. This, according to P.A.N.D.A (2002), is the probability that you would find the result you have (the difference in means) given that the null hypothesis is true. Effect sizes were used to decide on the significance of the findings. Pearson product-moment correlation coefficients were also used to indicate the linear relationships between the variables of interest. A cut-off point of 0,30 (medium effect) (Cohen, 1988) was set for the practical significance of the correlation coefficients.

Models were fitted to data in an attempt to understand underlying processes that have been operating. Thus, in order to be useful, they should be parsimonious, clearly understood, and appropriate to the data and fit closely (Browne & Cudeck, 1993; Byrne, 2001). Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1999) were used to test the factorial models for the MBI-GS and UWES. A major aspect in empirical research is the assessment of goodness of fit of a hypothesised model to sample data (McCallum, Brown, & Sugawara, 1996).

According to Hu and Bentler (1999), and Marsh, Balla, and Hau (1996), one of the popular ways of evaluating model fit are the fit indices that are used to supplement the χ^2 test. Examples of absolute fit indices include the Goodness of Fit Index (GFI) and the Adjusted Goodness-of-fit Index (AGFI) (Hu & Bentler, 1995, 1999). A result of 0,90 or above indicates a good model fit (Hu & Bentler, 1995). To lessen the problem of sample size, Browne and Cudeck (1993) suggested the use of Root Mean Square Error of Approximation (RMSEA) and the 90% confidence interval of the RMSEA.

A standard multiple regression analysis was conducted for the ASSET dimensions to determine the percentage of the variance in the dependent variables that is predicted by the independent variables. The multiple correlation coefficient (R) was used to determine the correlations between the independent variables and the dependent variable. The multiple correlation coefficient is one of the links that bind together the various aspects of multiple regression and analysis of variance. R is the highest possible correlation between a least squares linear composite of the independent variables and the observed dependent variable (Kerlinger & Lee, 2000). The value of R^2 was used to determine the proportion of the total variance of the dependent variable that is explained by the independent variables.

1.4 OVERVIEW OF CHAPTERS

Chapter 2 deals with burnout and work engagement among civil servants, and the construct validity and internal consistency of the MBI-GS and the UWES. This chapter also explores whether the levels of burnout and engagement among civil servants differ with regard to their demographic characteristics. Chapter 3 focuses on occupational stress, organisational commitment and ill health of the civil servants of the North West Province. Chapter 4 presents a structural model of work wellness. Discussions and recommendations follow in Chapter 5.

1.5 CHAPTER SUMMARY

This chapter introduced the background to the problem under study, outlined the research objectives and the significance of the study, delimited the area of the study, defined the relevant concepts, and discussed the research methodology. It is against this background that the material and evidence presented in the rest of this study will be discussed and evaluated.

REFERENCES

- Antonovsky, A. (1979). *Health, stress and coping: New perspectives on mental and physical well-being*. San Francisco, CA: Jossey-Bass.
- Arbuckle, J. L. (1999). *Amos 4.0*. Chicago, IL: Smallwaters.
- Bentler, P. M., & Bonnet, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*, 558–606.
- Berenson, M. L., & Levine, D. M. (1996). *Basic business statistics: Concepts and applications* (6th ed.). Englewood Cliffs, NJ: Prentice Hall.
- Blau, G. J. & Boal, K. B. (1987). Conceptualizing how job involvement and organizational commitment affect turnover and absenteeism. *Academy of Management Review*, *12*, 288–300.
- Bogg, J., & Cooper, C. (1995). Job satisfaction, mental health, and occupational stress among senior civil servants. *Human Relations*, *48*, 327–341.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.). *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.
- Byrne, B. M. (2001). *Structural equation modeling with Amos: Basic concepts, application and programming*. Mahwah, NJ: Erlbaum.
- Carrell, M. R., Elbert, N. F., Hatfield, R. D., Gobler, P. A., Marx, M., & Van der Schyf, M. (1998). *Human resources management in South Africa*. Pretoria: Prentice Hall.
- Carrell, M. R., Kuzmits, F. E., & Elbert, N. F. (1992). *Personnel human resource management* (4th ed.). New York: Macmillan.
- Cartwright, S., & Cooper, C. L. (2002). *ASSET: An organisational stress screening tool - the management guide*. Manchester, UK: RCL Ltd.
- Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among U.S. managers. *Journal of Applied Psychology*, *85*, 65–74.
- Christensen, L. B. (1980). *Experimental methodology* (2nd ed.). Boston, MA: Allyn & Bacon.
- Clark, L. A., & Watson, D. (1995). Construct validity: Basic issues in objective scale development. *Psychological Assessment*, *7*, 309–319.
- Coetzee, S. E., & Rothmann, S. E. (2004). An adapted model of burnout for employees at a higher education institution in South Africa. *South African Journal of Industrial Psychology*, *30*(3), 29–40.

- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Orlando, CA: Academic press.
- Coleman, V. (1998). *Stress management techniques: Managing people for healthy profits*. London, UK: Mercury Books.
- Cooper, C. L., Dewe, P. J., & O' Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2000). A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing*, 32, 454–464.
- Department of Labour (1999). *Workmen compensation Fund*. Pretoria: Government Printers.
- Department of Public Service and Administration (2002). *Performance management and development system for the senior management service*.
- Dubrin, A. J. (1990). *Effective business psychology* (3rd ed.). Englewood Cliffs, N.J: Prentice-Hall.
- Fraser-Moleketi, G. (2002). Revitalizing batho pele. *Review*, 1(3), 1–96.
- Heise, D. R. (1977). *Sociological methodology*. San Francisco, CA: Jossey-Bass.
- Hu, L.-T., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Eds.), *Structural equation modeling: Concepts, issues, and applications* (pp.76-99). Thousand Oaks, CA: Sage.
- Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1-55.
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285–308.
- Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Fort Worth, TX: Harcourt College.
- Kotzé, F. (2002). *Psychological burnout a big problem in South Africa*. Retrieved on April 22, 2003 from the World Wide Web: <http://www.puk.ac.za/nuus/eng/news24htm>
- Lai, G., Chan, K. B., Ko, Y. C., & Boey, K. W. (2000). Institutional context and stress appraisal: The experience of life insurance agents in Singapore. *Journal of Asian and African Studies*, 35, 209–228.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lee, S. & Olshfski, D. (2002). Burnout in psychiatric nurses: Contributions of the work environment and sense of coherence. *South African Journal of Psychology*, 30, 36–43.

- Lor, P. J. (1990). *Library science. Only study guide for BIB302-G. (Research method in library and information science)*. Pretoria, SA: University of South Africa.
- Lu, L. (1999). Work, motivation, job stress and employee's well-being. *Journal of Applied Management Studies*, 8, 61–72.
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, 1, 130–149.
- Marino, S. (1997). The stress epidemic. *Industry Week*, 246, 14.
- Markinor, (2002). *Stress*. Sunday Times Business Times, p.2.
- Marsh, H. W., Balla, J. R., & Hau, K. T. (1996). An evaluation of incremental fit indices: A clarification of mathematical and empirical properties. In G. A. Marcoulides & R. E. Schumaker (Eds.), *Advanced structural equation modeling: Issues and techniques* (pp. 315–353). Mahwah, NJ: Erlbaum.
- Maslach, C. (1982). Understanding burnout. In W.S. Paine (Eds.), *Job stress and burnout*. London, UK: Sage.
- Maslach, C., & Jackson, S. E. (1986). *The Maslach Burnout Inventory: Manual* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *The Maslach Burnout Inventory* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Maslach, C., & Leiter, M. P. (1997). *The truth about burnout*. San Francisco, CA: Jossey-Bass.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61, 20–52.
- Minium, E. W., & Clarke, R. B. (1982). *Elements of statistical reasoning*. New York: John Wiley.
- Moss, V. A. (1999). Burnout: Symptoms, causes, prevention. *AORN Journal*, 5(5), 22–25.
- Mouton, J. (1998). *Understanding social research*. Pretoria, SA: Van Schaik.
- Nachmias, C. F., & Nachmias, D. (1997). *Research methods in the social sciences* (5th ed.). London, UK: Arnold.
- Newsline, (2002). *Many managers leaving posts due to burnout*. Retrieved 10 September 2005, from the World Wide Web [http:// www.nytimes.com](http://www.nytimes.com).

- Norušis, M. J. (1994). *SPSS professional statistics 6.1*. Chicago, IL: SPSS
- Olwagen, J. (1993). IPM symposium on post traumatic stress held on 24th August. Retrieved on October 9, 2002, from the World Wide Web: <http://memberss.freemail.absa.co.za>
- P.A.N.D.A (2002). *Basics of statistical analysis*. Retrieved April 22 2003 from the World Wide Web: <http://www.tulane.edu/panda2/>
- Potter, B. (1998). *Symptoms of burnout*. Retrieved on October 9, 2002 from the World Wide Web: [File://A/symptoms of job burnout.htm](File://A/symptoms%20of%20job%20burnout.htm).
- Rothmann, S., Malan, A. M., & Rothmann, J. C. (2001, August). *Sense of coherence, coping and burnout in a corporate pharmacy group*. Paper presented at the 7th Annual PsySSA Conference in Johannesburg.
- Rothmann, S., & Jansen van Vuuren, J. A. (2002). *Sense of coherence, self-efficacy, locus of control, coping and burnout of senior managers in a manufacturing industry*. Paper presented at the 1st South African Burnout Conference, Potchefstroom.
- Savicki, V., & Cooley, E. J. (1987). The relationship of work environment and client contact to burnout in mental health professionals. *Journal of Counseling and Development*, 1, 249–252.
- Savicki, V. (1993). Clarification of child and youth care identity through an analysis of work environment and burnout. *Child and Youth Care Forum*, 22, 441–457.
- Schaie, W. K. & Willis, S. L. (1996). *Adult development and ageing*. 4th ed. NY: Harper Collins.
- Schaufeli, W. B., & Bakker, A. B. (2001). Work and well-being: Towards a positive approach in occupational health psychology. *Gedrag & Organisatie*, 14, 229–253.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multiple-sample study. *Journal of Organizational Behaviour*, 25, 1–23.
- Schaufeli, W. B., & Buunk, B. P. (1996). Professional burnout. In M. J. Schabraq, J. A. M. Winnubst & C. L. Cooper (Eds.), *Handbook of work and health psychology* (pp. 311-346). Chichester: Wiley.
- Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: Critical analysis*. London, UK: Taylor & Francis.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The Measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3, 71–92.

- Schaufeli, W. B., & Van Dierendonck, D. (1995). A cautionary note about the cross-national and clinical validity of cut-off points for the Maslach Burnout Inventory. *Psychological Reports, 76*, 1083–1090.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An Introduction. *American Psychologist, 55*, 5–14.
- Senior Management Service Handbook (2003). *Chapter 1–9*. Pretoria: Government Printer.
- Siu, O. L. (2002). Occupational stressors and well-being among Chinese employees: the role of organizational commitment. *Applied Psychology: An International Review, 51*, 527–544.
- SSPS Inc. (2003). SPSS 12.0 for windows. Chicago, IL: Author.
- Statsoft (2003). *Principal components and factor analysis*. Retrieved August 10, 2003 from the World Wide Web: <http://www.statsoft.com/textbook/st/acan.html>
- State of the Nation Address of the President of South Africa, Thabo Mbeki, Joint Sitting of Parliament 9 February 2001. Cape Town: Parliamentary hanzard/Government online, www.gov.za.
- Storm, K., & Rothmann, S. (2005). *Burnout and work engagement among South African Police Service*. Manuscript submitted for publication.
- Strümpfer, D. J. W. (1995). The origins of health and strength: From “salutogenesis” to “fortigenesis”. *South African Journal of Psychology, 25*, 81–89.
- Suliman, A. M., & Iles, P. A. (2000). The multi-dimensional nature of organizational commitment in a non-western context. *Journal of Management Development, 19*, 17–82.
- Taljaard, L. (2005). A wake-up call. *People Dynamics, 10–11*.
- The Presidency Republic of South Africa (2001). *A planning framework for government: medium-term strategic framework*. Pretoria, South Africa: Government Printer.
- The Presidency Republic of South Africa (2005). *Proposal and implementation plan for government-wide monitoring and evaluation system: A publication for programme managers*. Pretoria, South Africa: Government Printer.
- The Public Finance Management Act (1999). *Act 1 of 1999 as amended by Act 29 of 1999*. Pretoria, South Africa: National Treasury.
- Tytherleigh, M. V. (2003). What employers may learn from English Higher education institutions: A fortigenic approach to occupational stress. *South African Journal of Industrial Psychology, 29*(4), 101–106.

- Van Horn, J. E., Taris, T. W., Schaufeli, W. B., & Schreurs, P. J. G. (2004). A multidimensional approach to measuring teacher well-being. *Journal of Occupational and Organizational Psychology*, 77, 365-375.
- Winefield, A. H., Gillespie, N., Stough, C., Dua, J., & Hapuararchchi, J. (2002). *Occupational stress in Australian universities: A national survey*. Melbourne: National Tertiary Education Union.
- Wissing, M. P., & Van Eeden, C. (1997 September). *Psychological well-being: A fortigenic conceptualization and empirical clarification*. Paper presented at Annual Congress of the Psychological Society of South Africa, Durban, South Africa.

CHAPTER 2

RESEARCH ARTICLE 1

BURNOUT AND WORK ENGAGEMENT OF CIVIL SERVANTS IN THE NORTH WEST PROVINCE

ABSTRACT

The objectives of this study were to validate the Maslach Burnout Inventory-General Survey (MBI-GS) and the Utrecht Work Engagement Scale (UWES) for civil servants in the North West Province, and to investigate the relationship between burnout and work engagement, and various demographic variables. A cross-sectional survey design was employed. An accidental sample ($N=207$) were drawn from civil servants in the Mafikeng area. The MBI-GS and UWES were administered alongside a biographical questionnaire. Structural equation modelling confirmed a four-factor model of burnout consisting of exhaustion, cynicism, professional efficacy and cognitive weariness, and a two-factor model of work engagement, consisting of vigour and dedication with highly acceptable alpha coefficients. The study found no statistically significant relationship between burnout and work engagement and any of the demographic variables.

OPSOMMING

Die doelwitte van hierdie studie was om die Maslach Uitbrandingsvraelys – Algemene Opname (MBI-GS) en die Utrecht Werkbegeesteringskaal (UWES) vir staatsdiensamptenare in die Noordwes-provinsie te valideer, en om die verhouding tussen uitbranding en werkbegeesting en verskillende demografiese veranderlikes te ondersoek. 'n Dwarssnit opname-ontwerp is gebruik en 'n gerieflikheidssteekproef ($N=207$) is van staatsdiensamptenare in die Mafikengebied getrek. Die MBI-GS en UWES is saam met 'n biografiese vraelys afgeneem. Strukturele vergelykingsmodellering het 'n vierfaktormodel van uitbranding, bestaande uit Uitputting, Sinisme, Professionele Doeltreffendheid en Kognitiewe Vermoeidheid bevestig. Verder is 'n tweefaktormodel van werkbegeesting, bestaande uit Energie en Toewyding met hoogs aanvaarbare alfakoëffisiënte ook bevestig. Die studie het bevind dat daar geen statisties betekenisvolle verhouding tussen uitbranding en werkbegeesting en enige van die demografiese veranderlikes gevind kon word nie.

The new political and economic dispensation that has been sweeping across South Africa since 1994 has brought with it several challenges that institutions and organisations have to deal with. These challenges include restructuring, change management, tension among diverse work groups, the demand for gender equity, racial representativity, good governance, accelerated economic growth, quality service delivery and international demands like the compliance with the prescripts of the African Peer Review Mechanism (APRM) and the realisation of the Millennium Development Goals (MDGs). Institutions, including the public service, will have to implement several changes in order to continue along the path of competitiveness, effectiveness and survival (Carrell, Elbert, N. F., Hatfield, R. D., Gobbler, P. A., Marx, M., & Van der Schyf, M., 1998; Fraser-Moleketi, 2002; Kotzé, 2002; United Nations Report, 2005).

Programmes that are intended to address these challenges in a developing country like South Africa are championed mainly by the public service. This assertion is confirmed by the Public Service Commission Report (2006) which argues that at the heart of the capacity required for the fulfilment of these challenges is the need to ensure that the public service, as the primary delivery vehicle of the state, is astute in rising to the development needs of the country. As a consequence, tremendous pressure is brought to bear on the public service, which could lead to stress (Reynolds & Shapiro, 1991) and eventually burnout. These challenges manifest at both national and provincial levels. The various premiers of the provinces of South Africa also put heavy demands on their respective provincial departments. For example, in the North West province, the premier spells out her mandates in the State of the Province Address, and all the government departments see to the implementation thereof.

In the North West Province, at one of the departmental functions, the head of the Department of Public Works stated that “in the past financial year, we all agreed to accelerate service delivery by improving on how we perform. We started by realigning our job descriptions, and then drafted individual work plans. Subsequently, we are now busy with annual assessments... we cannot stay in one place, the journey is real and urgent. There is only one way that is to fold our sleeves and work hard” (Sebego, 2005). This sentiment of service delivery is echoed throughout the North West provincial departments. All members of the public service are therefore under pressure to perform, which in turn leads to possible stress or burnout due to either a lack of job resources, unreasonable timeframes or even a lack of capacity. This in turn results in ramifications like lateness, absenteeism, and high staff

turnover (Kilfedder, Power, & Wells, 2001), a sense of reduced effectiveness, decreased motivation and dysfunctional attitudes and behaviours (Maslach, 2001; Maslach, Jackson, & Leiter, 1996; Maslach, Schaufeli, & Leiter, 2001).

It has become necessary to employ a holistic model in the study of burnout and work engagement in order to gain a better understanding of work wellness. Schaufeli and Bakker (2004) are of the view that burnout and engagement could be combined in a model of well-being since burnout and work engagement represent the two aspects of wellness. Schaufeli and Bakker (2004) have identified two underlying dimensions of work wellness in which they identified activation as ranging from exhaustion to vigour, and identification as ranging from mental distance to dedication. Thus burnout according to them is characterised by a combination of exhaustion (low activation) and mental distance (low identification), while engagement is represented by vigour (high activation) and dedication (high identification). Extreme exhaustion may lead workers to distance themselves emotionally and cognitively from their work and clients, while an engaged worker develops high levels of energy, and derives a sense of significance, identification and attachment to work.

The relationship that people have with their work and the resultant difficulties when that relationship goes awry, have long been recognised as a significant phenomenon of the modern age. The use of the term burnout for this occurrence came into general use around the 1970s in the United States, especially among people working in the human services. What is noteworthy is that both practitioners and social commentators identified the importance of burnout as a social problem long before it became a focus of systematic study by researchers (Maslach, Schaufeli, & Leiter, 2001).

A milestone event in the study of burnout that addressed the issue of a lack of consistent definition was the development of the Maslach Burnout Inventory (MBI) (Maslach, 2001). This standardised measure, based on extensive empirical research, has provided researchers with the methodological specificity necessary for studying the syndrome of burnout (Kee, Johnson, & Hunt, 2000). Although Maslach and Jackson (1986, p.1) defined burnout as "A syndrome of emotional exhaustion and cynicism that occurs among individuals who do people work of some kind" like teachers, nurses, physicians and social workers, it has now become clear to researchers that employees in almost any occupation can develop burnout

(Schaufeli & Enzmann, 1998). This finding clearly supports the view that burnout is also a problem that occurs “outside” the human services (Maslach & Leiter, 1997).

Maslach and Jackson (1981), Maslach (1982) and Maslach and Leiter (1997) view burnout as a syndrome consisting of three dimensions, namely emotional exhaustion, depersonalisation, and reduced personal accomplishment. Emotional exhaustion refers to feelings of being depleted of one’s emotional resources (Maslach & Leiter, 1997). Thus, when employees suffering from burnout are asked how they feel, their typical responses are that they feel drained and physically fatigued (Rothmann, Malan, & Rothmann, 2001). This dimension is considered as the basic individual stress component of the syndrome (Golembiewski & Boss, 1992). Depersonalisation refers to negative, cynical or excessively detached responses to other people at work. This represents the interpersonal component of burnout. Reduced personal accomplishment connotes a feeling of a decline in one’s competence and productivity, and a lowered sense of self-efficacy. This represents the self-evaluation component of burnout (Maslach, 1998).

According to Golembiewski and Boss (1992), the earlier three dimensions of burnout were not deducted theoretically, but resulted from labelling exploratory factor-analysed items initially collected to reflect the range of experiences associated with the burnout phenomenon. Depersonalisation was therefore replaced by cynicism in the new dimension, which still refers to the same cluster of symptoms (Golembiewski & Boss, 1992). According to Golembiewski and Boss (1992), the new label of this dimension of the syndrome poses new problems. Garden (1987) argued that this dimension of the syndrome of burnout encompasses several distinct attitudes, including distancing, hostility, rejection, and unconcern. Therefore, it follows that the discriminant validity of this component of burnout relative to the current conceptualisations of employee or work cynicism is yet to be established (Garden, 1987). The third dimension, reduced personal accomplishment, was relabelled reduced professional efficacy or ineffectiveness, depicted to include the self-assessments of low self-efficacy, lack of accomplishment, lack of productivity, and incompetence (Leiter & Maslach, 2001).

According to Golembiewski and Boss (1992), each of these concepts represents well-known distinct fields of research in the behavioural sciences. The authors of the MBI should therefore clarify on which theoretical grounds these concepts should be grouped together in

the same cluster of symptoms. They share the view that such a diverse cluster of symptoms related to effectiveness may obscure the meaning of the third dimension underlying the MBI. Law, Wang, and Mobley (1998) contend that it appears that the second and third dimensions of the MBI, as currently defined, represent several multifaceted constructs, each having different implications with regard to the exhaustion component of burnout as suggested by the authors of the MBI. A construct is said to be multidimensional when it refers to several distinct but related dimensions that are viewed as a single theoretical construct (Law, Wang, & Mobley, 1998).

It needs to be said, however, that there is a paucity of evidence that there are specific antecedent variables or mechanisms leading to all three clusters of symptoms included in the syndrome of burnout (Collins, 1999; Lee & Ashforth, 1996; Schaufeli & Enzmann, 1998). Despite the above criticisms levelled at the MBI, it can still be argued that the MBI still stands out as the best instrument for measuring burnout (Golembiewski & Boss, 1992). Maslach (2001) has stated clearly that the MBI is now recognised as the measure of choice for burnout, and researchers around the world use it in various translations.

Using Maslach (1982) and Maslach and Jackson's (1986) model of burnout, (emotional exhaustion, depersonalisation and low personal accomplishment), and summarising the contributions of Schaufeli, Leiter, Maslach and Jackson (1996), Moss (1989), Cullen (1995), Strickland (1998) and Savicki (1993), the following operational definitions of burnout dimensions can be arrived at: Exhaustion can be operationalised as emotional and physical fatigue and depletion (Maslach & Jackson, 1986), profound depression (Moss, 1989), loss of energy, powerlessness, short attention span, feeling of disgust, or boredom, and emotional withdrawal (Cullen, 1995).

Cynicism could be identified by poor interpersonal relationships with both clients and colleagues (Maslach & Jackson, 1986; Schaufeli et al., 1996), overreaction, intense hostility, poor communication with co-workers, drop in tolerance level, dehumanisation (Potter, 1998), that is regarding clients as objects, being very inflexible, strong adherence to rules and regulations (Cullen, 1995), being very angry and cruel (Cullen, 1995; Potter, 1998) or apathetic, lethargic (Cullen, 1995), rage, feeling withdrawn and isolated from others (Cullen, 1995; Potter, 1998), and cynicism about oneself and others (Cullen, 1995; Maslach & Jackson, 1986; Strickland, 1998; Schaufeli et al., 1996). Reduced professional efficacy could

be operationalised as a feeling of being unable to meet clients' needs and to satisfy essential ingredients of job performance (Maslach & Jackson, 1986), working harder, yet accomplishing less (Strickland, 1998; Butland, 1996), intense dissatisfaction with the job, an increase in absenteeism, and being mentally and emotionally absent from work (Potter, 1998). According to Maslach (2001), all forms of the MBI provide scores on the three dimensions of burnout, and these scores can be correlated with other information obtained from respondents, such as job characteristics, job performance, personality or attitude measure, health information and demographic variables. Maslach (2001) argues that the multidimensional model underlying the MBI has made it particularly appropriate for theory-driven research.

According to Seligman and Csikszentmihalyi (2000), the turn of the millennium has seen a strong scientific interest in a new paradigm, referred to as "positive psychology". In accordance with this viewpoint, the burnout concept has now been complemented and broadened by its positive opposite, namely work engagement (Maslach, Schaufeli, & Leiter, 2001). It has therefore become obvious that the emphasis should not be exclusively on the negative aspects of civil servants' work; it is essential to study their adaptation at work in a positive way, by for instance studying the concept of work engagement.

The concept engagement has been defined as an energetic state in which an employee is dedicated to excellent performance at work, and is certain of his or her effectiveness (Schutte, Toppinen, Kalimo, & Schaufeli, 2000). Schaufeli, Martinez, Pinto, Salanova, and Bakker, (2002), in a similar vein, defined work engagement as a positive, fulfilling and work-related state of mind that is characterised by vigour, dedication and absorption. According to Maslach, Schaufeli, and Leiter (2001), an engaged person moves from the state of vigour through dedication to absorption.

Vigour is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, not becoming easily fatigued, and persistence even in the face of difficulties. Dedication is characterised by deriving a sense of significance from one's work, by feeling enthusiastic and proud about one's job, and by feeling inspired and challenged by it. Absorption is characterised by being totally and happily immersed in one's work, and having difficulties detaching oneself from it. When absorbed in one's work, time passes quickly and one forgets everything else that is around (Maslach et al., 2001).

Maslach et al. (2001) have distinguished work engagement from other organisational psychological constructs like organisational commitment, job involvement, and job satisfaction. Work engagement, especially absorption, could be likened to what Csikszentmihalyi (1988, 1990) called “optimal experience or flow”, which is characterised by focused attention, a clear mind and body unison, effortless concentration, complete control, loss of self-consciousness, distortion of time and intrinsic enjoyment.

The concept work engagement can be equally relevant to civil servants as it can be to the healthcare service and police personnel, because engaged civil servants will tend to perceive stressful and difficult environments as challenging and satisfying, hence solvable (Schaufeli & Bakker, 2001).

In South Africa, several studies have been undertaken in respect of the validity, reliability and the establishments of norms for the MBI-GS and the UWES in different occupations (Coetzee & Rothmann, 2004; Coetzer & Rothmann, 2006; Naudé 2003; Rothmann & Van Vuuren, 2002) However, the lack of empirical studies that scientifically address burnout and work engagement among civil servants in South Africa has become a matter of concern. According to Rothmann (2002), serious limitations of burnout research in South Africa include poorly designed studies, a lack of sophisticated statistical analyses and poorly controlled studies (Rothmann, 2002). This study is therefore one of the few studies that attempts to address these problems.

The measurement of burnout

The scales have been established as reliable and valid in a number of studies (Maslach, Jackson, & Leiter, 1996). The test and retest reliability scores of Maslach, Jackson and Leiter (1996), Lahore and Mason (1989), and Kee, Johnson, and Hunt (2000) are summarised in Table 1. In this table, test and retest reliability scores range from 0,54 to 0,90, and 0,71 to 0,82 respectively. Furthermore, other investigators have established the criterion validity of the MBI by comparing burnout scores to ratings of personal experience (Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1996) and other job dimensions. In addition, some researchers have found evidence of construct validity for the MBI (Cox, Kuk, & Leiter, 1993; Maslach et al., 1996). Several other studies including those of Micklevitz (2001), Jackson and Rothmann (2005), Goddard, Creed, and Patton (2001), Uetz (1993), Büssing and Perrar

(1992); Green, Walkey, and Taylor (1991), Schaufeli and Janczur, (1994) have all established the validity and reliability of the MBI as a measuring battery.

Table 1

Comparison of Test Retest Reliability Scores

Item	Maslach et al. (96)		Lahore & Mason (1989)		Kee et al. (2000)	
	Test	Retest	Test	Retest	Test	Retest
Emotional Exhaustion	0,71	0,90	0,71	0,90	0,90	0,60
Depersonalisation	0,60	0,82	0,60	0,82	0,79	0,80
Personal Accomplishment	0,54	0,90	0,54	0,90	0,71	0,82

Schaufeli, Leiter, Maslach, and Jackson (1996) developed the Maslach Burnout Inventory-General Survey (MBI-GS), an adapted version of the original MBI for use in fields other than the human services. Storm and Rothmann (2003) evaluated the MBI-GS for use in the South African Police Service (SAPS), and confirmed that it is a reliable and valid measuring instrument for burnout. However, Item 13 of the cynicism subscale “I just want to do my work and not be bothered” has been found to lower the internal consistency of the subscale. As a result, Schutte, Toppinen, Kalimo, and Schaufeli (2000) have suggested this item be removed. In their confirmatory factor analyses, Rothmann and Jansen van Vuuren (2002), and Storm and Rothmann (2005) have consistently found low loadings on Item 13 and have therefore recommended that it be removed. Schaufeli, Leiter, and Kalimo (1995) and Leiter and Schaufeli (1996) have also found that this item had the lowest factor loadings of the three subscales.

The alpha coefficients found in studies utilising the MBI and MBI-GS in South Africa are shown in Table 2. Item 13 was removed in each case. Taking the results in Table 2 into account, it is expected that the MBI-GS will be sufficiently internally consistent. A few of the scores are, however, below the acceptable norm of 0,70 (Nunnally & Bernstein, 1995).

Table 2

Comparison of Alpha Coefficients of the MBI and MBI-GS

Authors	Exhaustion	Cynicism	Professional Efficacy
Buitendach & Van Zyl (2004)	0,85	0,70	0,86
Campbell & Rothmann (2005)	0,85	0,72	0,68
Coetzer & Rothmann (2006)	0,86	0,80	0,76
Coetzee & Rothmann, S. (2004)	0,85	0,70	0,66
Jackson & Rothmann (2005)	0,79	0,74	0,73
Kruger et al. (2002)	0,89	0,72	0,69
Pienaar & Sieberhagen (2005)	0,79	0,73	0,76
Rothmann (2004)	0,80	0,84	0,84
Rothmann & Malan (2003)	0,89	0,76	0,85
Rothmann & Van Vuuren (2002)	0,79	0,84	0,84
Rothmann et al. (2003)	0,89	0,72	0,69
Storm & Rothmann (2003)	0,88	0,79	0,78

Little research seems to be available on the internal and external validity of the MBI-GS (Taris, Schreurs, & Schaufeli, 1999). Confirmatory factor analysis done by Schutte et al. (2000) revealed that the three-factor model was clearly superior to alternative one-factor and two-factor models. Schaufeli, Salanova, González-Romá, and Bakker (2002) confirmed these findings. Leiter and Schaufeli (1996) employed confirmatory factor analysis using linear structural equation modelling and also confirmed a three-factor structure. Similar results were obtained by Taris et al. (1999). However, Salanova and Schaufeli (2000) found a four-factor model of burnout where the Efficacy subscale split into two factors that were labelled “goal attainment and self confidence”. The three dimensions of the MBI-GS are interrelated; Cynicism is highly related to Exhaustion ($0,44 < r < 0,61$), and also strongly related to Professional Efficacy ($-0,38 < r < -0,57$) (Schaufeli et al., 1996).

Considering the above, it appears that burnout can be measured validly across a range of different occupations, despite the differences between human service occupations and non-contactual professions. According to Taris et al. (1999), the strong resemblance between the two versions of the MBI ensures maximum comparability and generalisability of results obtained for one occupational group to another. Byrne (2001) and Jackson and Rothmann

(2005) found significant differences between the burnout levels and their respective demographic variables.

The Utrecht Work Engagement Scale (UWES)

The UWES was developed by Schaufeli et al. (2002) and they have reported acceptable internal consistency for the UWES. This instrument measures three dimensions of work engagement, namely Vigour, Dedication and Absorption. Schaufeli, Bakker, Hoogduin, Schaap, and Kladler (2001) have also confirmed the factorial validity of the UWES through their confirmatory factor-analytical studies. A summary of studies that have shown that all the three subscales of the UWES are generally sufficiently internally consistent according to the guidelines of 0,70 (Nunnally & Bernstein, 1994), are presented in Table 3. Naudé and Rothmann (2004) had two factors labelled Vigour/Dedication (Factor 1) and Absorption (Factor 2) as indicated by the scores in Table 3.

Table 3

Comparison of Alpha Coefficients of the UWES

Authors	Vigour	Dedication	Absorption
Schaufeli, Salanova, et al. (2002)	0,68	0,91	0,73
Storm & Rothmann (2003b)	0,78	0,89	0,78
Naudé & Rothmann (2004)	0,87	-	0,61
Schaufeli, Martinez, et al. (2002)	0,68	0,91	0,73
Schaufeli, Martinez, et al. (2002)	0,65-0,79	0,77-0,85	0,65-0,73
Coetzer & Rothmann (2006)	0,80	0,87	0,69
Naudé (2003)	0,70	0,83	79
Buitendach & Van Zyl (2004)	0,81	0,90	0,63
Pienaar & Sieberhagen, (2005)	0,77	0,85	0,60
Jackson, Rothmann, & Van de Vijver (2006)	0,70	0,81	-

Despite these studies, it is still evident from the literature that no studies have yet standardised the UWES for civil servants in South Africa, and furthermore, that no information is available on its reliability and validity in the domain of the civil service. This brings about certain difficulties and limitations, including the assessment of the levels of engagement of civil

servants, comparing the levels of engagement among the various demographic groups and placing the research in context. Since no South African studies have been found that have established the internal consistency and construct validity of both the MBI-GS and the UWES for civil servants, this study therefore becomes relevant.

It is clear from the literature that several studies have established the three-factor structure of both the MBI-GS and the UWES (Table 2 and Table 3) and have also established that they are internally consistent. Jackson, Rothmann, and Van de Vijver (2006) have established a relatively strong correlation ($r=0,48$) between burnout and engagement.

According to Maslach, Jackson, and Leiter (1996), burnout can be explained by certain biographical variables such as age, length of service and gender. Studies like that of Byrne (1993), Maslach and Jackson (1986) and Jackson and Rothmann (2005) have observed statistically significant differences between burnout and some demographic variables. Schaufeli and Enzmann (1998) found that women tend to score higher on emotional exhaustion while men score higher on depersonalisation. The research hypotheses for this study can thus be formulated as follows:

- H¹: Burnout and work engagement as measured by the MBI-GS and the UWES are three-dimensional constructs, and the MBI-GS and the UWES show high internal consistency for each of the subscales.
- H²: Burnout is negatively correlated with engagement.
- H³: There is a statistically significant difference between burnout and work engagement and the various demographic variables.

METHOD

Research design

A synchronic design was used in the present study whereby the data was collected once off (Lor, 1990; Mouton, 1998; Rothmann, Malan, & Rothmann, 2001). Despite the criticism of (Schaufeli & Enzmann, 1998) with regard to the use of a cross-sectional design in burnout, the literature review (Jackson & Rothmann, 2005; Maslach, 2001; Rothmann, 2002) has

confirmed that it is still considered as one of the most appropriate designs for the validation of the MBI and the UWES.

Participants

A study population of ($N=500$) civil servants from Mafikeng in the North West Province was targeted through accidental sampling. Of the 340 questionnaires returned, only 207 were usable. The sample of the study, as it is presented in Table 4, comprised predominantly blacks (94,4 %) with a gender composition of females (52,5%) and males (46,5%). 48,3% of the participants were married and 34,3% were single.

The majority of the participants (51,0%) seemed to be satisfied with their current relationship, be it married, single or otherwise. In terms of age, the majority were between 41-57 (33,5%). With regard to the educational level, the following distribution was found: grade 12 certificate (31,0%), 3-year degree (33,5%), honours degree (25,6%), master's and doctoral degrees (9,9%). It is also worthwhile mentioning that 37,9% of the participants never had any promotion during the past five years, while 45,2% had only one promotion during the same period. A sizeable majority (93,2%) are permanently employed, while 48,1% of the participants always take their annual leave compared to 40,8% who sometimes use their annual leave, and 11,2% who never take their annual leave. In the area of lifestyle, only 9,7% of the participants find time to relax, and 8,9% do manage an "ideal" exercise. The discrepancy in some of the scores, as shown in Table 4, is due to missing values.

Table 4

Characteristics of the Participants

Item	Category	Frequency	Percentage
Gender	Male	94	46,5
	Female	108	53,5
Marital Status	Single	70	34,3
	Engaged	10	4,9
	Married	100	48,3
	Divorced	24	11,6
Race	Blacks	186	90,4
	Whites	19	9,3
	Indians	2	0,3
Age	>34	67	33,5
	>40	66	33,0
	>57	67	33,5
Tenure	Permanent	192	93,2
	Temporary	9	4,4
	Fixed term	5	2,4
Years in current position	0 – 1	58	28,4
	1,1 – 4	80	39,3
	4,1 – 10	59	28,9
	10,1 – 16	7	3,5
Educational level	Grade 12	63	31,0
	3-year degree	68	33,5
	Postgraduate	72	35,5

Procedure

Permission to conduct the study was obtained from the North West Provincial Public Service Commission. The questionnaires were then handed to the Employee Assistant Unit in the office of the Premier who distributed the questionnaires to their respective unit managers in the various departments. The completed questionnaires were again handed back to these

respective unit managers who then returned them to the Employee Assistant Programme Director in the office of the Premier. According to Welman and Kruger (1994), such a procedure would ensure a higher questionnaire return rate.

Measuring battery

The following measuring instruments were used in this study:

The *Maslach Burnout Inventory-General Survey* (MBI-GS). This was used to measure Exhaustion (five items), Cynicism (five items), and Professional Efficacy (six items). The responses were scored on a seven-point scale, varying from 0 (*never occurred*) to 6 (*occurred daily*). High scores on Exhaustion and Cynicism are suggestive of burnout, whereas low scores on Professional efficacy indicate burnout. Leiter and Schaufeli (1996) and Schaufeli, Van Diederendonck, and Van Gorp (1996) found internal consistencies ranging from 0,73 (Cynicism) to 0,91 (Exhaustion). Test re-test reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy) in respect of the study by Schaufeli et al. (1996). The 13 South African studies that used the MBI-GS, as presented in Table 2, had acceptable alpha coefficient ranging from 0,68 (Professional Efficacy) to 0,89 (Exhaustion), and all of them but Jackson, Rothmann, and Van der Vijver, (2006) supported the three-factor structure of the MBI-GS. Item 13 in respect of all these South African studies were removed.

The *Cognitive Weariness Scale* (CWS) was developed by Van Horn, Taris, Schaufeli, and Schreurs (2004) to measure cognitive well-being of respondents. The scale consisted of six items, which were scored on a seven-point scale, varying from 0 (*never*) to 6 (*daily*). The scale refers to the capacity to take up new information and loss of concentration at work. Examples include “I have problems processing new information”, “I have trouble concentrating” and “I make errors when I am at work.” Van Horn, Taris, Schaufeli, and Schreurs (2004) found an alpha coefficient of 0,92, while Coetzee and Rothmann (2004) reported an alpha coefficient of 0,76.

The *Utrecht Work Engagement Scale* (UWES) was used to measure work engagement of the respondents. The Utrecht Work Engagement Scale was constructed by Schaufeli et al. (2002) to measure the work engagement of individuals. This scale comprises 21 items and measures three dimensions, namely vigour, dedication and absorption. The UWES is conceptually

considered as the opposite of burnout. Responses were scored on a seven-point frequency rating scale, varying from 0 (*never*) to 6 (*always*) and includes items like “Time flies when I am at work” and “My job inspires me”. The alpha coefficients for the three subscales varied between 0,68 and 0,91. Based on the findings of Storm and Rothmann (2005), the 43 items of the MBI-GS and UWES were mixed and combined into a single questionnaire, hoping that this would ensure a more valid response from subjects.

A biographical questionnaire was used to solicit information on the demographic characteristics of the research subjects. Information gathered included name, gender, age, educational qualification, salary, position, number of years with the department, number of years at current position, frequency of promotion, type and amount of support, marital status, race and lifestyle.

Statistical analysis

The main statistical package used in this study was the SPSS program (SPSS Inc., 2003). Cronbach’s alpha coefficients were used to assess the reliability and validity of the measuring instruments (Berenson & Levine, 1996; Clark & Watson, 1995; Norušis, 1994). Coefficient alpha conveys important information regarding the proportion of error variance contained in a scale. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) were also used to analyse the data.

Structural equation modelling (SEM) methods as implemented by Amos (Arbuckle, 1997) were used to test the factorial model for the BMI-GS and the UWES, using the likelihood method. Confirmatory factor analysis was used in this study to test specific hypotheses regarding the number of factors, factor loadings, and factor intercorrelations (Bertram, 2002; Statistical Services, 1999).

Principal component analysis with an oblique rotation was used to determine whether the obtained factors were significantly correlated. This method allows factors to be correlated with each other (Bertram, 2002; Statistical Services, 1999). The rotation of the reference axes of the factor solution simplifies the factor structure, and helps achieve a more meaningful and interpretable solution (Statistical Services, 1999; StatSoft, 2003). This method allows factors to be correlated with each other (Bertram, 2002; Statistical Services, 1999). This method was

used to extract the factor structure where correlations higher than 0,30 were found (Storm & Rothmann, 2005).

The level of statistical significance was set at $p \leq 0,01$. Effect sizes were used to decide on the significance of the findings. Pearson product-moment correlation coefficients were used to indicate the linear relationships between the variables of interest. A cut-off point of 0,30 (medium effect) (Cohen, 1988) was set for the practical significance of the correlation coefficients.

Multivariate analysis of variance (MANOVA) was used to establish the significance of differences in the burnout and work engagement dimensions with the various demographic variables. Wilks' Lambda was also used to test the significance of the effects.

RESULTS

Structural equation modelling (SEM) methods (Arbuckle, 1997) were used to test the factorial models for the MBI-GS and the UWES. Firstly, an overview of model fit was done for both instruments by looking at their overall χ^2 values, and their degrees of freedom as shown in Tables 5 and 6 respectively. Global assessments of model fit were based on several goodness-of-fit statistics (GFI, NFI, TLI, CFI and RMSEA).

Hypothesised model

The following hypothesised models of an adapted version of the MBI-GS were firstly tested for the goodness-of-fit with the sample data:

- Model 1: A one-factor model consisting of 22 items, namely 16 items of the MBI-GS, and six items of Cognitive Weariness.
- Model 2: A three-factor model consisting of 21 items, namely five items (Exhaustion), five items (Cynicism), and six items (Professional Efficacy).
- Model 3: A four-factor model consisting of 21 items, namely five items (Exhaustion), five items (Cynicism), six items (Professional Efficacy) and five items (Cognitive Weariness).

The results of the structural equation analyses of the above models are presented in Table 5. Statistically significant χ^2 values of 659,909 ($df=189$; $p < 0,01$) for the sample showed poor overall fit of the one-factor model to the data. Furthermore, from a practical point of view, Model 1 is not acceptable. The GFI, AGFI, TLI, NFI, TLI and CFI values were lower than 0,90 and the RMSEA value higher than 0,08. According to Browne and Cudeck (1993) the RMSEA point estimate should be 0,05 or less, and the upper limit of the confidence interval should not exceed 0,08. This is indicative that the hypothesised model could not be confirmed in respect of Model 1, the one-factor structure.

Model 2, as shown in Table 5, reveals that this model fits the data slightly better than Model 1. The statistically significant χ^2 values of 426,727 ($df = 184$; $p < 0,01$) for the sample data could not be considered a good fit of the model to the data, since GFI, CFI, NFI, CFI values were all less than 0,90 and the RMSEA value was exactly 0,08 as can be seen in Table 5.

Model 3, the four-factor model in Table 5, has remarkably improved indices as compared to the two earlier models, the one-factor and the three-factor structures. The statistically significant χ^2 values of 295,00 ($df = 162$; $p < 0,00$) are better than the earlier two models. The χ^2/df of 1,82 is below 2, and the (CFI, TLI) values of 0,92 and 0,90 are acceptable because they are within the critical value 0,90 (Hoyle, 1995). There were two correlated values, namely 14 with 15 and 3 with 22.

Table 5

Goodness-of-Fit Statistics for the Hypothesised MBI-GS Model

Model	χ^2	χ^2/df	GFI	AGFI	NFI	TLI	CFI	RMSEA
Model 1	659,91	3,50	0,70	0,64	0,65	0,68	0,72	0,11
Model 2	426,73	2,32	0,84	0,79	0,77	0,83	0,85	0,08
Model 3	295,00	1,82	0,87	0,84	0,83	0,90	0,92	0,06

The three-factor model of the UWES, Model 1 in Table 6, was tested empirically for goodness-of-fit with the sample data. The three-factor model of the UWES did not produce goodness-of-fit with the sample data since the GFI, AGFI, NFI, TLI and CFI indices were all below 0,90 and the RMSEA score well above 0,08. A one-factor model (Model 2) was

similarly tested but that also displayed a poor fit as is evident in the table. A two-factor model (Model 3) was then tested, and it displayed comparatively better indices than the two previous models, the three-factor and the one-factor. This is shown in Table 6. The RMSEA score is, however, a little above 0,08. The following items were correlated: 1 with 2 and 7 with 17.

Table 6
Goodness-of-Fit Statistics for the Hypothesised (UWES) Models

Model	χ^2	χ^2/df	GFI	AGFI	NFI	TLI	CFI	RMSEA
Model 1	177,49	4,03	0,86	0,80	0,84	0,85	0,88	0,12
Model 2	138,98	3,31	0,89	0,83	0,88	0,88	0,91	0,11
Model 3	117,87	2,88	0,90	0,85	0,90	0,90	0,93	0,09

The scores of the descriptive statistics and the alpha coefficients of the four factors of the MBI-GS and the two factors of the UWES are presented in Table 7.

Table 7
Descriptive Statistics and Alpha Coefficients of the MBI-GS and the UWES

Item	Mean	SD	Skewness	Kurtosis	α
MBI-GS					
Exhaustion	10,62	6,40	0,66	0,34	0,70
Cynicism	7,24	5,87	0,90	0,26	0,74
Professional Efficacy	27,69	7,24	-1,16	0,74	0,85
Cognitive Weariness	8,13	6,09	0,79	0,49	0,77
UWES					
Vigour	25,00	7,51	-0,76	0,11	0,78
Dedication	22,27	6,88	-0,96	0,13	0,84

In respect of the MBI-GS, the skewness scores are all acceptable, except for the professional efficacy score. The Cronbach's alpha coefficients of the MBI-GS in Table 7 are acceptable

since they conform to guideline of $\alpha > 0,70$ by Nunnally and Bernstein (1994). The above scores therefore suggest that the MBI-GS has acceptable levels of internal consistency. The results thus support the second part of hypothesis (H¹) that the MBI-GS shows a high level of internal consistency. The UWES scores are normally distributed because the skewness scores are acceptable, and the Cronbach's alpha coefficients are acceptable because they agree with the guideline $\alpha > 0,70$ (Nunnally & Bernstein, 1994). These scores confirm previous studies (studies in Table 3) that the UWES has acceptable levels of internal consistency, and go to support the second part of hypothesis (H¹) that the UWES displays a high level of consistency.

Multivariate analysis of variance (MANOVA) was used to investigate the relationship between burnout, and the various biographical characteristics like age, marital status and educational level. According to Tabachnick and Fidell (2001), MANOVA tests determine whether mean differences among groups on a combination of dependent variables are likely to have occurred by chance. The differences between the demographic characteristics were analysed for statistical significance with Wilks' Lambda statistics. The results are shown in Table 8. Following the analyses of the Wilks' Lambda values, it became evident that there are no statistically significant differences ($p < 0,01$) between burnout and the various demographic characteristics as shown in Table 8.

Table 8

MANOVA: Differences between Burnout Levels of the Demographic Characteristics

Item	Value	<i>F</i>	<i>df</i>	<i>p</i>
Age	0,97	0,52	8,00	0,84
Marital Status	0,94	0,97	12,00	0,47
Educational level	0,97	0,68	8,00	0,71
Years in current occupation	0,89	1,77	12,00	0,05
Years in current position	0,93	1,13	12,00	0,34
Overtime	0,93	1,21	12,00	0,27
Promoted	0,95	1,03	8,00	0,45

MANOVA were then performed to determine the relationship between work engagement and the various biographical variables like age, gender, education, marital status, years in current occupation and years in current position. The relationship between engagement and the respective demographic variables was analysed for statistical significance with Wilks' Lambda statistics. The results of the Wilks' Lambda analyses are shown in Table 9. The scores demonstrate clearly that there are no statistically significant differences ($p < 0,01$) between work engagement and the various demographic variables.

Table 9
Differences between Work Engagement of Demographic Groups

Item	Value	F	df	p
Age	0,98	1,02	4,00	0,39
Gender	0,99	0,48	2,00	0,62
Educational level	0,98	1,09	4,00	0,36
Marital status	0,96	1,51	6,00	0,17
Years in current occupation	0,94	2,08	6,00	0,05
Years in current position	0,97	1,19	6,00	0,31

Principal Component Analysis (PCA) with direct oblimin rotation was conducted on the dimensions of burnout and work engagement. The results, as presented in Table 10, showed that Component 1 loads better on Professional Efficacy (with a loading of 0,91), Vigour (0,95) and Dedication (0,88). These are the variables that can be used to explain the variability of work engagement. Component 2 loads better on Exhaustion (0,94), Cynicism (0,78) and Cognitive Weariness (0,78). This means that these variables explain the dynamics in burnout. The two correlated ($r = -0,56$) factors (burnout and work engagement) were extracted and jointly explained 79,13% of the variance. These statistics are shown in Table 10.

Table 10

Principal Component Analysis

Item	Component	
	1	2
Exhaustion	0,12	0,94
Cynicism	-0,12	0,78
Professional Efficacy	0,91	-0,02
Cognitive Weariness	-0,11	0,78
Vigour	0,95	0,03
Dedication	0,88	-0,05

DISCUSSION

The first objective of this study was to investigate the psychometric qualities of the three-factor models of the MBI-GS and the UWES for civil servants of Mafikeng in the North West Province of South Africa, and to examine the relationship between the subscales of burnout and work engagement and the biographical variables such as age, marital status, educational level and years in current position.

The results showed that the MBI-GS and the UWES had four and two-factor structures respectively. The burnout and work engagement dimensions showed acceptable alpha coefficient scores with generally acceptable skewness scores and hence they have normal distribution. The study found no statistically significant differences between the burnout and work engagement dimensions and any of the demographic variables. The principal component analysis (PCA) done on the burnout and the work engagement scales registered very high factor loadings, and burnout and engagement showed a strong negative correlation.

The results obtained using structural equation modelling revealed findings contrary to previous studies (Coetzer & Rothmann, 2006; Leiter & Schaufeli, 1996; Maslach, 1982; Maslach & Jackson, 1981; Maslach & Leiter, 1997; Schaufeli et al., 2002; Storm & Rothmann, 2003a,b) that have been done across different samples, occupational groups and countries, stating that the MBI-GS is a four-dimensional construct. The constructs are

exhaustion, cynicism, professional efficacy and cognitive weariness. The four-factor model in this study, tested through a structural equation modelling analysis, fitted better to the sample data than the one-factor and the three-factor models. The two correlated items (3 with 22 and 14 with 15) assisted in obtaining a good fit. The four items (subscales) further displayed acceptable internal consistencies (Table 7). Salanova and Schaufeli (2000) also confirmed the MBI-GS as a four-dimensional construct. Jackson and Rothmann (2005) tested a four-factor model consisting of Exhaustion, Cynicism, Depersonalisation and Professional Efficacy. The study of Coetzee and Rothmann (2004) also confirmed a four-factor structure with generally acceptable coefficient alphas for the MBI-GS and the dimensions comprising Exhaustion (0,85), Cynicism (0,70), Professional Efficacy (0,66) and Cognitive Weariness (0,76).

Following the empirical studies of Coetzer and Rothmann (2006), Jackson and Rothmann, (2005), and Storm and Rothmann (2003a), item 13 of the MBI-GS (“I just want to do my work and not be bothered”) was deleted when the factorial validity of the MBI-GS was being tested. The authors attribute the problem of this item to its ambivalent nature. The results of this study negate Hypothesis 1(H¹) that the MBI-GS is a three-dimensional construct.

In respect of the UWES, contrary to the three-dimensional factor structure which has been confirmed by Schaufeli, Martinez, et al. (2002), Schaufeli, Salanova, et al. (2002) and some South African studies like Coetzee and Rothmann (2004), Naudé (2003), and Storm and Jackson (2003), the present study has found that the UWES is a two-dimensional construct with acceptable alpha coefficients scores for both subscales, namely vigour and dedication (Table 7). Two correlated items (1 with 2 and 7 with 17) helped to obtain a better fit. Studies that support the two-dimensional view include that of Naudé and Rothmann (2004) that labelled the two factors as Vigour/Dedication and Absorption. The internal consistency of the Absorption scale was, however, not acceptable. This, according to Schaufeli (2004), raises the question whether work engagement should not, in the main, be characterised only by vigour and dedication.

Based on previous empirical studies, Item 13 (“I just want to do my job and not be bothered”) was removed from the original 16-item MBI-GS scale. This is consistent with studies by Storm and Rothmann (2003a) and Jackson and Rothmann (2005) when this item was deleted. Campbell and Rothmann (2005) are of the view that although the removal of Item 13 was part of the post-hoc analyses and validation might be needed in future studies, the decision to

delete this item is consistent with previous research and should not be regarded as a model specification for sole purpose of data fitting. In respect of the UWES, based on empirical grounds, Items 9 (“I feel happy when I am engrossed in my work”), 11 (“I am immersed in my work”), 14 (“I get carried away by my work”), and 15 (“I am mentally very resilient in my work”) were deleted. The findings suggest that the items may have to be modified content-wise or deleted. In this instance the said items were deleted for reasons of bias and model-fit improvement that finally resulted in a two-factor model of the UWES. The missing values were replaced by their median scores.

The implication of the deletion of these items is that it could lead to model parsimony, which would invariably lead to the removal of variables that would affect the connotation of either the burnout or work engagement construct. On the other hand, the findings could be due to chance because the sample was relatively small. Furthermore, the problems posed by these items could be due to fiddly terms that the respondents found difficult to comprehend.

It is also important to mention that these findings, especially with regard to the UWES, should not be regarded as a negative reflection on the validity of the instrument. It can be said that very few studies (Coetzee & Rothmann, 2004; Naudé, 2003; Storm & Rothmann, 2003b) have been undertaken in South Africa on the construct and therefore there would be a need for further studies in the various occupational and race groups.

The results of this study seem to suggest that some of the items of the MBI-GS and the UWES were not properly formulated. South Africa is a multilingual society and the use of English, and especially metaphors and unfamiliar words like “engrossed”, “immersed”, “resilient”, and “exhilarated”, tend to disadvantage a sizeable majority of research subjects in terms of understanding and interpretation. Van de Vijver and Leung (1997) are of the view that metaphors should not be used in questionnaires. Naudé and Rothmann (2004) remark that whereas it is often argued that questionnaires should be in English because it is the “business language”, the best approach to improve the construct validity and construct equivalence of, for example, the MBI-GS and the UWES might be to translate questionnaires into the official languages of South Africa.

The correlated errors in this study were also problematic. Aish and Jöreskog (1990) are of the view that specification of correlated error terms for the purpose of attaining a better-fit model

is unacceptable and that correlated terms in measurement models rather represent systematic and not random measurement error in item responses. They believe that correlated errors might represent respondent characteristics that reflect bias. Byrne (2001) shares the view that previous studies with psychological constructs have shown that the specification of correlated errors can sometimes lead to better fitting models, as was the case in this study.

The second objective of this study was to determine whether there are any statistically significant differences between burnout, work engagement and the various biographical characteristics. The results show that no statistical significant differences were found between any of the dimensions of burnout (exhaustion, cynicism, professional efficacy and cognitive weariness), work engagement (vigour, and dedication) and any of the demographic variables like gender, marital status, race, age and educational background. Campbell and Rothmann (2005) also found no differences between the burnout levels of different race groups, gender groups and call centres of different medical scheme organisations.

In an analysis of Wilks' Lambda values, Jackson and Rothmann (2005) found no significant differences ($p < 0,01$) between burnout levels and individuals at different job levels, but found statistically significant differences ($p < 0,01$) for type of school, considerations about quitting the profession, possession of equipment as well as age categories and burnout levels. Since previous studies (Jackson & Rothmann, 2005) have found differences between burnout levels and some demographic variables like age, gender and length of service, and others (Maslach & Jackson, 1986), have found that divorced people experience higher levels of burnout, it would be very difficult to support the conclusion by Schaufeli and Enzmann (1998) that the demographic variables in this study might be less important in influencing burnout levels like job demands, job resources and dispositional variables. The finding of this study therefore negates hypothesis (H^2) that there are statistically significant differences between burnout, work engagement and the demographic variables.

The principal component analysis clearly separated the burnout variables from engagement variables. Professional Efficacy loaded with Vigour and Dedication on a common factor. This is not surprising because high scores on Professional Efficacy suggest effectiveness. Exhaustion, Cynicism and Cognitive Weariness loaded on a common factor representing burnout. Both burnout and engagement were strongly correlated at ($r = -0,56$). Schaufeli and Bakker (2004) have stated that the dual-process model could be used to study work-related

well-being (burnout and work engagement) because the two are indicators of wellness of employees at work. The strong correlation found between burnout and work engagement further emphasises the two as being the basic structure of well-being at work. Schaufeli and Bakker (2004) have identified two fundamental dimensions of work wellness, namely activation, ranging from exhaustion to vigour, and identification ranging from mental distance to dedication. Therefore, the burnout factor represents negative affective well-being (distress), and the work engagement factor represents positive well-being (eustress) (Nelson & Simmons, 2003).

It can be said that the results of this study could serve as a standard for measuring burnout and work engagement levels for civil servants. The four-factor structure of the MBI-GS and the two-factor structure of the UWES are in the main strongly confirmed by acceptable internal consistency, and the findings further provide the structure of well-being at work.

The study was not without its limitations. Firstly, the issue of the questionnaire response rate was a concern. Despite the several controls, the return rate was relatively low compared to the number ($N=500$) of questionnaires distributed. This could be ascribed to the volume of the questionnaire. As a result of the low return rate, some race groups like the Afrikaners, English and Indians were not sufficiently represented. The small sample used in this study therefore limits the generalisation of the study. There was also heavy reliance on self-report measures and therefore most of the respondents could not be assisted when they experienced difficulties. There was also the element of time constraint, which could not allow the researcher to pursue the route of a longitudinal study or even deal with a larger sample. Furthermore, the questionnaires were formulated in English that resulted in the other linguistic groups not understanding the items, especially the metaphors used in these items.

RECOMMENDATIONS

From the results of this study, it is recommended that the subscales of the MBI-GS, as used in the four-factor model and the two-factor structure of the UWES, be used to test burnout and work engagement of civil servants and other occupational groups. Future studies should therefore consider using the four-factor model (Exhaustion, Cynicism, Professional Efficacy and Cognitive Weariness) and the two-factor model of work engagement.

The relationship between the MBI-GS and the UWES subscales and the various demographic variables using larger samples should be examined in future studies. Since some of the respondents experienced difficulties in understanding some of the items, it is suggested that future studies should consider translating the measuring instrument into other languages of choice and substituting the confusing items with more familiar ones.

There was no motivation and commitment on the part of the respondents to complete the questionnaires, and furthermore, the questionnaire was also too wordy. As a result many of the senior managers, whom the literature found to be more susceptible to burnout, could not find the time to complete and return the questionnaires. This casts a slur on the validity of the outcomes of the study. It is therefore recommended that in a future study of this type some kind of motivation be provided or the assistance of a higher authority be sought to compel respondents to comply. It is also suggested that the number of the questionnaire items be reduced to a more manageable number. Since principal component analysis was used in this study, and a strong correlation was found between burnout and work engagement, it thus provides the structure of well-being at work. Therefore it would be important for the management of the civil service to focus on these two dimensions (burnout and engagement) when addressing issues related to work wellness.

REFERENCES

- Aish, A. M., & Jöreskog, K. G. (1990). A panel model for political efficacy responsiveness: An application of LISREL 7 with weighted least squares. *Quality and Quantity, 19*, 716–723.
- Arbuckle, J. L. (1997). *Amos user's guide version 3.6*. Chicago, IL: Smallwaters.
- Bentler, P. M., & Bonnet, D.G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 558–606.
- Berenson, M. L., & Levine, D. M. (1996). *Basic business statistics: Concepts and application* (6th ed.). Englewood Cliffs, NJ: Prentice Hall.
- Bertram, M. (2002). *Factor analysis*. Retrieved on August 10, 2003 from the World Wide Web <http://darkwing.uregon.edu/bfmalle/613/c7-nwehtmlm>
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). London, UK: Sage.
- Buitendach, J. H., & Van Zyl, Y. (2004, March). *Burnout and work engagement of educators on senior level in the Sedibeng West District-Vanderbijlpark*. Paper presented at the 2nd South African Work Wellness Conference, Potchefstroom.
- Büssing, A., & Ferrar, K. M. (1992). The measurement of burnout: Examination of a German version of the Maslach Burnout Inventory (MBI-D). *Diagnostica, 38*, 328–353.
- Butland, G. (1996). *Recognizing burnout before you are in its grasp*. Retrieved on 16 October 2002 from the World Wide Web <http://www.Craftsreport.com/december96/burnout.html>
- Byrne, B. M. (2001). *Structural equation modeling with Amos: Basic concepts applications and programming*. Mahwah, NJ: Lawrence Erlbaum.
- Campbell, C., & Rothmann, S. (2005). Burnout in a customer service environment. *Management Dynamics, 14*, 16–28.
- Carrell, M. R., Elbert, N. F., Hatfield, R. D., Grobler, P. A., Marx, M., & Van der Schyf, M. (1998). *Human resources management in South Africa*. Pretoria: Prentice Hall.
- Clark, L. A., & Watson, D. (1995). Construct validity: Basic issues in objective scale development. *Psychological Assessment, 7*, 309–319.
- Coetzee, S. E., & Rothmann, S. E. (2004). An adapted model of burnout for employees at a higher education institution in South Africa. *South African Journal of Industrial Psychology, 30*(3), 29–40.

- Coetzer, W. J., & Rothmann, S. (2006). *The construct equivalence of the Maslach Burnout Inventory and Utrecht Work Engagement scale in an insurance company*. Unpublished doctoral thesis. North-West University, Potchefstroom.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Orlando, CA: Academic Press.
- Collins, V. A. (1999). *A meta-analysis of burnout and occupational stress*. Unpublished doctoral dissertation, University of North Texas, USA. University microfilm accession number: AAT 9945794.
- Cox, T., Kuk, G., & Leiter, M. (1993). Burnout, health, work stress, and organizational healthiness. In W. B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional burnout: recent developments in theory and research* (pp. 177–193). London, UK: Taylor & Francis.
- Csikszentmihalyi, (1988). A theoretical model of optimal experience. In M. Csikszentmihalyi and I. S. Csikszentmihalyi (eds.). *Optimal Experience: Psychological studies of flow in consciousness*. New York: Cambridge University.
- Csikszentmihalyi, M. (1990). *Flow the psychology of optimal experience*. New York: Harper.
- Cullen, A. (1995). Burnout: Why do we blame the nurse? *American Journal of Nursing*, 50, 22–28.
- Fraser-Moleketsi, G. (2002). Revitalizing batho pele. *Review*, 1(3), 1–96.
- Garden, A. M. (1987). Depersonalisation: A valid dimension of burnout? *Human Relations*, 40, 545-560.
- Gil-Monte, P. R., & Peiro, J. M. (1997). A study on significant sources of the “Burnout syndrome” in workers at occupational centres for the mentally disabled. *Psychology in Spain*, 1(1), 55–62.
- Goddard, R., Creed, P., & Patton, W. (2001). The impact of skills training on the burnout and distress of employment service case managers. *Journal of Vocational Education and Training*, 53, 193–228
- Golembiewski, R. T., & Boss, W. (1992). Phases of burnout in diagnosis and intervention. *Research in Organizational Change and Development*, 6, 115–152.
- Green, E., Walkey, F. H., & Taylor, A. J. (1991). The three-factor structure of the Maslach Burnout Inventory: A multi-cultural, multinational confirmatory study. *Journal of Social Behaviour and Personality*, 6, 453–472.

- Hoyle, R. H. (1995). The structural equation modelling approach: Basic concepts and fundamental issues. In R. H. Hoyle (Ed.), *Structural equation modelling: Concepts, issues, and applications* (pp. 1–15). Thousand Oaks, CA: Sage.
- Jackson, L. T. B., & Rothmann, S. (2005). An adapted model of burnout for educators in South Africa. *South African Journal of Education, 25*(2), 100–108.
- Jackson, L. T. B., Rothmann, S., & Van der Vijver, F. J. R. (2006). *A model of work related well-being for educators in South Africa*. Submitted for publication.
- Kee, J. A., Johnson, D., & Hunt, P. (2000). *Burnout and social support in rural mental health counsellors*. Retrieved on October 18, 2002 from the World Wide Web: <http://www.marshall.edu/jrcp/sp/Kec.htm>
- Kilfedder, C. J., Power, K. G., & Wells, T. J. (2001). Burnout in psychiatric nursing. *Journal of Advanced Nursing, 34*, 389–396.
- Kotzé, F. (2002). *Psychological burnout a big problem in South Africa*. Retrieved on April 22, 2003 from the World Wide Web: <http://www.puk.ac.za/nuus/eng/news24htm>
- Kruger, M. M., Veldman, H., Rothmann, S., & Jackson, L. T. B. (2002, August). *Burnout, job satisfaction, sense of coherence and job stress in local government*. Paper presented at the 25th International Conference of Applied Psychology, Singapore.
- Lahore, M. R., & Mason, H. L. (1989). Maslach Burnout Inventory: Factor structures and norms for USA pharmacists. *Psychological Reports, 64*, 1059–1063.
- Law, K. S., Wang, C. S., & Mobley, W. H. (1998). Toward a taxonomy of multidimensional constructs. *Academy of Management Review, 23*, 741–745.
- Lee, R. T., & Ashforth, B. E. (1996). A meta-analytical examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 81*, 123–133.
- Leiter, M. P., & Maslach, C. (2001). Burnout and health. In A. Baum, T. A. Revenson & J. E. Singer (Eds.), *Handbook of health psychology* (pp. 415–422). Mahwah, NJ: Erlbaum.
- Leiter, M. P., & Schaufeli, W. B. (1996). Consistency of the burnout construct across occupations. *Anxiety, Stress and Coping, 9*, 229–243.
- Lor, P. J. (1990). Library Science. Only study guide for BIB302-G. (Research method in library and information science). University of South Africa: Pretoria.
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*, 130–149.
- Maslach, C. (1982). *Burnout: The cost of caring*. Englewood Cliffs, NJ: Prentice Hall.

- Maslach, C. (1993). Burnout: A multidimensional perspective. In: W. B. Schaufeli, C. Maslach and T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 19–32). Washington, DC: Taylor & Francis.
- Maslach, C. (1998). A multidimensional theory of burnout. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 68–85). Oxford: Oxford University Press.
- Maslach, C. (2001). *Test developed: The Maslach Burnout Inventory*. Retrieved on October 18, 2003 from the World Wide Web: <http://www.Mhhe.com/mayfieldpub/psychtesting/profiles/maslach.htm>
- Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behaviour*, 2, 99–113.
- Maslach, C., & Jackson, S. E. (1986). *MBI: Maslach Burnout Inventory: Manual research edition*. Palo Alto, CA: Consulting Psychologists.
- Maslach, C., Jackson, S. E., & Leiter, M. (1996). *Maslach Burnout Inventory: Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists.
- Maslach, C., & Leiter, M. P. (1997). *The truth about burnout*. San Francisco, CA: Jossey Bass.
- Maslach, C., Schaufeli, W. B., & Leiter, M. B. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422.
- Minium, E. W., & Clarke, R. B. (1982). *Elements of statistical reasoning*. New York: John Wiley.
- Moss, V. A. (1989). Burnout: symptoms, causes, prevention. *AORN Journal*, 5, 1071-1076.
- Mouton, J. (1998). *Understanding social research*. Pretoria, SA: Sigma.
- Nachmias, C. F., & Nachmias, D. (1997). *Research methods in the social sciences* (5th ed.). London, UK: Arnold.
- Naudé, J. L. P. (2003). *Occupational stress, coping, and work engagement of emergency workers in Gauteng*. Unpublished doctoral thesis. PU for CHE, Potchefstroom.
- Naudé, J. L. P., & Rothmann, S. (2004). The validation of the Utrecht Work Engagement Scale for emergency medical technicians in Gauteng. *South African Journal of Economic and Management Sciences*, 7(3), 459–468.
- Nelson, D. L. & Simmons, B. L. (2003). Health psychology and stress: A more positive approach. In J. C. Quick & L. E. Tetrick (Eds), *Handbook of occupational health psychology* (pp. 97–117). Washington, DC: American Psychological Association.
- Norušis, M. J. (1994). *SPSS professional statistics 6.1*. Chicago, Illinois: SPSS.

- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Pienaar, J., & Sieberhagen, C. (2005). Burnout and engagement of student leaders in higher education institution. *South African Journal of Education, 19*, 155–167.
- Potter, B. (1998). *Symptoms of burnout*. Retrieved on October 9, 2002 from the World Wide Web: File:///A/symptoms of job burnout.htm
- Public Service Commission (2006). Fifth annual state of the public service report: Girding the public service with the appropriate capacity for effective service delivery and adherence to the values of the constitution.
- Reynolds, S., & Shapiro, D. A. (1991). Stress reduction in transition: Conceptual problems in the design, implementation, and evaluation of worksite stress management interventions. *Human Relations, 44*, 717–733.
- Rothmann, S. (2002). *Burnout research in South Africa*. Paper presented at the 1st South African Burnout Conference, Potchefstroom.
- Rothmann, S. (2004). Burnout, psychological strengths and coping strategies of senior managers in a manufacturing organisation. *Management Dynamics, 13*, 26–37.
- Rothmann, S., Jackson, L. T. B., & Kruger, M. M. (2003). Burnout and job stress in a local government: The moderating effects of sense of coherence. *South African Journal of Industrial Psychology, 29*, 52–60.
- Rothmann, S., & Jansen van Vuuren, J. A (2002, March). *Sense of coherence, self-efficacy, locus of control, coping and burnout of senior managers in a manufacturing industry*. Poster session presented at the 1st South African Burnout Conference, Potchefstroom.
- Rothmann, S., & Malan, H. (2003). Koherensiesin, selfdoeltreffendheid, lokus van beheer en uitbranding by maatskaplike werkers. *South African Journal of Industrial Psychology, 29*, 43–51.
- Rothmann, S., Malan, A. M., & Rothmann, J. C. (2001, August). *Sense of coherence, coping and burnout in a corporate pharmacy group*. Paper presented at the 7th Annual PsySSA Conference, Johannesburg.
- Salanova, M., & Schaufeli, W. B. (2000). Exposure to information technology and its relation to burnout. *Behaviour and information technology, 19*(5), 385–392.
- Savicki, V. (1993). Clarification of child and youth care identity through an analysis of work environment and burnout. *Child and Youth Care Forum, 22*, 441–457.

- Schaufeli, W. B., & Bakker, A. B. (2001). Werk en welbevinden: Naar een positieve benadering in die arbeids – en gezondheidspsychologie [Work and well-being: Towards a positive occupational health psychology]. *Gedrag en Organizatie*, *14*, 229–253.
- Schaufeli, W. B. & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi sample study. *Journal of Organisational Behaviour*, *25*, 1–23.
- Schaufeli, W. B., Bakker, A. B., Hoogduin, K., Schaap, C., & Kladler, A. (2001). On the clinical validity of the Maslach Burnout Inventory and the burnout measure. *Psychology and Health*, *16*, 565–583.
- Schaufeli, W. B., & Enzmann, D. (1998). *The burnout comparison to study and practice: A critical analysis*. London, UK: Taylor & Francis.
- Schaufeli, W. B., & Janczur, B. (1994). Burnout among nurses: A Polish-Dutch comparison. *Journal of Cross Cultural Psychology*, *25*, 95–113.
- Schaufeli, W. B., Leiter, M .P., & Kalimo, R. (1995). *The general burnout questionnaire: Gross-national development and validation*. Paper presented at the APA/NIOSH Congress Work, Stress and Health, Creating Healthier Workplaces, Washington, DC.
- Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). Maslach Burnout Inventory-General Survey. In C. Maslach, S. E. Jackson & M. P. Leiter (Eds.), *Maslach Burnout Inventory Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists.
- Schaufeli, W. B., Martinez, I., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology*, *33*, 464–481.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, *3*, 71–92.
- Schaufeli, W. B., Van Diederendonck, D., & Van Gorp, K. (1996). Burnout and reciprocity: Towards a dual-level social exchange model. *Work and Stress*, *10*, 225–237.
- Schutte, N., Toppinen, S., Kalimo, R., & Schaufeli, W. B. (2000). The factorial validity of the Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and nations. *Journal of Occupational and Organizational Psychology*, *73*, 53–66.
- Sebego, L. K. (2005). The best time is now. *Ditiro*, *6*, 6–7. (An in-house publication of the Department of Public Works, North West Province).
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*, 514

- SPSS Inc. (2003). SPSS 12.0 for windows. Chicago, IL: Author.
- Statistical Services (1999). *Factor analysis using SAS proc factor*. The university of Texas at Austin. Retrieved August 10, 2003 from the World Wide Web: <http://www.utexas.edu/ccdocs.stat53.html>
- Statsoft (2003). *Principal components and factor analysis*. Retrieved August 10, 2003 from the World Wide Web: <http://www.statsoftcom/textbook/st/acan.html>
- Storm, K., & Rothmann, S. (2003a). A psychometric analysis of the Maslach Burnout Inventory-General in the South African Police Service. *South African Journal of Industrial Psychology*, 33(4), 219–226.
- Storm, K., & Rothmann, S. (2003b). The validation of Utrecht Work Engagement Scale in the South African Police Services. *South African Journal of Industrial Psychology*, 29(4), 62–70.
- Storm, K., & Rothmann, S. (2005). Burnout and work engagement among South African Police Service. Unpublished Manuscript.
- Strickland, D. (1998). Balancing life's choices-all dressed up and too many places to go. *AORN Journal*, 68, 639–641.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.
- Taris, T. W., Schreurs, P. J. G., & Schaufeli, W. B. (1999). Construct validity of the Maslach Burnout Inventory-General Survey: A two-sample examination of its factor structure and correlates. *Work and Stress*, 13, 223–237.
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38(1), 1–10.
- Uetz, M. K. (1993). A survey of burnout level and stress coping techniques among university and college ombudsmen. *UCI Ombudsman: The Journal*. Retrieved Web: [University and college ombudsmen.htm](http://www.uci.edu/ombudsman/college_ombudsmen.htm)
- United Nations Organisation (2005). Unlocking the human potential for public sector performance: World public sector report.
- Van de Vijver, F. & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Thousand Oaks, CA: Sage.
- Van Horn, J. E., Taris, T. W., Schaufeli, W. B., & Schreurs, P. J. G. (2004). A multidimensional approach to measuring teacher well-being. *Journal of Occupational and Organizational Psychology*, 77(3), 365–375.

Welman, J. C., & Kruger, S. J. (1994). *Research methodology for the business and administrative sciences* (2nd ed.). Cape Town, SA: Oxford University Press.

CHAPTER 3

RESEARCH ARTICLE 2

OCCUPATIONAL STRESS, ORGANISATIONAL COMMITMENT AND ILL HEALTH OF CIVIL SERVANTS

ABSTRACT

The objectives of this study were to establish the internal consistency of the ASSET, to examine the occupational stressors of civil servants in the North West Province of South Africa, and to assess the relationship between occupational stress, commitment and ill health. A cross-sectional survey design was used. An accidental sample ($N=207$) of civil servants in the Mafikeng area was taken. The results showed that stress due to lack of job resources predicted 21% of the variance in physical ill health, while stress due to job security and aspects of the job explained 31% of the variance in psychological ill health. Furthermore, stress due to control and job security predicted 28% and 20% of the variance in organisational and individual commitment respectively.

OPSOMMING

Die doelwitte van hierdie studie was om die interne bruikbaarheid van die ASSET te bepaal, om die beroepstressore van staatsdiensamptenare in die Noordwes-provinsie van Suid-Afrika te ondersoek en om die verhouding tussen beroepstres, toewyding en swak gesondheid te bepaal. 'n Dwarssnit opname-ontwerp en 'n gerieflikheidsteekproef ($N=207$) van staatsdiensamptenare in Mafikeng is gebruik. Die resultate het getoon dat stres as gevolg van 'n tekort aan werkhulpbronne 21% van die variansie in fisieke ongesondheid voorspel het, terwyl stres as gevolg van werksekuriteit en onder werks aspekte 31% van die variansie in psigologiese ongesondheid voorspel het. Verder het stres as gevolg van beheer en werksekuriteit onderskeidelik 20% en 28% van die variansie in individuele en organisasieverbondenheid voorspel.

Civil servants are operating in a rapidly changing environment. This environment is characterised by constant changes in information technology, the media, and electronic communications as well as the modernisation of the constitution, growing public demand for higher quality services, and new government priorities. Civil servants are challenged to respond to these changes fast (often resulting in too little time to get the job done properly), while aiming for excellence, innovation, best value and to catalyse wider transformation in society (United Nations Organisation - UNO, 2005; Wilson, 1999). These demands result in pressure and stress among civil servants. According to the UNO (2005) report, governments in developing countries would have to capacitate public administration for the realisation of the Millennium Development Goals (MDGs). This poses a further challenge to the public service institutions.

Workplace stress and anxiety are becoming more and more pronounced and widespread throughout organisations and the public service for that matter (Entec Corporation, 2004). It is estimated that the number of job-related accidents and illnesses claim more than two million lives annually, while 270 million accidents and 160 million illnesses occur over the same period worldwide. This costs the global economy 4% of the Gross Domestic Product annually (Taljaard, 2005). According to Jones and Bright (2001), occupational stress is associated with increases in negative work-related outcomes like high turnover, job dissatisfaction, ill health, increased absenteeism, and low productivity. Today, the public does not trust public administrators; many people believe they are incompetent and incapable of providing services in an effective, efficient and responsive manner, ignoring the rigid and impersonal bureaucratic environment in which administrators operate (Kilpatrick, 1999).

What is rather interesting about the current situation is the wall of silence and denial about the existence of stress in organisations and institutions, despite the costs associated with this growing "disease". It is not measured, and little or no leadership attention or focus is given to this scourge (Entec Corporation, 2004). It is common knowledge that psychosocial stressors at work were traditionally regarded as unimportant. As a result, little consideration was given to the effects of these stressors on employees, and organisations treated psychosocial stressors as an individual problem to be managed by the individual employee. Today, however, psychosocial stressors are regarded as important factors in the success of any organisation. Therefore, in order to transform the public service into an efficient, effective and competitive service, research into the area of stress is needed.

According to Entec Corporation (2004), the Economic and Business Roundtable on Mental Health published a study in July 2000 entitled “the Unheralded Business Crisis in Canada – Depression at Work” that showed that the cost of stress and other mental illnesses at work is growing exponentially. Unfortunately, according to Entec Corporation (2004), many other hidden costs can also be ascribed to this source of ill health or disease. Organisations where the staff either work under conditions of debilitating stress or along side others who are over-stressed, such staff tend to experience; decreasing employee satisfaction, increased use of Employee Assistance Programme services, increased conflict, decreasing meeting of deadlines, and most serious of all, a reduced quality of customer service (Entec Corporation, 2004). In Canada during 1999, the associated costs of lowered productivity, absenteeism, and drugs prescribed specifically for these illnesses have been estimated over \$8 billion, which is equivalent to 13,4% of the annual operating profits of Canadian enterprises (Entec Corporation, 2004).

Occupational stress is regarded as a serious occupational risk in South Africa. The ten most general claims accepted by medical schemes are for the treatment of stress-related illnesses, while 75% of the visits to primary health care facilities are stress-related (Van der Merwe, 2003). Rothmann (2005) analysed the occupational stressors in 14 different occupations and organisations in South Africa and concluded that the stress levels in some occupations, especially in the health sector, in call centres, among correctional officers, university educators, and police officers are high.

In South Africa, it has been estimated that 2 000 people are killed annually in work-related incidents, 20 000 people are permanently disabled, 7 000 people undergo amputations, 900 people are blinded, and 7 500 people sustain brain injuries, most of which are occupational stress-related (Olwage, 1993). Over the years occupational accidents have escalated from 122 889 in (Department of labour, 1997), to 250 000 in 2005 (Taljaard, 2005). Occupational accidents and diseases cost South Africa in the region of 3,5% of the Gross Domestic Product, which translates to about R30 billion. Statistics have shown that each day, an average of 10 000 police officers in South Africa are absent from work because of occupational stress (Mulder, 2002). In a 1997 study by the Human Sciences Research Council (HSRC) among the police and the traffic services, the following “unique stressors” were identified: low salaries, lack of manpower, lack of effective equipment, poor communication, and lack of consultation by management (Mulder, 2002). It is widely known that these

stressors permeate the entire South African civil service. The negative consequences of these stressors, namely occupational injuries, sickness and death, absence from work, low morale, diminishing levels of customer service, depression, alcohol and drug use, and purposeful destructive behaviours because of occupational stress (Jones & Bright, 2001; Mead, 1998; Olwagen, 1993; Wright & Smye, 1996) emphasise the importance of effective individual and organisational practices to deal with occupational stress (Cordes & Dougherty, 1993; Landsbergis, 1993). It is therefore imperative and relevant to study the stress levels of South African civil servants.

Occupational stress is considered an increasing problem for employees in Western industrialised societies, particularly in the United States (Sauter & Murphy, 1995). According to Ivancevich and Matteson (1990), the United States Clearing House for Mental Health Information reported that US industry has an annual decrease of \$17 billion in production capacity due largely to stress-related problems. Others estimate that at least \$60 billion is lost annually by organisations because of stress-related physical illnesses (Entec Corporation, 2004; Sauter & Murphy, 1995). In the European Union, stress-related illness is the biggest single cost, with stress and burnout constituting 28% and 23% of illnesses, respectively (European Foundation, 2000). According to the Sunday Times Business Times (2004), a record number of people (5,9 million) of the British workforce are off sick. This report states that more and more people suffer from mental or behavioural disorders such as depression, causes of which have been related to stress. The number of people affected rose from 445 000 in 1995 to 846 000 in 2003. In the UK, one in every five people finds their work either very or extremely stressful (Tasho, Jordan, & Robertson, 2005).

It has also been observed that almost all occupational stress research and theories have been developed and tested in Western industrialised countries (Jamal, 1999). The issue of occupational stress should however be of relevance to a country such as South Africa where enormous economic, social, and technological changes are taking place (Siu, Spector, Cooper, Lu, & Yu, 2002) and the workforce are particularly susceptible to stress. It is therefore important to replicate occupational stress research in South Africa, especially among civil servants who are spearheading these structural, social and economic transformations at the workplace – employees who are bound to suffer occupational stress.

In the 2005 State of the Nation Address, the President of South Africa made very serious demands on the public service when he said by May, the Forum of SA Directors-General will submit to Cabinet a thorough review of the functioning of the government system as a whole... at the same time we have to deal with those within the public service who, because of their negligence and tardiness, deny many of our people services due to them, in instances where resources have been made available to deliver these services". The pressure brought to bear on the Directors-General cascades down to the lower ranks of civil servants – not only on a national level, but also in the provinces.

Among the many causes of occupational stress in the South African public service, such as the demand for quality service delivery made by the President and his Premiers, tension among diverse groups of employees, social change and transformation (Carrell, Elbert, Hatfield, Gobbler, Marx & Van der Schyf, 1998; Kotzé, 2002), is the issue of general shortage of skilled labour in the economy. This shortage has inevitably led to greater pressure on skilled employees. The Deputy State President, Phumzile Mlambo-Ngcuka, speaking at the launch of a new skills initiative on 27 March 2006, (Mlambo-Ngcuka, 2006) warned that failure to remedy a massive skills shortage would be the death-knell for the Accelerated and Shared Growth Initiative for South Africa (Asgi-SA). She continued by saying that "nothing short of a skills revolution... will extricate us from the crisis we face".

Occupational stress, commitment and ill health

According to Lazarus and Folkman (1984), stress is an outcome of a transaction or relationship between the person and the environment. When the environmental stressors are perceived by an individual to be demanding, and have exceeded his or her personal resources to cope with them, the person will experience stress. Ivancevich and Matteson (1990) are also of the view that stress has different meanings to different people. They contend that most definitions of stress recognise the individual and the environment in terms of a stimulus interaction, a response interaction, or a stimulus-response interaction. In view of this observation, Ivancevich and Matteson (1990, p. 219) define stress as "an adaptive response, mediated by individual differences and/or psychological processes, that is a result of any external or environmental action, situation, or event that places excessive psychological or physical demands on a person." Landsbergis et al. (1993) share the view that the job strain

model emphasises the interaction between demands and control in causing stress, and objective constraints on action in the work environment, rather than individual perceptions or “perception environment fit”.

For the purposes of this study, the term stress will indicate participants’ responses to questions establishing whether they perceive low, moderate or high levels of stress at work. Stressors or sources of pressure will refer to characteristics of the external environment (nature of the job and the working conditions), and the term strain will describe any response of the person to physical and psychological ill health and poor job performance. According to Van Dick and Wagner (2001), strain may be demonstrable at several different levels. It may be psychological (job dissatisfaction), cognitive (poor decision-making), behavioural (accident proneness and absenteeism), physiological (increased blood pressure) and interpersonal (intolerance and lack of consideration). In this study, strain is denoted by psychological and physical ill health (Khan & Byosiere, 1992). Khan and Byosiere (1992) and Jackson and Rothmann (2006) have found strong correlations between psychological strain (avoiding contact with others, anxiety, irritability, and difficulty in making decisions) and work-related stressors (poor support at work, job demands, insecurity at work, poor pay, and benefits).

The model of occupational stress, aspects of the job, commitment and ill health (strain), which was developed by Cartwright and Cooper (2002), is presented in Figure 1. This model illustrates the link between occupational stressors, aspects of the job, commitment and ill health. As is evident in Figure 1, seven occupational stressors have been identified, namely work relationships (lack of support or poor relationships with both colleagues and supervisors), work-life balance (work interfering with the personal life of an individual), overload (excessive work demands), job security (fear of job loss), control (lack of influence on the way in which one’s work is performed.), resources and communication (lack of requisite capacity, equipment and resources), and pay and benefits (financial rewards associated with one’s work). Aspects of the job refer to sources of stress related to the basic nature of the job. Commitment refers to the organisation’s commitment to the individual and the other way round. Ill health is an outcome of stress that is represented in the figure by physical ill health and psychological ill health.

According to Jackson and Rothmann (2005), poor health is an outcome of stress that can be used to ascertain whether workplace pressures have positive and motivating, or negative and

damaging effects. However, Cartwright and Cooper (2002) are of the view that poor health may not necessarily be suggestive of workplace stress, since some people may be unwell because they choose not to lead a healthy lifestyle. According to Meyer, Stanley, Herscovitch, and Topolnytsky (2002), some researchers argue that affective commitment can cushion the negative impact of work stressors on employee health and well-being, while others are of the view that committed employees might experience more negative reactions to such stressors than those who are less committed. Tytherleigh's (2003) study found that work relationships, job security, resources and communication caused the highest levels of strain. Coetzer and Rothmann (2006) found differences between the biographical variables and the perceived stress levels.

It is evident from Figure 1 that there seems to be a relationship between perceptions of stressful working conditions and ill health (physical and psychological ill health). Similarly, there is a relationship between commitment and ill health.

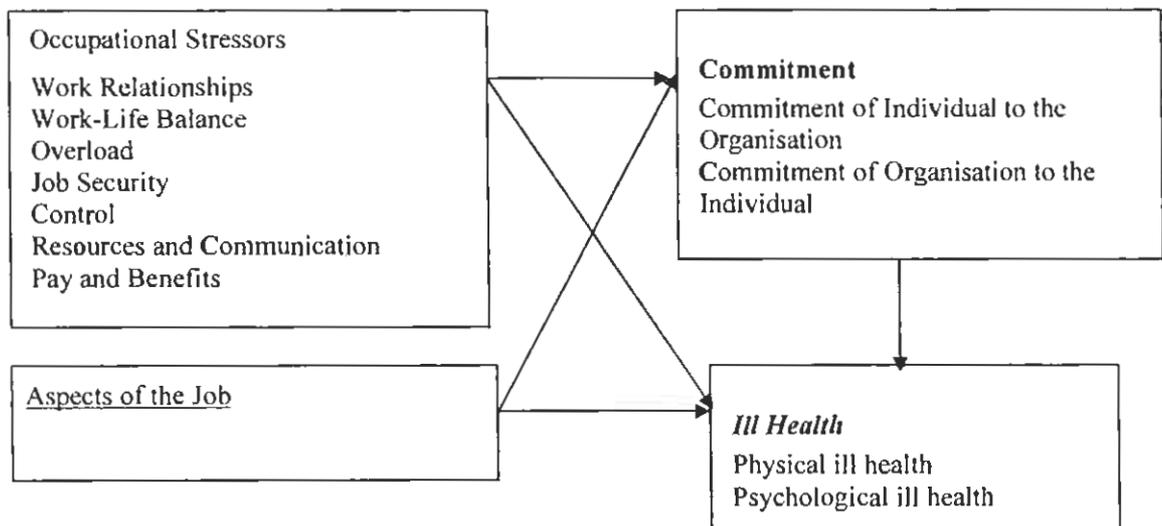


Figure 1. Model of occupational stress, commitment, aspects of the job, and ill health

Organisational commitment

Organisational commitment is defined as a state in which an employee identifies with a particular organisation and its goals, wishes to maintain membership in the organisation, and

has a feeling of loyalty to the organisation (Ivancevich & Matteson, 1990; Robbins, 2001). According to Robbins (2001), research evidence demonstrates inverse relationships between organisational commitment and absenteeism and turnover. Siu (2002) states that organisational commitment has been recognised as a significant moderator of work stress and that it was associated with most of the physical and psychological outcomes among employees as well as the moderating effects on the stressor-health relationship. According to Siu (2002), the indirect or moderating effect of commitment protects individuals from the negative effect of stress, because it enables them to attach direction and meaning to their work.

According to Meyer, Stanley, Herscovitch, and Topolnytsky (2002), organisational commitment continued to be a major focus of research until it has been recognised that commitment is a multidimensional construct. Allen and Meyer (1990), Meyer, Stanley, Herscovitch, and Topolnytsky (2002), and Siu (2002) have adopted a more comprehensive perspective to organisational commitment by identifying three dimensions, namely affective, continuance and normative commitment. Affective commitment refers to an emotional attachment to, identification with, and involvement in the organisation. Continuance commitment is the perceived cost associated with leaving the organisation, and normative commitment mirrors a perceived responsibility to remain in the organisation (Meyer et al., 2002). This three-component model of organisational commitment by Meyer et al. (2002) identifies the general categories of variables that are involved in the development of affective, continuance, and normative commitment.

The variables responsible for affective commitment include personal characteristics and work experiences. Continuance commitment is caused by personal characteristics, alternatives and investments, while normative commitment is developed by personal characteristics, socialisation, experiences and organisational investments (Meyer et al., 2002). On the right side of their model are variables considered consequences of commitment. An important underlying principle for the development of the three-component model was the belief that all three forms of commitment relate negatively to turnover, and relate differently to measures of other work-relevant behaviours like attendance, in-role performance, organisational citizenship behaviour (OCB). According to Meyer et al. (2002), affective commitment is expected to have the strongest positive relation, followed by normative commitment, while

continuance commitment is expected to be unrelated, or negatively related to these desirable work behaviours.

Suliman and Iles (2000) have found that affectively committed employees are more likely to remain in an organisation and contribute to the success of the organisation than continuance-committed individuals. Organisational commitment may also provide workers with stability, and a feeling of belonging or the other way round (Siu, 2002). It could be inferred that organisational commitment can play an important role in moderating the effect of occupational stress on employee health.

Occupational stress and biographical variables

Cooper and Dewe (2004) have emphasised the need to understand the individual differences in the way people perceive and react to stress. According to Cooper and Bright (2001), individual differences have been known to influence the stressor-strain relationship either directly (affecting the level of strain), or by acting as a moderator (changing the strength of the stress-strain relationship). Cox and Ferguson (1991) are of the view that individual differences may influence the stress-strain relationship by acting as a mediator, thereby becoming responsible for the transmission of an effect. It therefore becomes obvious that the civil servants under study will not experience stress evenly, but that the levels of stress will vary from person to person. Davey (1994) and Cooper, Kirkcaldy, and Brown (1994) have found evidence that personality traits such as locus of control and type-A personality have an effect on occupational stress. Jackson and Rothmann (2006) found in their study that educators in the age group 18 to 27 obtained a practically significantly higher score (medium effect) on Psychological (Ill) Health compared to the age group 28 to 32. It is important to mention that some studies, for instance Martocchio and O'Leary (1989), have not found any statistically significant relationship between occupational stress and biographical variables such as age, years of service and gender. Jackson and Rothmann (2006) are of the view that failures of some past research to elicit biographical differences may be accounted for by a lack of suitability of the particular underlying theories or, for that matter, a lack of theory.

Based on the literature review, the following hypotheses are formulated:

- H¹: The ASSET is an internally consistent measuring instrument to measure occupational stress for civil servants.
- H²: Organisational commitment is a significant moderator of occupational stress.

H³: There are significant differences between biographical variables and the stress levels of civil servants.

METHOD

Research design

A cross-sectional survey design was used in this study (Shaughnessy & Zechmeister, 1997).

Participants

A study population ($N=500$) was targeted through accidental sampling from a population of Mafikeng civil servants of the North West province in South Africa. A total of 340 questionnaires were returned, of which only 207 could be used. This was possibly due to lack of motivation and commitment on the part of the respondents and probably the too wordy instrument. Table 1 presents some of the characteristics of the respondents. The sample consisted predominantly of blacks (94,4%), with a gender composition of females (52,5%) and males (46,5%), while 48,3% of the sample were married and 34,3% were single.

The majority (51,0%) seem to be satisfied with their current relationship, be it married, single or otherwise. In terms of age, the majority of respondents (33,5%) were between 41-57 years of age. With regard to the educational level, the following distribution was found: grade 12 certificate (31,0%), 3-year degree (33,5%), honours degree (25,6%), master's and doctoral degrees (9,9%). It is also worthwhile mentioning that 37,9% of the sample never had any promotion during the past five years, and that 45,2% had only one promotion during the same period. A sizeable majority (93,2%) are permanently employed, and 48,1% of the sample always take their annual leave compared to 40,8% who sometimes use their annual leave, and 11,2% who never take their annual leave. In the area of lifestyle, only 9,7% of the participants find time to relax, and 8,9% do manage an "ideal" exercise. The missing values explain why some frequencies and percentages of some items did not add up to 100

Table 1

Characteristics of the Participants

Item	Category	Frequency	Percentage
Gender	Male	94	46,5
	Female	108	53,5
Marital Status	Single	70	34,3
	Engaged	10	4,9
	Married	100	48,3
	Divorced	24	11,6
Race	Blacks	186	90,4
	Whites	19	9,3
	Indians	2	0,3
Age	>34	67	33,5
	>40	66	33,0
	>57	67	33,5
Tenure	Permanent	192	93,2
	Temporary	9	4,4
	Fixed term	5	2,4
Years at current position	0 – 1	58	28,4
	1,1 – 4	80	39,3
	4,1 – 10	59	28,9
	10,1 – 16	7	3,5
Education	Grade 12	63	31,0
	3-year degree	68	33,5
	Postgraduate	72	35,5
Satisfaction with relationship	Very satisfied	6	3,1
	Dissatisfied	6	3,1
	Neither of the above	37	19,3
	Satisfied	98	51,0
	Very satisfied	45	23,4

Measuring battery

The following measuring instruments were used in this study:

A *biographical questionnaire* was used to obtain information on the demographic characteristics of the research subjects. Information gathered included name, gender, age, educational qualification, salary, position, number of years with the department, number of years at current position, frequency of promotion, type and amount of support, marital status, race and lifestyle.

The *ASSET* (An Organisational Stress Screening Tool), developed by Cartwright and Cooper (2002), was used in this study. It measures the potential exposure to stress in respect of a range of common workplace stressors and consequently represents an organisation's first step towards effectively managing stress at the workplace. The ASSET questionnaire comprises four parts.

The first part measures an employee's perception of his/her job. This dimension consists of (37) items dealing with issues like overload, job security, pay and benefits, resources and communication, and work-life balance. The second set of questions (nine items) measures the individual's attitude to the organisation. This includes questions relating to supposed levels of commitment from and to the organisation. The third set of questions (19 items) concerns physical and psychological health.

The fourth set of questions (24 items) relates to general information that might affect the level of stress. Reliability of the ASSET is based on the Guttman split-half coefficient. Only two factors did not return coefficients above 0,70, ranging from 0,60 to 0,91 (Cartwright & Cooper, 2002). Tytherleigh (2003) conducted a study among 14 English higher education institutions and registered Cronbach's alpha scores on the respective *ASSET* subscales in view of establishing the reliability, ranging from 0,64 to 0,94. Coetzer and Rothmann (2006) had Cronbach's alpha scores on the ASSET subscales ranging from 0,67 to 89, with three scores below the guideline of 0,70 provided by Nunnally and Bernstein(1994). Jackson and Rothmann (2006) registered scores of 0,59 to 0,89 on the ASSET subscales with five scores below the 0,70 guideline. These scores compare favourably with 0,70 (0,55 in basic research) (Nunnally & Bernstein, 1994).

Statistical analysis

The statistical analysis was carried out with the help of the SPSS program (SPSS Inc., 2003). Cronbach alpha coefficients were used to assess the reliability and validity of the measuring instruments (Berenson & Levine, 1996; Clark & Watson, 1995; Norušis, 1994). Coefficient alpha conveys important information regarding the proportion of error variance contained in a scale.

Descriptive statistics (means, standard deviations, skewness, kurtosis and Cronbach's alphas)

were also used to analyse the data. According to MRA (Market Researchers & Analysts) (2002), these descriptive statistics give the researcher a feel of the data and provide the basic information about the results.

The level of statistical significance was set at $p \leq 0,05$. According to P.A.N.D.A (2002), this is the probability that you would find the answer you have (the difference in means), given that the null hypothesis is true. Effect sizes were used to decide on the significance of the findings. Pearson product-moment correlation coefficients were used to indicate the linear relationships between the variables of interest. A cut-off point of 0,30 (medium effect) (Cohen, 1988) was set for the practical significance of the correlation coefficients.

A standard multiple regression analysis was conducted to determine the percentage of the variance in the dependent variable (ill health) that is predicted by the independent variables (occupational stressors). The effect size (which indicates practical significance) in the case of multiple regression is specified by the following formula (Storm & Rothmann, 2005):

$$f^2 = R^2 / (1 - R^2)$$

A cut-off point of 0,35 (large effect) (Storm & Rothmann, 2005) was set for the practical significance of f^2 .

RESULTS

Multivariate analysis of variance (MANOVA) was used to investigate the relationship between the occupational stressors, the stress outcome variables, and various biographical characteristics like age, marital status and educational level. The differences between the biographical characteristics were analysed for statistical significance with Wilks' Lambda statistics. Following the analysis of the Wilks' Lambda values, it became evident that there were no statistically significant differences between the biographical variables and the occupational stressors.

Table 2 presents the descriptive statistics, sten scores, and Cronbach's alpha coefficients of the ASSET subscales, namely Work Relationships, Work-Life Balance, Overload, Job Security, Control, Resources and Communication, Aspects of the Job, Organisational

Commitment, Physical Health and Psychological Well-being. The outcomes in Table 2 show that Job Security and Individual Employee Commitment have unacceptable skewness and kurtosis scores. In respect of the Cronbach's alpha coefficients, all the subscales of the measuring instruments, except for Job Security (0,57), are in line with the guideline of $\alpha = 0,70$ (Nunnally & Bernstein, 1994). The sten scores on Individual Employee Commitment and Psychological (Un)Well-being are the highest, followed by Organisational Commitment, which has a sten score of 5. Inspection of Table 2 indicates that generally the stressor dimensions are perceived as moderately low.

Table 2

Descriptive Statistics, Sten, and Alpha Coefficients of the ASSET

Item	Sten	Mean	SD	Skewness	Kurtosis	A
Work Relationships	4	20,41	8,10	0,88	0,31	0,84
Work-Life Balance	2	10,17	5,28	0,69	-0,53	0,84
Overload	4	10,23	4,34	0,78	0,16	0,75
Job Security	1	9,72	4,02	1,09	1,00	0,57
Control	3	11,93	5,02	0,32	-0,80	0,78
Resources/ Communications	4	11,97	5,18	0,51	-0,49	0,76
Aspects of the Job	3	22,18	7,58	0,51	0,09	0,72
Organisational Commitment	5	19,62	5,84	-0,53	-0,37	0,85
Individual Commitment	7	17,64	4,91	-1,20	1,01	0,87
Physical Ill Health	4	13,06	4,41	0,16	-0,62	0,84
Psychological (Un)Well-being	7	19,76	6,80	0,46	-0,31	0,90

The product moment correlation coefficients between the *ASSET* dimensions are presented in Table 3. A statistically significant positive correlation (practically significant, large effect) was found between work-life balance and psychological (un)well-being, while a statistically significant positive correlation (practically significant, medium effect) was found between work-life balance and physical ill health. Overload has a statistically significant positive correlation (practically significant, medium effect) with psychological (un)well-being. Job security has statistically significant positive correlation (practically significant, medium effect) with ill health (physical and psychological). Control has a statistically significant positive correlation (practically significant, medium effect) with psychological (un)well-

being. Stress due to lack of resources and aspects of the job have statistically significant positive correlations (practically significant, medium effect) with both physical ill health and psychological (un)well-being.

Table 3 further shows the correlations between the stressor variables and commitment. Work-life balance, job security and aspects of the job have statistically significant negative correlations (practically significant, medium effect) with both organisational and individual commitments. Overload and control both have statistically significant negative correlations (practically significant, medium effect) with individual commitment, while stress due to lack of resources has a statistically significant negative correlation (practically significant, medium effect) with organisational commitment. In terms of commitment and ill health, organisational commitment has statistically significant positive correlations (practically significant, medium effect) with both physical ill health and psychological (un)well-being, while individual commitment has a statistically significant negative correlation (practically significant, medium effect) with psychological (un)well-being.

Table 3

Product-moment Correlation Coefficients of the ASSET Dimensions

Items	1	2	3	4	5	6	7	8	9	10
1. Work-Life Balance	0,44**									
2. Overload	0,71***	0,58***								
3. Security	0,52***	0,24*	0,52***							
4. Control	0,72***	0,29*	0,58***	0,43**						
5. Resources	0,68***	0,26*	0,50***	0,44**+	0,80***					
6. Aspects of the Job	0,71***	0,57***	0,68***	0,52***	0,64***	0,63***				
7. Organisational Commitment	-0,46**	-0,26*	-0,37**	-0,26*	-0,47**	-0,35**	-0,41**			
8. Individual Commitment	-0,42**	-0,31**	-0,35**	-0,31**	-0,29*	-0,30**	-0,39**	0,73***		
9. Physical Ill Health	0,42**	0,20*	0,31**	0,15*	0,33**	0,36**	0,36**	-0,21*		
10. Psychological (Un)Well-Being	0,53***	0,30**	0,42**	0,41**	0,39**	0,35**	0,49**	-0,32**	-0,33**	0,67***

* $p < 0,05$ (Statistically significant)

+ $r > 0,30$ (Practically significant, medium effect)

++ $r > 0,50$ (Practically significant, large effect)

A series of standard multiple regression analyses were carried out to determine which stressors predict organisational commitment, individual employee commitment, physical ill health, and psychological (un)well-being. The outcomes of the standard multiple regression analyses with work-life balance, overload, job security, control, resources, and aspects of the

job as independent variables, and organisational commitment, individual employee commitment, physical ill health, and psychological (un)well-being as dependent variables, are reported in Table 4.

Table 4
Standard Multiple Regression Analyses for the Job Stressors and the Outcomes

Variable	Unstandardised Coefficients		Standardised Coefficients Beta	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i> ²	<i>R</i>
	B	SE						
Physical Ill Health						7,36*	0,21	0,46
Constant	7,73	1,05	-	7,38	0,00			
Work-Life Balance	0,01	0,07	0,02	0,17	0,87			
Overload	0,15	0,11	0,14	1,35	0,19			
Security	-0,12	0,09	-0,11	-1,34	0,18			
Control	0,01	0,11	0,01	0,08	0,93			
Resources	0,24	0,10	0,28	2,37	0,01*			
Aspect of the Job	0,09	0,07	0,15	1,28	0,20			
Psychological (Un)Well-being						11,66*	0,31	0,56
Constant	7,36	1,35	—	5,15	0,00			
Work-Life Balance	0,05	0,11	0,04	0,45	0,66			
Overload	0,14	0,16	0,09	0,87	0,39			
Security	0,30	0,14	0,18	2,10	0,04*			
Control	0,15	0,17	0,10	0,85	0,40			
Resources	0,02	0,16	0,01	0,15	0,91			
Aspect of the Job	0,24	0,15	0,26	2,22	0,03*			
Organisational Commitment						11,12*	0,28	0,53
Constant	28,35	1,28		22,14	0,00			
Work-Life Balance	-0,10	0,09	-0,09	-1,12	0,25			
Overload	-0,10	0,13	-0,07	-0,74	0,46			
Security	-0,10	0,12	-0,07	-0,87	0,39			
Control	-0,57	0,14	-0,48	-4,06	0,00*			
Resources	0,16	0,13	0,14	-1,27	0,20			
Aspect of the Job	-0,04	0,08	-0,05	-0,43	0,67			
Individual Commitment						7,18*	0,20	0,45
Constant	24,74	1,15		21,52	0,00			
Work-Life Balance	-0,12	0,08	-0,13	-1,50	0,14			
Overload	-0,10	0,12	-0,08	-0,80	0,42			
Security	-0,22	0,10	-0,18	-2,13	0,04*			
Control	0,00	0,13	0,00	0,03	0,98			
Resources	-0,09	0,11	-0,09	-0,75	0,46			
Aspect of the Job	-0,07	0,08	-0,11	-0,96	0,34			

* $p < 0,05$

The results in Table 4 show that occupational stress predicts 21% of the variance in physical ill health. It is clear that stress because of lack of resources is the only statistically significant

predictor of physical ill health. The results in Table 4 also show that occupational stress predicts 31% of the variance in psychological (un)well-being. Among all the variables of interest, stress because of job insecurity and aspects of the job were statistically significant predictors of psychological (un)well-being.

Table 4 shows that occupational stress predicts 28% of the variance in organisational commitment. Stress due to control was the only statistically significant predictor of organisational commitment. The results from Table 4 further show that occupational stress predicts 20% of the variance in individual commitment to the organisation. Stress due to job security was the only statistically significant predictor of individual commitment.

DISCUSSION

The first objective of this study was to establish the internal consistency of the *ASSET* measuring instrument, and secondly, to identify and assess the impact of occupational stress on civil servants in the North West province of South Africa, and thirdly to determine the relationship between occupational stress, organisational commitment and ill health.

The results showed that the stressor dimensions were perceived as moderate to low among civil servants. Lack of support from colleagues/boss, colleagues not pulling their weight, unrealistic deadlines, unmanageable workloads, and stress due to lack of resources and communication stand out as the main sources of stress among the civil servants. Issues regarding job insecurity were identified as the least important sources of stress. On the other hand, the scores for the effects of stress (outcomes) were comparatively high for individual commitment and psychological unwell-being. Stress due to lack of job resources predicted physical ill health, and aspects of the job and security predicted psychological unwell-being. Stress due to control and security predicted organisational commitment and individual commitment respectively.

The second objective of the study was to identify and assess the impact of occupational stress on civil servants by studying how high or low their sten scores are on the respective stressors, and the resultant effect. Findings revealed that the most stressful variables are stressors relating to lack of support from colleagues/boss and colleagues not pulling their weight, unrealistic deadlines and unmanageable workloads, not being adequately trained for the job,

lack of opportunities for growth and not having the proper equipment. These prevailing conditions at the workplace therefore seem to account for these variables being perceived by civil servants as their main sources of stress. The findings seem to be consistent with that of Jackson and Rothmann (2006), who found working unsocial hours, not having proper and sufficient equipment and/or resources, and continuously doing the same work as very stressful. Schaufeli and Bakker (2004) also found job demands or workload as a source of stress/burnout, particularly among their female sample. It is widely known that especially the lower grades of civil servants are not properly trained and, in most cases, do not have the necessary resources. However, they are expected to deliver under these unfavourable conditions and are therefore bound to develop stress. The senior managerial class is indeed being highly remunerated and empowered far more than those at the lower echelons. Whether it is by omission or otherwise, government seems to be paying far greater attention to the development of the senior managerial class in comparison to the junior staff as a way of reducing high labour turnover among the senior managerial class.

It might also be important to discuss the extremely low sten scores on issues like “my job is not secure”, “my job is not permanent”, and “my job is likely to change in the future”. These items reported the lowest scores of all the occupational stressors in the study. This finding is contrary to the study of Lindström, Leino, Seitsamo and Tordtila (1997) among employees in the insurance industry who find their job very insecure. The civil servants under study, generally, perceived their jobs as secure, permanent, and not even likely to change in the future. This finding might therefore give an indication that civil servants in the study consider their jobs as secure. This could be explained by Government’s commitment to provide jobs to the people, the completion of the restructuring process in the public service hence all of the employees feeling settled, and the stringent labour laws that make it extremely difficult for employees of the public service to lose their jobs. These reasons could possibly explain why civil servants in this study perceive the above items as the lowest sources of stress.

The three stress outcomes expressed in the following items, namely “I feel valued and trusted by the organisation (organisational commitment)”, “I am proud of this organisation (individual commitment)”, and “Having panic attacks and constant irritability (being psychologically ill)” registered the highest sten scores (5, 7 and 7 respectively). The relatively high score on individual commitment is explained by the fact that the civil servants feel proud, feel valued and trusted and are even prepared to work long hours for their respective

departments. The relatively high score on psychological ill health is explained by their experience of panic and anxiety attacks, constant irritability and mood swings at the workplace. The findings of Coetzer and Rothmann (2006) and Jackson and Rothmann (2006) follow similar patterns where the highest scores are in the domain of the stress outcomes. The comparatively high scores (Table 2) on “I am proud of this organisation” and “I feel valued and trusted by the organisation” seem to suggest that commitment moderates the effect of occupational stress. This finding supports Hypothesis 2 (H²), which states that organisational commitment is a significant moderator of occupational stress. It also confirms the observation of Siu (2002) that the moderating effect of commitment protects individuals from the effect of stress, because it enables them to attach direction and meaning to their work.

The perceived sense of commitment on the part of the civil servants could be because job opportunities elsewhere, especially for the junior civil servants who are not highly skilled, are becoming fewer and fewer hence they have no alternative but to hold on to their jobs. The commitment displayed in the study could be likened to what Meyer et al. (2002) call continuance commitment, which is the perceived cost associated with leaving the organisation. This assertion is based on the fact that the majority of the items returned for analysis came from the junior and middle level staff. This study is therefore more representative of the junior/middle management.

The second objective of this study was to determine the relationship between occupational stressors on one hand, and organisational commitment and ill health on the other hand. Work life balance, (that is working unsocial hours, work interfering with personal and home life ie too much travelling), correlated strongly with the other stressors and the outcomes. Considering the relatively strong correlation between work-life balance and the other stressors and the outcome variables, one would expect work-life balance to also predict some of the other stress outcomes. It can be deduced that stressful conditions due to poor work-life balance might be expressed through other job stressors such as unpleasant physical work conditions or having no influence on the way performance targets are set.

Stress due to lack of proper resources tends to contribute to physical ill health of civil servants. Stress due to lack of resources on the job, which tends to create stress for the civil servants, also accounts for a sizeable variance in physical illnesses among the civil servants. Furthermore, lack of proper resources positively relates with physical ill health as is evident

in Table 4. As stated already, stress due to lack of resources, especially among the junior staff, is bound to lead to stress and consequently to illnesses such as headaches and other related pains.

Panic attacks and constant irritability or psychological illness among civil servants are predicted by outcomes such as “My job is not secure”, “My job is not permanent”, and “My job is likely to change in the future”. It is furthermore predicted by outcomes such as “Doing the same job for the next five to ten years”, “My work is dull and repetitive”, and “My work performance is closely monitored”. Jackson and Rothmann (2006) found that “Doing same job for the next five to ten years”, “My work is dull and repetitive”, and “My work performance is closely monitored” predicted physical ill health. A strong relationship was found between the feeling of job insecurity and the feeling of doing the same work for the next five to ten years, while a fairly strong relationship was found between the feeling of job insecurity and having panic attacks and constant irritability. Therefore, it is not surprising that the two stress variables should jointly predict panic attacks and constant irritability among civil servants.

Furthermore, the correlation between physical ill health and psychological ill health seems to suggest that the large proportion of civil servants suffering from psychological illness might also experience a negative impact on their physical health. It is also important to remark that since the civil servants’ scores on “My job is not secure” and “My job is not permanent” among others are very low, it can be said that these outcomes play an insignificant role in predicting panic attacks and constant irritability.

Organisational commitment is predicted by having little control over many aspects of the job, one’s ideas or suggestions not being accepted, and not being involved in decisions affecting one’s job. These aspects also explain a reasonably large proportion of the variance in organisational commitment. Having little control over many aspects of the job relates positively with having panic attacks and constant irritability (psychological ill health), but negatively with individual commitment. The large variance predicted by having little control over many aspects of the job and one’s ideas not being accepted suggests that the civil servants perceive this area as important to their state of commitment. “My job is not secure”, “My job is not permanent”, and “My job is likely to change in the future” predict individual commitment and explain a reasonable percentage of the variance in individual commitment,

while these items also correlate positively with ill health but negatively with commitment. Considering the fact that the civil servants perceived stress due to security as low, one would expect it to predict a higher proportion of commitment. This probably gives meaning to the assertion that their commitment could be termed continuance commitment.

The limitations of the present study include the use of a cross-sectional design, which made it difficult to prove causal relationships. Another limitation is the size of the sample, which has limitations in terms of the generalisation of the findings. Finally, it was evident that a large number of participants had problems understanding some of the more idiomatic items because the questionnaire was formulated in English while the respondents included Afrikaners, Indians and Black Africans from different linguistic backgrounds.

RECOMMENDATIONS

In view of the menacing nature of occupational stress, the findings of this study are important in order to improve the quality of service delivery of civil servants in South Africa. However, because this study was the first of its kind to validate the ASSET in the domain of civil servants in South Africa focusing only on civil servants in Mafikeng, it is important that all civil servants in South Africa be included in a future study to improve upon the validity of the current study. It is also recommended that a longitudinal study be undertaken to investigate the causality of relationships between variables.

The highest levels of stress were registered in work relationships, overload, and resources and communications and therefore it is important that these variables be properly managed at the workplace. As a primary intervention, management should ensure that supervisors provide support to their subordinates thus improving work relationships at the work place. Furthermore, management should educate the staff on time management and also ensure equitable distribution of work. It is believed that if these recommendations are put in place, it would assist in minimising the problem of overload. To further reduce stress among the civil servants, it is suggested that management should continuously keep the civil servants well resourced since lack of resources and communications have been identified as sources of stress.

Additionally, management should intensify awareness campaign on wellness and work life and public servants should be encouraged to take leave as a matter of policy. The study found that 11,2% of those sampled was not going on leave. Leave times could be used as relaxation periods to minimise stress and its related effects.

Future studies should endeavour to provide measuring instruments that would cater for all the different linguistic groups of the target population. This would help to minimise the problem of some respondents not understanding or misinterpreting some of the questions.

In conclusion, if the said management interventions recommended are adhered to, it would help deal with the generally high levels of psychological and physical ill health found among the civil servants. The findings seem to suggest that some of the civil servants perceive the public service as a source of commitment because they have no alternative. Such elements might tend to be rather unproductive and should be monitored closely.

REFERENCES

- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance, and normative commitment to the organization. *Journal of Occupational Psychology*, 63, 1–18.
- Berenson, M. L., & Levine, D. M. (1996). *Basic business statistics: Concepts and applications* (6th ed.). Newpark, NJ: Prentice Hall.
- Cartwright, S., & Cooper, C. L. (2002). *ASSET: An Organizational Stress Screening Tool - The management guide*. Manchester, UK: RCL Ltd.
- Carrell, M. R., Elbert, N. F., Hatfield, R. D., Grobber, P. A., Marx, M., & Van der Schyf (1998). *Human resources management in South Africa*. Pretoria, SA: Prentice Hall.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multiple-sample study. *Journal of Organizational Behaviour*, 25, 1–23.
- Clark, L. A., & Watson, D. (1995). Construct validity: Basic issues in objective scale development. *Psychological Assessment*, 7, 309–319.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multiple-sample study. *Journal of Organizational Behaviour*, 25, 1–23.
- Coetzer, W. J., & Rothmann, S. (2006). Occupational stress of employees in an insurance company. *South African Journal of Business Management*.
- Cohen, J. (1988). *Statistical power analysis for the behavioral science* (2nd ed.). Orlando CA: Academic press.
- Cooper, C. L., & Dewe, P. J. (2004). *Stress: A brief history*. Oxford, UK: Blackwell Publishing.
- Cooper, C. L., Kirkcaldy, B. D., & Brown, J. (1994). A model of job stress and physical health: The role of individual differences. *Personality and Individual Differences*, 16, 653–655.
- Cordes, C. L., & Dougherty, T. W. (1993). A review and integration of research on job burnout. *Academy of Management Review*, 18, 621–656.
- Cox, T., & Ferguson, E. (1991). Individual differences, stress, and coping. In C. L. Cooper & R. Payne (Eds). *Personality and stress: Individual differences in the stress process* (pp. 7-30). Chichester, UK: Wiley.

- Davey, G. C. L. (1994). Trait factors and ratings of controllability as predictors of worrying about significant life stressors, *Personality and Individual Differences*, 16, 379–384.
- Department of Labour (1997). *Workmen compensation fund*. Pretoria: Government printers.
- Entec Corp (2004). *Measuring company health*. Retrieved January 28, 2004, from the World Wide Web <http://www.measuringcompanyhealth.com/news.competitive.html>
- European Union Foundation 2000. For the improvement of living conditions. Retrieved May 1, 2007 from the World Wide Web: WWW.eurofound.eu/working/3wc35c2.htm.
- Ivancevich, J. M., & Matteson, M. T. (1990). *Organizational behavior and management* (2nd ed). Boston, MA: Irwin.
- Jackson, L. T. B., & Rothmann, S. (2005). An adapted model of burnout for educators in South Africa. *South African Journal of Education*, 25, 100–108.
- Jackson, L. T. B., & Rothmann, S. (2006). Occupational stress, organisational commitment and ill health of educators in the North West Province. *South African Journal of Education*, 26(1), 75–95.
- Jamal, M. (1999). The relationship of job stress and Type-A behaviour to employees' job satisfaction, organizational commitment, psychosomatic health problems, and turnover motivation. *Human Relations*, 43, 727–738.
- Jones, F., & Bright, J. (2001). *Stress: Myth, theory and research*. London, UK: Pearson Educational.
- Kahn, R. L., & Byosiére, P. (1992). Stress in organizations. In M. D. Dunnette (ed.), *Handbook of industrial and organizational psychology*. Chicago, IL: Rand McNally.
- Kilpatrick, A. N. (1999). *A new social contract for the new millennium*. Retrieved January 1, 2004, from the World Wide Web: <http://www.pamij.com/9942kilpatick.html>
- Kotzé, F. (2002). *Psychological burnout a big problem in South Africa*. Retrieved on April 22, 2003 from the World Wide Web: <http://www.puk.ac.za/nuus/eng.news24htm>.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Landsbergis, P. A; Schurman, S. J; Israel, B. A; Schnall, P. L; Hugentobler, M. K; Cahill, J. And Baker, D. (1993). Job stress and heart disease: Evidence and strategies for prevention. Retrieved April 26, 2006, from World Wide Web://www.workhealth.org/prevention/prjsevd.html.
- Lindström, K., Leino, T., Seitsamo, J., & Tordtila, L. (1997). A longitudinal study of work characteristics and health complaints among insurance employees in VTD work. *International Journal of Human-Computer interaction*, 9(4), 343–368.

- Martocchio, J. J., & O'Leary, A. M. (1989). Sex differences in occupational stress: A meta-analytic view. *Journal of Applied Psychology*, 74, 495–501.
- Mead, P. (1998). Workplace wellness makes cents. *Peoples Dynamics*, 46–52.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behaviour* 61, 20–52.
- MRA (Market researchers & analysts) (2002). Retrieved October 7, 2002, from the World Wide Web: <http://www.mr-a.com/research design.html>
- Mulder, N. (2002). Cops too stressed to work. Retrieved on May 6, 2006, from the World Wide Web: <http://www.news24.com/News24/archive/0,2-1659-1270679,00.html>
- Norušis, M. J. (1994). *SPSS professional statistics 6.1*. Chicago: SPSS.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Olwagen, J. (1993). IPM symposium on post traumatic stress held on 24th August. Retrieved on October 9, 2002, from the World Wide Web: <http://memberss.freemail.absa.co.za>
- PANDA (2002). *Basics of statistical analysis*. Retrieved on May 7, 2002, from the World Wide Web: <http://www.tulane.edu/-panda2/sidebar/stats.html>
- Mlambo-Ngcuka, P. (2006). Skills revolution: Key to growth bid. *Business Day*, 1–2, Tuesday, March 28.
- Robbins, S. P. (2001). *Organisational behaviour*. Cape Town, SA: Pearson Education.
- Rothmann, S. (2005). *Analysis of 14 different occupations and organisations in South Africa*. Unpublished Manuscript.
- Sauter, S. L., & Murphy, L. R. (1995). The changing face of work and stress. In S. L. Sauter & L. R. Murphy (Eds.), *Organisational risk factors for job stress* (pp. 1–6). Washington, DC: American Psychological Association.
- Siu, O. L. (2002). Occupational stressors and well-being among Chinese employees: the role of organizational commitment. *Applied Psychology: An International Review*, 51, 527–544.
- Schaufeli, W. B., & Bakker, A. B. (2004) Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25, 1–23.
- Shaughnessy, J. J., & Zechmeister, E. B. (1997). *Research methods in psychology* (4th ed.). New York: McGraw-Hill.

- Siu, O., Spector, P. E., Cooper, C. L., Lu, L., & Yu, S. (2002). Managerial stress in Greater China: The direct and moderator effects of coping strategies and work locus of control. *Applied psychology: An international review*, 51 (4), 608–632.
- South African Department of Labour (2005). Hazardous working conditions fall under ILO. News release. Retrieved May 15, 2006, From the World Wide Web: <http://www.labour.gov.za/media/statement.jsp>.
- SSPS Inc. (2003). SPSS 12.0 for windows. Chicago, IL: Author.
- State of the Nation Address of the President of South Africa, Thabo Mbeki, Joint Sitting of the third democratic Parliament, Cape Town. 11 February 2005. Cape Town: Parliamentary hanzard/Government online, www.gov.za.
- Storm, K., & Rothmann, S. (2005). *Burnout and work engagement among South African Police Service*. Manuscript submitted for publication.
- Suliman, A. M., & Iles, P. A. (2000). The multi-dimensional nature of organizational commitment in a non-western context. *Journal of Management Development*, 19, 17–82.
- Sunday Times Business Times (2004). *Don't stress, get a sick note*. February 1.
- Taljaard, L. (2005). A wake-up call. *People Dynamics*, 10–11.
- Tasho, W., Jordan, W., & Robertson, I. (2005). *Case study: Establishing the business case for investing in stress prevention activities and evaluating their impact on sickness absence levels*. London: Health and Safety Executive.
- Tytherleigh, M. Y. (2003). What employers may learn from English higher education institutions: A fortigenic approach to occupational stress. *SA Journal of Industrial Psychology*, 29, 101–106.
- United Nations Organisation (2005). *Unlocking the human potential for public sector performance: World public sector report*.
- Van der Merwe, A. (2003). Werkers breek onder stres. *Finansies en Tegniek*, 12–15.
- Van Dick, R., & Wagner, U. (2001). Stress and strain in teaching: A structural equation approach. *British Journal of Educational Psychology*, 71, 43–259.
- Wilson, R. (1999). *Civil service reform report to the Prime Minister*. London, UK: Cabinet Office.
- Wright, L. A., & Smye, M. D. (1996). *Corporate abuse: How lean and mean robs people and profits*. New York: Macmillan

CHAPTER 4

ARTICLE 3

A STRUCTURAL MODEL OF WORK WELLNESS FOR CIVIL SERVANTS

ABSTRACT

The objectives of this study were to establish the validity and internal consistency of constructs in a model of work wellness, and to test a structural model of the relationship between job demands, job resources, burnout, engagement, ill health, and organisational commitment. A cross-sectional survey design was used. The Job Demands-Resources Scale (JDRS), Maslach Burnout Inventory-General Survey (MBI-GS), Utrecht Work Engagement Scale (UWES), a Health Scale and an Organisational Commitment Scale were administered. An accidental sample ($N=207$) was drawn from civil servants of the North West Province of South Africa. Through structural equation modelling it was found that excessive job demands and lack of job resources lead to burnout and ill health, while the availability of job resources lead to work engagement and organisational commitment.

OPSOMMING

Die doelwitte van hierdie studie was om die geldigheid en interne konsekwentheid van konstrunkte in 'n model van werkswelstand te bepaal en om 'n strukturele model van die verhouding tussen werkeise, werkhulpbronne, uitbranding, begeestering, swak gesondheid en organisasieverbondenheid te bepaal. 'n Dwarssnit opname-ontwerp is gebruik. Die Werkeise-werkhulpbronnenskaal (JDRS), Maslach Uitbrandingsvraelys – Algemene Opname (MBI-GS), Utrecht Werkbegeesteringskaal (UWES), 'n Gesondheidskaal en 'n Organisasieverbondenheidskaal is afgeneem. 'n Gerieflikheidssteekproef ($N=207$) is van staatsdiensamptenare van die Noordwes-provinsie in Suid-Afrika getrek. Daar is deur middel van strukturele vergelykingsmodellering bevind dat uitermate hoë werkeise en 'n tekort aan werkhulpbronne tot uitbranding en swak gesondheid lei, terwyl die beskikbaarheid van werkhulpbronne tot werkbegeestering en organisasieverbondenheid lei.

The dynamics of human development and globalisation, the rate of change and innovation in the world of work, the ongoing efforts to improve service delivery and productivity, and the increasing complexity of rolling out the machinery of state in response to these challenges will continue to place burdens on government ingenuity, government structures and people within those structures (SAMDI, 2005). Furthermore, workers are faced with highly demanding work environments characterised by an increased workload, role conflict, decreased job control, and role ambiguity (Low, Cravens, Grant, & Moncrief, 2001). Maslach and Leiter (1997) have observed that the demanding work environment of modern life tend to exhaust employees, both physically and spiritually.

In the coming decade, South Africa's efforts in respect of the above challenges will revolve around efforts to improve the system of intergovernmental relations, the integrity, credibility and efficacy of the internal systems of individual government institutions, and the relevance and productivity of human capital. Therefore, civil servants are increasingly confronted with a new range of demands as public policy and governance become complex and contested. In addition to increasingly specialised knowledge and skills, the civil service also needs individuals whose norms, values, attitudes, and orientations are consistent with the objectives of government (SAMDI, 2005). These tremendous demands (transformation, service delivery and ensuring the efficacy of the internal systems of the various government institutions) on the capacity of the civil service will inevitably lead to the development of staff burnout. Hobfoll and Freedy (1993) remarked that continuous demands on individuals without providing proper resources cause such individuals to experience burnout.

Burnout and work engagement are regarded as the two components of employee wellness (Schaufeli & Bakker, 2004). Barkhuizen, Rothmann, and Van de Vijver (in press) have identified two underlying dimensions of work wellness namely, activation, ranging from exhaustion to vigour, and identification, ranging from mental distance to dedication. These two dimensions could therefore be combined in a model of work-related well-being (Schaufeli & Bakker, 2004).

Burnout and work engagement

Burnout is generally used to describe a state of emotional exhaustion in which the person involved experiences feelings of being depleted of his/her emotional resources (Maslach & Leiter, 1997). According to Schaufeli and Enzmann (1998), burnout is the unsuccessful succession of continued efforts to prevent the impact of environmental stressors, which results in a general breakdown of resources, and consequently to burnout. They further contend that it leads to depletion of emotional resources and loss of motivation. According to Potter (1998), burnout also leads to overreaction, intense hostility, and poor communication with colleagues. Although Maslach and Jackson (1986, p.1) defined burnout as “a syndrome of emotional exhaustion and cynicism that occurs among individuals who do people work of some kind” such as teachers, nurses, physicians and social workers, it has now become clear to researchers that workers in almost any occupation can develop burnout (Schaufeli & Enzmann, 1998). This finding clearly supports the view that burnout is also a problem that exists outside the human services (Maslach & Leiter, 1997).

Although civil servants operate in a demanding work environment that causes them to experience stress and burnout, some employees do manage to transform their taxing environment to one that is inspiring and productive. Leon, Bhunu, and Kenyon (2001) conducted a study among facility managers and found that despite the various problems they experienced, some of the facility managers managed to change their debilitating environments to places that are productive and fun to work in. Furthermore, a study on mid-level managers in the Department of Health found that despite the numerous frustrations, hard work, and low sense of personal accomplishment, many managers still expressed excitement about the processes they were taking part in and found the processes both challenging and very beneficial (Penn-Kekana, Schneider, Matsebula, Chabikuli, Blaauw & Gilson, 2001). Schaufeli and Bakker’s (2001) study has also found that some employees, notwithstanding the work demands of the workplace, still take pleasure in their work and were able to deal with their job demands successfully. Studies such as these led Rothmann (2003) to pose the question whether there is a possibility that there are engaged workers who show energy, dedication, identification with and absorption in their work, a behaviour that is contrary to burnout.

Work engagement is defined as an energetic state in which an employee is committed to effective and excellent performance at work (Schutte, Toppinen, Kalimo, & Schaufeli, 2000). According to Maslach and Leiter (1997), burnout and work engagement will be strongly negatively correlated. Jackson, Rothmann, and Van de Vijver (2006) and Coetzer and Rothmann (2006) found relatively strong negative correlations between burnout and engagement. It might therefore be necessary that this model of work wellness be tested within the South African civil service, especially in view of the observation by Porter, Kraft, and Claycomb (2004) that wellness will have both individual and organisational consequences.

Job demands and job resources

Any discussion of work wellness in relation to job demands and job resources would not be complete without reference to the models of well-being developed by Schaufeli and Bakker (2004) and Demerouti, Bakker, Nachreiner, and Schaufeli (2000). Demerouti, Bakker, Nachreiner (2000) developed the Job Demands- Resources model (JD-R) and confirmed that job demands are related to exhaustion, while a lack of job resources are associated with disengagement. Schaufeli and Bakker (2004) extended the JD-R model by including work engagement, and by adding indicators for health impairment and organisational withdrawal in the Comprehensive Burnout and Work Engagement (COBE) Model.

The Job Demands-Resources model (JD-R) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) assumes that two fundamental psychological processes, namely the energetic and motivational process, influence burnout. In the energetic process, high job demands lead to exhaustion, and this process, according to Hockey's (1997) model of compensatory control, links job demands to health problems through burnout. The motivational process links job resources to organisational outcomes like turnover intention through engagement (Schaufeli & Bakker, 2004). Thus, a lack of job resources leads to disengagement. Job resources may play either an intrinsic or an extrinsic motivational role. In either case, the outcome is positive resulting in engagement. It would thus be reasonable to assume that engaged workers have a low tendency to leave the organisation (Houkes, Jansen, De Jonge, & Nijhuis, 2001). According to Schaufeli and Bakker (2004), engagement is expected to mediate the relationship between job resources and (low) intention to leave.

Schaufeli and Bakker (2004) state that there are generally two sets of variables in any kind of job, namely job demands and job resources. Job demands are those physical, psychological, social, or organisational aspects of the job that call for sustained physical and/or cognitive or emotional effort (Cooper, Dewe, & O'Driscoll, 2001; Schaufeli & Bakker, 2004). Although job demands are not always negative, they may turn into job stressors when meeting those demands requires high effort, and are thus associated with high costs that elicit negative responses like depression, anxiety, or burnout, which may consequently lead to physical and psychological ill health (Schaufeli & Bakker, 2004). Job demands could be classified as either quantitative or qualitative demands. Quantitative demands or work overload refer to the amount of work required and the time apportioned to the work, while qualitative demands concern employees' affective reactions to their jobs (Cooper, Dewe, & O' Driscoll, 2001; Schaufeli & Bakker, 2004).

Job resources refer to the physical, psychological, social or organisational aspects of the job that may reduce job demands and the related physiological and psychological costs. Job resources also assist in attaining organisational goals and stimulating personal growth, learning and development (Schaufeli & Bakker, 2004). In this study, job resources are included at the interpersonal level (support from colleagues), organisational level (relationship with supervisor, information and communication), job level (growth opportunities) and advancement (career opportunities and pay). According to May, Gilson, and Harter (2004), job resources tend to create psychological meaningfulness and safety for employees, which cause them to become engaged in their work. Consequently, according to Jackson, Rothmann and van de Vijver (2006), work engagement may be considered a precursor to organisational commitment, because people who experience deep engagement in their jobs identify with their organisations.

Maslach, Jackson, and Leiter (1986) are of the view that the presence of some specific demands like work overload and personal conflicts, and the absence of specific resources such as control coping, social support, autonomy, and decision-making involvement predict burnout. This in turn is expected to lead to various negative outcomes such as physical illness, absenteeism, turnover, and diminished organisational commitment. The view of Maslach, Jackson, and Leiter (1996) is supported in the literature by the State President, Thabo Mbeki, in his 2001 State of the Nation address when he places enormous responsibility on the public service, calling upon the service to see to the successful implementation of government

priorities. These demands tend to cause stress and burnout in public servants (SAMDI, 2005). Despite these demands, there is evidence that the public service does not have corresponding resources to cope with these demands, hence the negative outcomes as identified by Maslach, Jackson, and Leiter (1986).

Ill health and organisational commitment

Ill health is an outcome of stress, which can be used to ascertain whether workplace pressures have positive and motivating or negative and damaging effects (Jackson & Rothmann, 2005). Job demands and lack of resources could lead to ill health through distress. Winefield, Gillespie, Stough, Dua, & Hapuararchchi (2002) found in their study that three quarters of their study sample suffered from physical ill health showing signs like headaches, back and neck pains, and constant muscle pains. The study of Barkhuizen, Rothmann, and Van de Vijver (in press) found that burnout mediated the relationship between job demands and ill health. The implication of this is that civil servants who might experience excessive job demands might develop high levels of burnout that would consequently lead to ill health. Cartwright and Cooper (2002) are, however, of the view that poor health may not necessarily be suggestive of workplace stress, since some people may experience ill health because they do not lead a healthy lifestyle. According to Meyer, Stanley, Herscovitch, and Topolnytsky (2002), some researchers argue that affective commitment can cushion the negative impact of work stressors on employee health and well-being, while others are of the view that committed employees might experience more negative reactions to such stressors than those who are less committed.

It is evident from the literature that ill health has two dimensions, namely a physical and a psychological dimension. The physical dimension comprises symptoms like headaches, backaches and neck pains (Winefield, Gillespie, Stough, Dua, & Hapuararchchi, 2002), while the psychological dimension comprises symptoms like panic attacks, irritability, and mood swings (Jackson & Rothmann, 2005). Job demands and lack of resources could lead to burnout, while burnout would lead to ill health. Therefore, burnout is said to be a mediator between job demands and resources on the one hand, and ill health on the other hand (Barkhuizen, Rothmann, & Van de Vijver, in press).

Bauer and Green (1998) defined organisational commitment as the psychological attachment of workers to their organisations. Robbins (2001) defined organisational commitment as a state in which an employee identifies with a particular organisation and its goals, wishes to maintain membership in the organisation, and has a feeling of loyalty to the organisation. Siu (2002) is of the view that organisational commitment has been recognised as a significant moderator of work stress and that it was associated with most of the physical and psychological outcomes among employees as well as the moderating effects on the stressor-health relationship. Mathieu and Zajac (1990) found that organisational commitment positively relates to desirable work outcomes like motivation and performance, and job satisfaction, while it relates negatively to absenteeism and turnover.

Allen and Meyer (1990), Meyer, Stanley, Herscovitch, and Topolnytsky (2002) and Siu (2002) adopted a more comprehensive perspective to organisational commitment by identifying three dimensions, namely affective, continuance and normative commitment. Affective commitment is explained as an emotional attachment to, identification with, and involvement in the organisation. Continuance commitment is the perceived cost associated with leaving the organisation, while normative commitment mirrors a perceived responsibility to remain in the organisation (Meyer et al., 2002).

The variables responsible for affective commitment are personal characteristics and work experiences. Continuance commitment is caused by personal characteristics, alternatives and investments. Normative commitment is developed by personal characteristics, socialisation, experiences and organisational investments (Meyer et al., 2002). On the right side of their model are variables considered to be consequences of commitment. An important underlying principle for the development of the Three-Component Model was the belief that all three forms of commitment relate negatively to turnover, and relate differently to measures of other work-relevant behaviours like attendance, in-role performance, and organisational citizenship behaviour (OCB). According to Meyer et al. (2002), affective commitment is expected to have the strongest positive relation, followed by normative commitment, while continuance commitment is expected to be unrelated, or related negatively, to these desirable work behaviours.

Suliman and Iles (2000) found that affective committed employees are more likely to remain in an organisation and contribute to the success of the organisation than continuance

committed individuals. Siu (2002) observed that organisational commitment relate to most of the physical and psychological outcomes among workers, and to the moderating effects on the stressor-health relationship. Siu (2002) is therefore of the view that the moderating effect of commitment guards workers against the negative effect of work pressure, because it allows them to attach direction and meaning to their work. Organisational commitment may also provide workers with stability, and a feeling of belonging or the vice versa (Siu, 2002). It could be inferred that organisational commitment could moderate the experience of occupational stress and burnout on health outcomes.

It is from this setting that this study seeks to develop a structural model of work wellness for the South African civil service by integrating burnout and work engagement, and the effects of job resources and job demands on this association between burnout and work engagement. This is especially important for the fact that there is lack of a causal model of work wellness, and lack of valid and standardised instruments for measuring burnout and engagement for the South African civil service.

In summary, the literature review has established that job resources and job demands are negatively correlated, and that job resources are negatively correlated with burnout. Furthermore, it was found in the literature that job demands would lead to health problems through burnout, and that job resources would lead to organisational outcomes through engagement.

The above discussion leads to the following hypotheses:

Hypothesis 1: High job demands and a lack of resources lead to ill health via burnout.

Hypothesis: Job resources lead to organisational commitment via work engagement.

METHOD

Research design

A cross-sectional survey design was used whereby the data was collected once off (Burns & Grove, 1993).

Participants

A study population ($N=500$) was targeted through accidental sampling from a population of Mafikeng civil servants of the North West province in South Africa. A total of 340 questionnaires were returned, of which only 207 could be used. Table 1 presents some of the characteristics of the participants. The sample of the study consisted predominantly of blacks (94,4 %) with a gender composition of females (52,5%) and males (46,5%), while 48,3% of the sample were married and 34,3% were single. The majority (51,0%) seem to be satisfied with their current relationship, be it married, single or otherwise. In terms of age, the majority of respondents (33,5%) were between 41-57 years of age. With regard to the educational level, the following distribution was found: grade 12 certificate (31,0%), 3-year degree (33,5%), honours degree (25,6%), master's and doctoral degrees (9,9%).

It is also worthwhile mentioning that 37,9% of the sample never had any promotion during the past five years, and that 45,2% had only one promotion during the same period. A sizeable majority (93,2%) are permanently employed, and 48,1% of the sample always take their annual leave compared to 40,8% who sometimes use their annual leave, and 11,2% who never take their annual leave. In the area of lifestyle, only 9,7% of the participants find time to relax, and 8,9% do manage an "ideal" exercise. Due to the missing values, the frequencies and the percentages of some of the items did not add up to 100.

Table 1
Characteristics of the Participants

Item	Category	Frequency	Percentage
Gender	Male	94	46,5
	Female	108	53,5
Marital status	Single	70	34,3
	Engaged	10	4,9
	Married	100	48,3
	Divorced	24	11,6
Race	Blacks	186	90,4
	Whites	19	9,3
	Indians	2	0,3
Age	>34	67	33,5
	>40	66	33,0
	>57	67	33,5
Tenure	Permanent	192	93,2
	Temporary	9	4,4
	Fixed term	5	2,4
Years at current position	0 – 1	58	28,4
	1,1 – 4	80	39,3
	4,1 – 10	59	28,9
	10,1 – 16	7	3,5
Education	Grade 12	63	31,0
	3-year degree	68	33,5
	Postgraduate	72	35,5
Satisfaction with relationship	Very satisfied	6	3,1
	Dissatisfied	6	3,1
	Neither of the above	37	19,3
	Satisfied	98	51,0
	Very satisfied	45	23,4

Procedure

Permission to conduct the study was obtained from the North West Provincial Public Service Commission. Questionnaires were then given to the Employee Assistant Unit in the office of the Premier who distributed the questionnaires to their respective unit managers in the various

departments. The questionnaires were consequently administered to an accidental sample target group in their respective departments. The completed questionnaires were returned to the respective unit managers, whereupon they were sent to the Employee Assistant Programme Director in the office of the Premier.

Measuring battery

The following measuring instruments were used in this study:

A *biographical questionnaire* was used to solicit information on the biographical characteristics of the research subjects. Information gathered included name, gender, age, educational qualification, salary, position, number of years with the department, number of years at current position, frequency of promotion, type and amount of support, marital status, population group and lifestyle.

The *Maslach Burnout Inventory-General Survey (MBI-GS)* (Maslach, Jackson, & Leiter, 1996) was used to measure burnout. For the purposes of this study, four subscales of the MBI-GS was used, thereby providing a four-dimensional viewpoint of burnout. Exhaustion (EX) (five items - "I feel emotionally drained from my work"), Cynicism (CY) (five items - "I have become more callous toward people since I took this job"), Professional Efficacy (PE) (six items - "In my opinion, I am good at my work"), and Cognitive Weariness (CW) (five items - "I find it difficult to focus my attention on my job"). Cronbach's alpha scores reported by Maslach et al. (1996) ranged from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism, and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism), and 0,67 (Professional Efficacy) (Maslach et al., 1996). The items were scored on a seven-point frequency rating scale ranging from 0 (*never*) to 6 (*daily*). High scores on Exhaustion and Cynicism, and low scores on Professional Efficacy are suggestive of burnout. A number of studies have been undertaken in South Africa establishing the reliability of the MBI-GS from a three-dimensional perspective. These studies, including the Cronbach's Alpha scores in Exhaustion, Cynicism and Professional Efficacy, are: Buitendach and Van Zyl (2004): 0,85, 0,70, 0,86; Campbell and Rothmann (2005): 0,85, 0,72, 0,68; Jackson and Rothmann (2005): 0,79, 0,74, 0,73; and Rothmann (2004): 0,80, 0,84, 0,84.

The *Utrecht Work Engagement Scale* (UWES) was constructed by Schaufeli, Salanova, González-Roma, and Bakker (2002) and is used to measure the engagement of research subjects. This scale comprises three subscales, namely vigour, dedication and absorption, but for the purposes of this study, the focus was on vigour and dedication. The UWES is conceptually considered as the opposite of burnout. It is scored on a seven-point frequency rating scale, varying from 0 (*never*) to 6 (*daily*) and includes items such as “Time flies when I am at work” and “My job inspires me”. The alpha coefficients for the three subscales varied between 0,68 and 0,91. Based on the findings of Storm and Rothmann (2003), the MBI-GS and UWES items have been mixed and combined into a single questionnaire comprising of 42 items. It is hoped that this would ensure a more valid response from subjects. Studies that have found acceptable Cronbach’s alpha scores as per the guideline of 0,70 (Nunnally & Bernstein, 1994) for the three-dimensional work engagement scale in South Africa include: Storm and Rothmann (2003): 0,78, 0,89, 0,78; Naudé (2003): 0,70, 0,83, 0,79; and Coetzer and Rothmann (2006): 0,80, 0,87, 0,69 for Vigour, Dedication and Absorption respectively.

The *Job Demands-Resources Scale* (JD-RS), which is referred to as perceptions of your job in this study, is intended to measure job demands and job resources of the respondents. The scale consists of 37 items. Various job demands and job resources in the civil service were identified and measured on a six-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The dimensions of this scale include working hours, workload, relationship with supervisor, autonomy in the job, opportunities, communication channels, remuneration and career paths. The validity of the scale will be established. Jackson, Rothmann, and Van de Vijver (2006) found alpha coefficient scores of 0,73, 0,88, 0,81 and 0,75 for overload, organisational support, growth opportunities and advancement respectively.

The *Health subscales of the ASSET* (An Organizational Stress Screening Evaluation Tool) were developed by Cartwright and Cooper (2002) to measure physical and psychological ill health of their research subjects. The subscales in this study consist of 27 items, categorised into two dimensions, namely Physical Health and Psychological Well-being, scored on a scale ranging from 1 (*never*) to 4 (*often*). The Physical Health items focus on physical indicators of stress and the subscales of Psychological Well-being are symptoms of stress-induced mental ill health. Johnson and Cooper (2003) found a Guttman split-half reliability coefficient for the Physical and Psychological Health dimensions of 0,74 and 0,91 respectively. Jackson, Rothmann, and Van de Vijver (2006) registered acceptable alpha scores of 0,82 and 0,90 for

Physical (ill) Health and Psychological (ill) Health respectively. Coetzer and Rothmann (2006) and Jackson and Rothmann (2006) obtained alpha coefficient scores of 0,79 and 0,89 for Physical Health and Psychological Health respectively while Jackson, Rothmann, and Van de Vijver (2006) obtained scores of 0,82 and 0,90 for the respective scales.

The *Organizational Commitment subscales of the ASSET* consist of nine items, scored on a scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The items include items such as “I feel valued and trusted by the organisation” and “I am proud of this organisation”. These items are meant to measure a respondent’s commitment to his/her department. Jackson, Rothmann, and Van de Vijver (2006) registered an alpha score of 0,88 on organisational commitment, Jackson and Rothmann (2006) recorded 0,83 while Buitendach and Moeletsi (2004) obtained 0,84. Barkhuizen, Rothmann, and Van de Vijver (in press) carried out a principal component analysis on the nine items of the organisational commitment subscale of the *ASSET* and found a one-factor solution that explained 55,55% of the variance. The item loadings of the factor varied from 0,55 to 0,87.

Statistical analysis

The main statistical package used in this study was the SPSS program (SPSS Inc., 2003). Cronbach’s alpha coefficients were used to assess the reliability of the measuring instruments (Berenson & Levine, 1996; Clark & Watson, 1995; Norušis, 1994), namely the MBI-GS, UWES, Job Characteristics Scale, and the Health and Organisational Commitment questionnaires. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) were used to analyse the data.

Principal components extraction was firstly used to estimate the number of factors, presence of outliers, the maximum portion of the variance present, and factorability of the correlation matrices (Bertram, 2002). Principal factor extraction with varimax rotation was also performed on the measuring instruments (MBI-GS, UWES, Job Demands-Resources Scale, Health subscales, and Organisational Commitment subscales). The rotation of the reference axes of the factor solution simplifies the factor structure, and helps achieve a more meaningful and interpretable solution (Statistical Services, 1995; StatSoft, 2003). To complement the above two methods, principal component analysis with a direct oblimin rotation was used. This method allows factors to be correlated with each other (Bertram,

2002; Statistical Services, 1995). This method was used to extract the factor structure where correlations higher than 0,30 were found (Storm & Rothmann, 2003).

The level of statistical significance was set at $p \leq 0,05$. This, according to P.A.N.D.A (2002), is the probability that you would find the answer you have (the difference in means) given that the null hypothesis is true. Effect sizes were used to decide on the significance of the findings. Pearson product-moment correlation coefficients were used to indicate the linear relationships between the variables of interest (Burnout, Work Engagement, and the Job Demands-Job Resources dimensions). A cut-off point of 0,30 (medium effect) (Cohen, 1988) was set for the practical significance of the correlation coefficients.

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1999) were used to test the factorial models for the MBI-GS and UWES, and to test a structural model of work wellness.

RESULTS

The objectives of this study were firstly to establish the validity and internal consistency of constructs in a model of work wellness, and secondly to test a structural model of the relationship between job demands, job resources, burnout, engagement, ill health, and organisational commitment. The third objective was to establish whether job demands could lead to ill health via burnout, and job resources could lead to organisational commitment through engagement.

Table 2 shows the descriptive statistics (mean, standard deviation, skewness) and Cronbach's alpha coefficients of Exhaustion, Cynicism, Professional Efficacy, Cognitive Weariness, Vigour, Dedication, Organisational Support, Growth, Advancement, Support, Demands, Insecurity, Physical Ill Health, Psychological Unwell-being, Organisational Commitment and Individual Commitment. The results in Table 2 show that all the scores on the subscales are normally distributed except for Professional Efficacy and Individual Commitment.

Table 2

Descriptive Statistics and Cronbach's Alpha Coefficients of the Measuring Instruments

Item	Mean	SD	Skewness	Kurtosis	α
Exhaustion	10,62	6,41	0,66	0,34	0,70
Cynicism	7,24	5,88	0,90	0,26	0,74
Vigour	25,00	7,51	-0,76	0,11	0,78
Dedication	22,27	6,88	-0,96	0,13	0,84
Organisational support	34,70	8,94	-0,21	-0,66	0,72
Growth opportunities	28,81	6,35	-0,29	-0,40	0,89
Advancement	13,66	4,18	0,33	-0,61	0,86
Social support	18,24	3,55	-0,34	0,00	0,78
Job demands	20,36	4,27	0,47	-0,02	0,75
Job insecurity	7,87	3,03	-0,19	-1,19	0,87
Physical ill health	13,06	4,41	0,16	-0,62	0,84
Psychological unwell-being	19,76	6,78	0,46	-0,31	0,90
Organisational commitment	19,6	5,84	-0,53	-0,37	0,85
Individual commitment	17,64	4,91	-0,20	1,01	0,87

Table 2 shows that Individual Commitment is positively skewed. The descriptive statistics in Table 2 show that the Cronbach's alpha scores of 0,70 to 0,90 for the various dimensions are acceptable since they comply with the minimum guideline of 0,70, as set by Nunnally and Bernstein (1994).

Furthermore, a factor analysis was carried out on the Job Demands-Resources Scales (JDRS). The results appear in Table 3. Table 3 shows variables as they load on their respective factors and communalities. The variables are grouped into their respective factor structures, and arranged numerically in their factor structures to facilitate easy reference.

As can be seen from Table 3, the higher the factor loading and its corresponding (h^2) score, the better the factor structure. The high scores, suggest that the items were well captured leaving no hidden items in the data. In all, six internally consistent factors were extracted. The cut-off point for the inclusion of a variable for the interpretation of a factor was 0,41. Two of the 48 variables did not load on any of the factors.

Table 3

Factor Analyses of the Job Demands-Resources Scale

Item description	Factor						<i>h</i> ²
	1	2	3	4	5	6	
Can you count on your supervisor when you come across difficulties?	0,54	0,24	0,12	0,31	-0,36	0,13	0,73
Do you get on well with your supervisor?	0,58	0,21	0,08	0,28	-0,46	-0,10	0,79
Do you feel appreciated by your supervisor?	0,71	0,11	0,11	0,23	-0,28	0,01	0,79
Do you know what your direct supervisor thinks of your performance?	0,72	0,05	0,06	0,14	-0,14	0,07	0,67
Do you receive sufficient information on the purpose of your work?	0,62	0,17	0,17	0,15	0,02	-0,12	0,66
Do you receive sufficient information on the result of your work?	0,77	0,21	-0,01	-0,03	0,04	-0,15	0,74
Does your supervisor inform you how well you are doing your work?	0,75	-0,04	0,12	-0,01	-0,13	-0,07	0,75
Are you kept adequately up to date about important issues in your department?	0,73	0,18	0,14	0,09	0,04	-0,00	0,66
Is the decision-making process of your department clear to you?	0,68	0,26	0,22	-0,03	-0,02	-0,11	0,67
Are you clear to whom you should direct specific problems you may have?	0,61	0,34	0,08	-0,01	0,05	0,10	0,65
Can you discuss work problems with your direct supervisor?	0,71	0,16	0,01	0,30	-0,12	0,09	0,68
Can you participate in decisions about the nature of your work?	0,74	0,24	-0,06	0,20	0,02	-0,04	0,68
Do you have a direct influence on your department's decisions?	0,53	0,13	0,27	-0,13	0,11	0,21	0,65
Does your work make sufficient demands on all your skills and capacities?	-0,07	0,63	-0,11	0,12	0,13	0,22	0,73
Do you have enough variety in your work?	0,09	0,69	0,05	0,06	0,12	0,08	0,73
Does your job offer you opportunities for personal growth and development?	0,27	0,69	0,31	-0,13	-0,13	0,09	0,76
Does your job give you the feeling that you can achieve something?	0,28	0,80	0,13	0,11	0,01	0,09	0,78
Does your job offer you the possibility of independent thought and action?	0,32	0,72	0,12	0,12	-0,01	-0,09	0,69
Do you have freedom in carrying out your work?	0,49	0,58	0,15	0,03	-0,70	-0,09	0,68
Do you have influence in the planning of your work activities?	0,50	0,53	0,12	0,26	-0,04	-0,13	0,75
Can you participate in deciding when a job must be completed?	0,36	0,59	0,03	0,25	-0,06	0,05	0,68
Do you know exactly what other people expect of you in your work?	0,27	0,58	0,08	0,26	-0,16	-0,05	0,57
Do you know exactly what your responsibilities are and what you are not responsible for?	0,34	0,53	-0,12	0,36	-0,00	-0,01	0,65
Do you think your organisation pays a good salary?	0,15	0,02	0,77	0,15	-0,14	0,04	0,72
Can you live comfortably on your salary?	0,08	0,15	0,84	0,18	0,03	-0,06	0,84
Do you think you are paid enough for the work that you do?	0,11	-0,09	0,88	0,08	-0,10	-0,01	0,84
Does your job offer you the possibility to progress financially?	0,17	0,02	0,78	0,03	-0,02	-0,02	0,73
Does your organisation give you opportunities to follow training courses?	0,40	0,15	0,57	-0,10	0,02	0,02	0,69
Does your job give you opportunities to be promoted?	-0,02	0,25	0,57	-0,24	-0,16	-0,02	0,70
Can you count on your colleagues when faced with difficulties in your job?	0,36	0,37	0,05	0,44	-0,26	0,08	0,64
If necessary, can you ask your colleague for help?	0,28	0,27	0,11	0,44	-0,30	0,37	0,59
Do you get on well with your colleagues?	0,30	0,37	-0,05	0,46	-0,30	-0,18	0,64
Do you have contact with colleagues as part of your work?	0,25	0,34	0,00	0,41	-0,25	0,13	0,77
Can you have a chat with colleagues during working hours?	0,10	-0,07	0,03	0,58	0,20	0,11	0,67
Do you find that you have enough contact with colleagues during working hours?	0,05	-0,05	0,09	0,60	0,40	0,27	0,79
Do you have too much work to do?	-0,06	0,29	0,12	0,36	0,57	-0,10	0,71
Do you work under time pressure?	-0,03	-0,08	-0,12	0,24	0,74	-0,12	0,70
Do you have to pay attention to too many things at the same time?	0,02	0,03	0,06	0,50	0,51	0,02	0,66
Do you have to remember many things in your work?	0,10	0,37	-0,05	0,30	0,53	0,06	0,59

Table 3 (continued)

Factor Analyses of the Job Demands-Resources Scale

Do you have to remember many things in your work?	0,10	0,37	0,05	0,30	0,53	0,06	0,59
Are you confronted in your work with things that affect you personally?	-0,06	-0,02	0,09	0,04	0,51	0,22	0,58
Do you have contact with difficult staff members in your work?	0,05	0,23	-0,15	0,15	0,47	0,09	0,59
Does your work put you in emotionally upsetting situations?	-0,10	-0,01	0,02	-0,24	0,61	0,06	0,73
In your work, do you repeatedly have to do the same things?	-0,12	-0,15	-0,19	-0,07	0,50	-0,04	0,75
Do you find that you do not have enough time?(Deleted)							
Do you need to be more secure that you will still have a job in a year's time?	0,06	0,12	-0,07	0,13	0,03	0,86	0,82
Do you need to be more secure that you will still have your current job next year?	0,06	0,12	-0,04	0,14	0,04	0,85	0,81
Do you need to be more secure that you will have the same role next year?	-0,01	0,05	-0,00	0,21	0,00	0,77	0,67

Factor 1 was labelled *Organisational Support*. Items that loaded on this factor were in the main variables that related to support from the supervisor and the organisation as a whole in the form of receiving information on the job, being part of the decision-making process, and getting cooperation from the supervisor.

The second factor was labelled *Growth Opportunities* and included variables such as experiencing personal growth and development on the job and receiving feedback. The third factor was labelled *Advancement*. The variables that loaded on this factor include progressing financially, and opportunities for training and promotion.

The fourth factor was labelled *Social Support* and measured whether there was sufficient support from colleagues at work. The fifth factor was labelled *Job Demands* and measured whether an individual had too much work to do, or had to pay attention to too many things at once. The sixth factor was labelled *Job Insecurity*. This factor measured whether the individual perceived his or her job to be secure.

The product-moment correlation coefficients between the scales are presented in Table 4. Table 4 shows that Exhaustion has statistically significant negative correlations (practically significant, medium effect) with Vigour and Dedication respectively. Cynicism has statistically significant negative correlations (practically significant, large effect) with both Vigour and Dedication.

Job Demands have statistically significant positive correlations (practically significant, medium effect) with Psychological Unwell-being. The various job resource variables (organisational support, growth, advancement, and social support) show the following correlations with commitment: Organisational Support has a statistically significant positive correlation (practically significant, large effect) with Organisational Commitment, but a positive correlation (medium effect) with Individual Commitment. Growth has a statistically significant positive correlation (practically significant, large effect) with both Organisational and Individual Commitment. Social Support has statistically significant positive correlations (practically significant, medium effect) with both Organisational and Individual Commitment, while Advancement has a positive correlation (medium effect) with Organisational Commitment. Table 4 also shows the correlations between the burnout variables and the job resource variables. Exhaustion shows a negative correlation (medium effect) with Organisational Support, Growth and Social Support, while cynicism has a negative correlation (medium effect) with Organisational Support and Growth.

Bladsy 107

Table 4

Product-Moment Correlation Coefficients between the Scales

Dimensions	1	2	3	4	5	6	7	8	9	10	11	12
1. Exhaustion	.	.	.	.	.	.	.	.	.	.	.	.
2. Cynicism	0,58*++	.	.	.	.	.	.	.	.	.	.	.
3. Vigour	-0,36*+	-	0,79*+	.	.	.	.	.	.	.	.	.
		0,50*++	+	.	.	.	.	.	.	.	.	.
4. Dedication	-0,43*+	-	0,76*+	.	.	.	.	.	.	.	.	.
		0,51*++	+	.	.	.	.	.	.	.	.	.
5. Organisational Support	-0,35*+	-0,41*+	0,34*+	0,41*+	.	.	.	.	.	.	.	.
6. Growth	-0,44*+	-0,45*+	0,58*+	0,70*++	0,59*++	.	.	.	.	.	.	.
			+
7. Advancement	-0,25*	-0,24*	0,29*	0,24*	0,33*+	0,26*	.	.	.	.	.	.
8. Support	-0,34*+	-0,24*	0,39*+	0,34*+	0,51*++	0,46*+	0,18*	.	.	.	.	.
9. Demands	0,37*+	0,31*+	0,26*	0,26*	0,25*	0,17*	0,20*	.	.	.	.	.
10. Insecurity	-0,04*	-0,16*	0,25*	0,27*	0,18*	0,16	0,22*	0,22*	.	.	.	.
11. Physical Ill Health	0,24*	0,28*	-0,24*	0,28*	-0,27*	0,18	-0,24*	-0,18*	0,29*	.	.	.
12. Psychological Unwell-being	0,47*+	0,45*+	-	-0,33*+	-0,36*+	-0,32	-0,18*	0,32*+	0,30*+	0,67*++	.	.
			0,37*+	.	.	.	.	.	.	.	.	.
13. Organisational Commitment	-0,46*+	-0,47*+	0,50*+	0,53*++	0,54*++	0,56*++	0,34*+	0,34*+	0,15*	-0,21*	-	0,32*+
			+
14. Individual Commitment	-0,42*+	-	0,64*+	0,59*++	0,37*+	0,52*++	0,29*	0,30*+	0,16*	-0,21*	-	0,73*++
		0,52*++	+	.	.	.	.	.	.	.	0,33*+	.

$p < * p < 0,05$ statistically significant

+ $r > 0,30$ practically significant (medium effect)

++ $r > 0,50$ practically significant (large effect)

Structural equation modelling (SEM) was used to firstly test whether overload and lack of resources would lead to burnout, which could in turn lead to ill health. Secondly, it was used to test whether resources would lead to engagement, which would in turn lead to organisational commitment as illustrated in Figure 2. The proposed model, including the hypothesised relationship, was tested with SEM analysis as implemented by Amos (Arbuckle, 1999). Three of the latent variables (Job resources, Wellness and Organisational Commitment) were measured by at least two scales. For each of these dimensions a latent variable was specified on which the corresponding scales loaded, thereby separating random measurement error from true score variance. However, two of the scales, namely Job demands and Ill health had a unifactorial structure. Therefore, a one-factor model was fitted for all items belonging to the specific scales. It was then followed by separate indicators for each scale by selecting items on the basis of their loading, alternating items with high and low loadings. Hence, two items of parcels were created for overload, and three items of parcels were created for ill health.

A structural model, including the hypothesised relationships, was tested in a path model. The correlations are shown in Figure 2. The latent variables include Overload, consisting of two observed variables, namely Distress or Burnout with two latent variables, namely Exhaustion and Cynicism. Ill Health consists of three observed variables, while Resources consist of Organisational Support, Growth and Social Support. Engagement consists of two observed variables, namely Vigour and Dedication, while Commitment consists of two observed variables, namely Organisational Commitment and Individual Commitment.

The process continued by testing the hypothesised structural model for Overload, Resources and Lack of resources by using structural equation modelling as implemented by Amos (Arbuckle, 1999). A relatively strong correlation ($r = 0,80$) was found between burnout and work engagement. Following the procedure of Jackson et al. (2006), it was decided to model the covariance between burnout and work engagement by including a latent variable (a dummy variable) called work wellness. The results revealed an acceptable model fit: $\chi^2 = 190,27$, $\chi^2/df = 2,68$; GFI = 0,88; CFI = 0,93; IFI = 0,93; TLI = 0,91; RMSEA = 0,09.

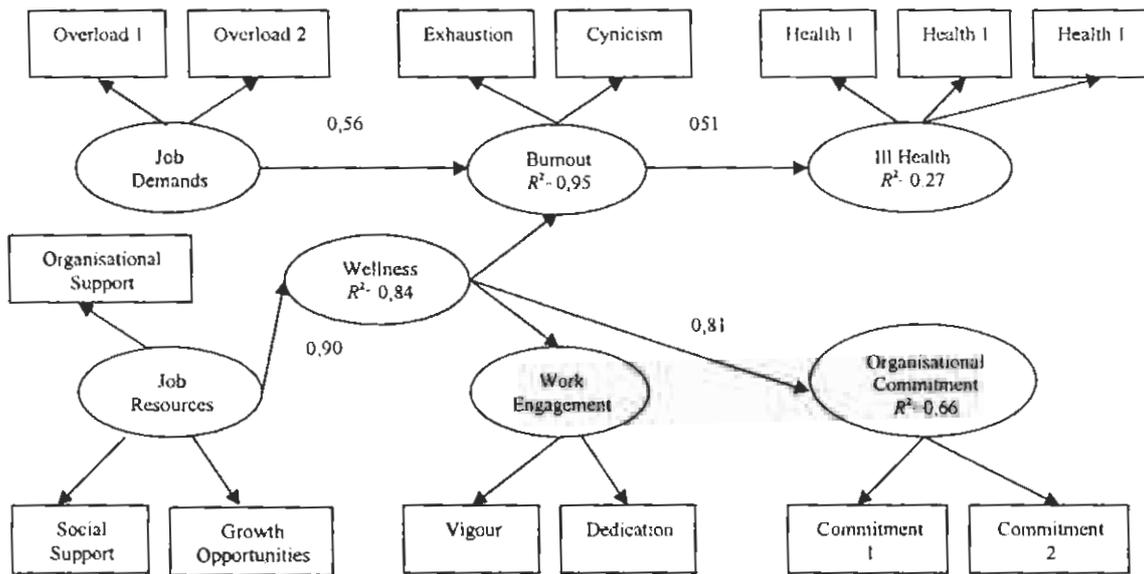


Figure 1: Structural model of work wellness

As is evident in Figure 1, the path from Job demands (Overload) to Burnout (Exhaustion and Cynicism) is significant and positive. Furthermore, the path from Burnout to Ill health is also statistically significant and positive. Figure 1 also shows a statistically significant and positive path from Job resources (consisting of Organisational support, Growth opportunities and Social support) to Wellness (i.e. low Burnout and high Work engagement). In addition, the path from Wellness to Organisational commitment is statistically significant and positive. Job resources predict 84% of the variance in Wellness (low Burnout and High Work engagement), which in turn predicts 66% of the variance in Organisational commitment. High job demands and low job resources predict 95% of the variance in Burnout, which in turn predicts 27% of the variance in Ill health.

DISCUSSION

The first objective of the study was to establish the reliability and validity of the constructs in a model of work wellness, and secondly test a structural model of the relationship between job demands-job resources, burnout, engagement, ill health, and organisational commitment.

The items of the Burnout and Work Engagement scales, the Job Demands-Job Resources Scales (JDRS), and the Health and Organisational Commitment subscales displayed very

acceptable Cronbach's alpha scores as shown in Table 2. The skewness and kurtosis scores are also indicative of a general normal distribution. The JDRS dimensions as shown in Table 3 also display high factor loadings, and the product-moment correlation coefficients in Table 4 are evident of strong correlations between the Burnout, Work Engagement and JDRS dimensions. The predictor variables in the multiple regressions also generally predict the various dependent variables of interest, while the structural equation modelling established that overload and lack of job resources would lead to burnout and consequently to ill health, while job resources would lead to commitment through engagement.

The second objective of the study is to test the relationship between job demands-job resources, burnout, engagement, ill health, and commitment. Product moment correlations, multiple regression analysis and structural modelling were used to reach this objective. The following observations have been made in the study. Firstly, that experiencing unrealistic deadlines and unmanageable workloads relate positively to psychological ill health (having panic attacks and constant irritability), and negatively to commitment (feeling valued and trusted by the organisation and being committed to the organisation). Secondly, having to face unrealistic deadlines and unmanageable workloads tend to lead to exhaustion (feeling emotionally drained at work). It is also true that stressful situations where participants become callous towards people and finding it difficult to focus also lead to physical ill health. Furthermore, burnout due to feeling emotionally drained at work, and finding it difficult to focus predict psychological ill health, and explain a considerable large percentage of civil servants that experience panic attacks and constant irritability on their jobs. This finding supports Hypothesis 1 that high job demands lead to ill health via burnout.

Job demands predicting burnout are in line with Schaufeli and Bakker's (2004) finding that job demands may turn into job stressors when meeting those demands requires high effort, and are thus associated with high costs that elicit negative responses like depression, anxiety or burnout, which may consequently lead to physical and psychological ill health. Furthermore, according to Hockey (1997), there is the energetic process in which extreme job demands lead to exhaustion, and this process model of compensatory control links job demands with health problems through burnout. The finding seems to suggest that public servants who experience job demands would suffer burnout and experience ill health as is evident in Table 5 and Figure 1. It is evident from the literature review that public servants are currently faced with very demanding work environments characterised by an increased

workload, role conflicts, decreased job control, and role ambiguity (Low, Cravens, Grant, & Moncrief, 2001). Civil servants from Mafikeng are no exception and therefore the findings of this study are significant in order to improve the work wellness of civil servants.

In the area of job resources, engagement, and commitment the findings are as follows: there is a positive correlation between feeling strong and vigorous in one's work (a dimension of work engagement) and receiving support from one's boss and colleagues and being given opportunities for growth - all of which are all dimensions of job resources. Feeling strong and vigorous in one's work showed a strong correlation with commitment. Devoting attention and energy to work also showed a strong positive correlation with commitment.

The findings give support to Hypothesis 2 that job resources lead to organisational commitment via engagement. The findings are also in line with May, Gilson, and Harter's (2004) finding that job resources tend to create psychological meaningfulness and safety for employees, thus they tend to be engaged in their work. Furthermore, according to Jackson and Rothmann (2005), work engagement may be considered a precursor to organisational commitment, because people who experience deep engagement in their jobs identify with their organisations.

Siu (2002) observed that organisational commitment relate to most of the physical and psychological outcomes among workers and to the moderating effects on the stressor-health relationship. Siu (2002) is therefore of the view that the moderating effect of commitment guards workers against the negative effect of work pressure, because it allows them to attach direction and meaning to their work. Organisational commitment may also provide workers with stability, and a feeling of belonging or the other way round (Siu, 2002). It could be inferred that organisational commitment could moderate the experience of occupational stress and burnout on health outcomes. In this study, the engagement and commitment variances are the highest in the multiple regression analyses, which could support Siu's (2002) observation that commitment has moderating effects on the stressor-health relationships. Movement in the public service seems to be from one department to the other, which also confirms the observation of Siu (2002) that commitment to the organisation also ensures stability. The implication is that the availability of resources will lead to engagement and commitment of employees.

Availability of resources on the job, such as support from the organisation, opportunities for growth and social support have negative correlations with feeling exhausted. Furthermore, having support from the organisation and opportunities for growth are negatively correlated with cynicism. Barkhuizen, Rothmann, and Van de Vijver (in press) found correlations between Exhaustion and Growth and Advancement, and Organisational Support. The finding seems to indicate that given the current job resources of public servants, they are not likely to suffer burnout and experience ill health because of burnout.

It has also been found that feeling exhausted and the experiencing energy and devotion are negatively correlated. The feeling of cynicism also has negative correlations with both energy and devotion to work. This finding supports Hypothesis 5 (H^5) that burnout is negatively related to engagement. A number of studies confirm the above finding, namely Maslach and Leiter (1997), who found that burnout and work engagement will be strongly negatively correlated. Jackson, Rothmann, and Van de Vijver (2006) and Coetzer and Rothmann (2006) confirm the finding. The implication of this finding to the public service is that employees who suffer burnout might not experience engagement on their jobs and would therefore not be committed and possibly become unwell. The study found no correlations between job resources and job demands, unlike the study by Schaufeli and Bakker (2004), while Barkhuizen et al. (in press) found negative correlations between workload and organisational support.

The results of the structural equation modelling indicate that job demands and lack of job resources would lead to burnout and consequently to ill health, while the availability of job resources will lead to wellness and in turn to commitment. It is evident that burnout mediates the relationship between job demands and ill health and therefore civil servants who experience high job demands are likely to develop high levels of burnout, which could lead to ill health. However, participants who have access to resources on the job would experience wellness and consequently commitment.

The study was not without its limitations. Firstly, the study was exclusively based on self-report measures and was synchronic. Secondly, the low questionnaire return rate had a significant effect on the proper representation of certain language groups. Other limitations of the study included the fact that the questionnaire was formulated in English and therefore some of the respondents who were not English speaking could not understand all of the

questions. Furthermore, the questionnaire comprised too many items that could explain why several questions were not answered. Although Figure 1 has arrows that presuppose causation, the study could not establish causality since it is not a longitudinal study.

RECOMMENDATIONS

The study has established the Burnout, Work Engagement and Job Demands-Resources dimensions, the Health subscale and the Organisational Commitment scale as valid measuring instruments and their use in similar future studies are recommended.

The study found that job demands could lead to burnout among civil servants. The aspects of the job that were identified as stressful and which will consequently lead to burnout include working under time pressure, repeatedly doing the same thing and having a too heavy workload. It is therefore important that civil service management address these aspects. As primary intervention, management should first be made aware of the implications of job demands on both the employee and the organisation as a whole so that management could adopt a positive attitude to the management of this problem at the workplace. Management should then assist employees from working under time pressure by helping employees to efficiently manage their time.

As a secondary intervention, departments should organise wellness days like what is sometimes done by the department of education, to intensify campaigns that will educate employees on how to work smartly to avoid work related stress resulting from job demands. Counselling could also be done on such occasions for affected victims. As a tertiary intervention, management of the civil service could consider job rotation for people who could not get restored from the earlier interventions. Such employees could be moved to tasks that are not done under time pressures and also have some variety. These interventions would help minimise the relatively high levels of ill health among the sample of civil servants studied.

Civil service management should also respond to the lack of resources such as not having influence in planning one's work, lack of opportunities to follow training and not having support from colleagues. This is especially significant since the study has found a strong

relationship between job resources and organisational commitment. As a primary intervention, management should do proper selection and placement. People should be properly matched with jobs that they have the requisite skills for. Usually, mismatch with job, resulting in poor performance is often blamed on lack of resources.

As a secondary approach to this problem of lack of resources, management should do proper need analysis and train employees accordingly. Thus training should be scientifically informed and not haphazard, where in some cases training and development tend to focus mainly on the senior management at the expense of the middle and lower staff members, as is the case in the North West provincial civil service now. As much as finance permits employees at all levels should be given the relevant resources.

As a tertiary intervention, employees who do not respond to the above interventions and still show signs of lack of engagement and commitment should be subjected to counselling to establish whether their problems are work related or not. In some instances, such problems could have origins external to the organisation. They should be assisted accordingly, and in very extreme cases could have their appointments terminated, because not committed workers tend to be of very little use to the organisation in the long run.

A larger sample size is also recommended to make the study more representative and allow for generalisations that are more valid. In conclusion, attention should be paid to the translation of the measuring instruments into other South African languages.

REFERENCES

- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance, and normative commitment to the organization. *Journal of Occupational Psychology*, 63, 1–18.
- Arbuckle, J. L. (1999). *Amos user's guide version 4.0*. Chicago, IL: Smallwaters.
- Barkhuizen, N., Rothmann, S., & Van de Vijver, F. J. R. (in press). Wellness in higher education institutions. Submitted for publication.
- Bauer, T. N., & Green, S. G. (1998). Testing the combined effects of newcomer information seeking and manager behaviour on socialization. *Journal of Applied Psychology*, 83, 72–83.
- Berenson, M. L., & Levine, D. M. (1996). *Basic business statistics: Concepts and applications* (6th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Bertram, M. (2002). *Factor analysis*. Retrieved on August 10, 2002 from the World Wide Web: <http://darkwing.uregon.edu/~bfmalle/613/c7-new.html>
- Buitendach, J. H., & Moeletsi, M. (2004). *The relationship between psychological empowerment, job satisfaction, organisational commitment and job insecurity in divisions of a packaging industry*. Paper presented at the 2nd South African Work wellness Conference, Potchefstroom, South Africa, 24–26 March.
- Buitendach, J. H., & Van Zyl, Y. (2004, March). *Burnout and work engagement of educators on senior level in the Sedibeng West District – Vanderbijlpark*. Paper presented at the 2nd South African Work Wellness Conference, Potchefstroom, South Africa.
- Burns, N., & Grove, S. K. (1993). *The practice of nursing research, conduct, critique, and utilization* (2nd ed.). Philadelphia: W. B. Saunders.
- Campbell, C., & Rothmann, S. (2005). Burnout in a customer service environment. *Management Dynamics*, 14, 16–28.
- Cartwright, S., & Cooper, C. L. (2002). *ASSET. An organizational stress screening tool: The management guide*. Manchester, UK: RCL Ltd.
- Clark, L. A., & Watson, D. (1995). Construct validity: Basic issues in objective scale development. *Psychological Assessment*, 7, 309–319.
- Coetzer, J. W., & Rothmann, S. (2006). *A model of work wellness of employees in an insurance company*. Submitted for publication.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Orlando CA: Academic press.

- Cooper, C. L., Dewe, P. J., & O'Driscoll, M. P. (2001). *Organizational stress: A review of critique of theory, research, and applications*. Thousand Oaks, CA: Sage.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2000). A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing*, 32, 454–464.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001b). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499–512.
- Hobfoll, S. E., & Freedy, J. (1993). Conservation of resources: A general stress theory applied to burnout. In W. B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 115–129). Washington, DC: Taylor & Francis.
- Hockey, G. J. (1997). Compensatory control in the regulation of human performance under stress and high workload: A cognitive-energetical framework. *Biological Psychology*, 45, 73–93.
- Houkes, I., Jansen, P. P. M., De Jonge, J., & Nijhuis, F. J. N. (2001). Specific relationships between work characteristics and intrinsic work motivation, burnout and turnover intention: a multi sample analysis. *European Journal of Work and Organizational Psychology*, 10, 1–23.
- Johnson, S. & Cooper, C. (2003). *The construct validity of the ASSET stress measure*. Manuscript made available by authors.
- Jackson, L. T. B., & Rothmann, S. (2005). An adapted model of burnout for educators in South Africa. *South African Journal of Education*, 25, 100–108.
- Jackson, L. T. B., Rothmann, S., & Van de Vijver, A. J. R. (2006). A model of work-related well-being for educators in North West Province. *Stress and Health*, 22.
- Leon, N., Bhunu, F., & Kenyon, C (2001). *Voices of facility managers*. Retrieved on October 10, 2002 from the World Wide Web: <http://www.list.org.za/sahr/2001/chapter11.htm>
- Low, G. S., Cravens, D. W., Grant, K., & Moncrief, W. C. (2001). Antecedents and consequences of salesperson burnout. *European Journal of Marketing*, 35, 587–611.
- Maslach, C., & Jackson, S. E. (1986). *MBI: Maslach Burnout Inventory: Manual research edition*. Palo Alto, CA: Consulting Psychologists.
- Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: Research, theory, and intervention perspectives*. Beverley Hills, CA: Sage Publications.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory: Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologist Press.

- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational. *Psychological Bulletin*, *108*, 171-195.
- May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions and meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational and Organizational Psychology*, *77*, 11-37.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behaviour* *61*, 20-52.
- Mourisis, M. J. (1994). *SPSS professional statistics 6.1*. Chicago, Illinois: SPSS.
- Mouton, J. (1998). *Understanding social research*. Pretoria, SA: Sigma.
- MRA (Market Researchers & Analysts). *Research design*. Retrieved on October 7, 2002 from the World Wide Web: <http://www.mr-a.com/research design.htm>
- Naudé, J. L. P. (2003). *Occupational stress, coping, burnout and work engagement of emergency workers in Gauteng*. Unpublished doctoral thesis, PU for CHE, Potchefstroom.
- Norušis, M. J. (1994). *SPSS professional statistics 6.1*. Chicago, IL: SPSS.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- P.A.N.D.A (2002). *Basics of statistical analysis*. Retrieved on November 9, 2003 from the World Wide Web: <http://www.tulane.edu/-panda2/>
- Potter, B. (1998). *Symptoms of burnout*. Retrieved on October 9, 2002 from the World Wide Web: <File:///A/symptoms of job burnout.htm>
- Porter, S. S., Kraft, F. B., & Claycomb, C. (2004). The practise of a wellness lifestyle in a selling environment: A conceptual exploration. *Journal of Personal Selling and Sales Management*, *3*, 191-204.
- Robbins, S. P. (2001). *Organisational behaviour*. Cape Town: Pearson Education.
- Rothmann, S. (2003). Burnout and engagement: A South African perspective. *South African Journal of Industrial Psychology*, *29*, 16-25.
- Rothmann, S. (2004). Burnout, psychological strengths and coping strategies of senior managers in the manufacturing industry. *Management Dynamics*, *13*(4), 26-37.
- Schaufeli, W. B., & Bakker, A. B. (2001). Werk en welbevinden: Naar een positieve Benadering in de Arbeids-en Gezondheids psychologie [Work and well-being: Towards a positive approach in occupational and health psychology]. *Gedrag en Organisatie*, *14*, 229-253.

- Schaufeli, W. B., & Bakker, A. B. (2004) Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*, 1–23.
- Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London: Taylor & Francis.
- Schaufeli, W. B., Salanova, M., González-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A confirmatory analytic approach. *Journal of Happiness Studies, 3*, 71–92.
- Schutte, N., Toppinen, S., Kalimo, R., & Schaufeli, W. B. (2000). The factorial validity of the Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and nations. *Journal of Occupational and Organizational Psychology, 73*, 53–66.
- Siu, O. L. (2002). Occupational stressors and well-being among Chinese employees: the role of organizational commitment. *Applied Psychology: An International Review, 51*, 527–544.
- SSPS Inc. (2003). SPSS 12.0 for Windows. Chicago, IL: Author.
- Statistical Services (1995). *Factor analysis using SAS PROC FACTOR*. The University of Texas at Austin. Retrieved on August 10, 2003 from the World Wide Web: <http://www.utexas.edu/ccdocs/stat53.html>
- State of the Nation Address of the President of South Africa, Thabo Mbeki, Joint Sitting of Parliament 9 February 2001. Cape Town: Parliamentary Hansard/Government online, www.gov.za
- StatSoft, (2003). *Principal components and factor analysis*. Retrieved on August 10, 2003 from the World Wide Web: <http://www.StatsoftCom/textbook/st/acan.html>
- Storm, K. & Rothmann, S. (2003). A psychometric analysis of the Maslach Burnout Inventory – General Survey in the South African Police Service. *South African Journal of Psychology, 33*, 219-226.
- Storm, K., & Rothmann, S. (2003). A psychometric analysis of the Utrecht Work Engagement Scale in South African Police Service. *South African Journal of Industrial Psychology, 29*, 62–70.
- Suliman, A. M., & Iles, P. A. (2000). The multi-dimensional nature of organizational commitment in a non-western context. *Journal of Management Development, 19*, 17–82.
- The South African Management Development Institute (SAMDI). (2005). *Strategies, programmes and capacities for building state capacity*. Formulated in response to the

remit of the July 2005 Cabinet Lekgotla, for the Minister for Public Service and Administration, Pretoria, South Africa.

Winefield, A. H., Gillespie, N., Stough, C., Dua, J., & Hapuararchchi, J. (2002). *Occupational stress in Australian universities: A national survey*. Melbourne: National Tertiary Education Union.

CHAPTER 5

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The purpose of this chapter is to provide conclusions in respect of the findings from three empirical studies regarding the work-related well-being of public servants in a South African sample. The conclusions are based on the objectives of the three research articles. The limitations of the studies are also discussed and recommendations for the public service are made. In addition, the specific outcomes of the study are presented.

5.1 CONCLUSIONS

The general objective of this research was to standardise the Maslach Burnout Inventory-General Survey (MBI-GS), the Utrecht Work Engagement Scale (UWES) and the ASSET (An Organisational Stress Screening Tool) for civil servants based in Mafikeng, and to develop a structural model of work wellness that explains whether job demands and lack of resources will lead to burnout which will consequently lead to ill health, while job resources will lead to commitment through work engagement.

The first objective of this study was to establish the reliability and validity of the MBI-GS for civil servants based in Mafikeng. According to the literature review, burnout is a syndrome comprising four dimensions, namely exhaustion, cynicism, reduced professional efficacy and cognitive weariness. Exhaustion refers to emotional and physical fatigue and depletion, profound depression, loss of energy, powerlessness, short attention span, disgust, boredom, and emotional withdrawal. Cynicism is associated with poor interpersonal relationships with clients and colleagues, overreaction, intense hostility, poor communication with co-workers, drop in tolerance level, and dehumanisation (regarding clients as objects). Reduced professional efficacy refers to the feeling of being unable to meet clients' needs, and satisfy essential ingredients of job performance, working harder, yet accomplishing less. The fourth dimension of burnout according to this study is cognitive weariness, which refers to not being able to focus on one's job.

Structural equation modelling (SEM) methods, as implemented by AMOS (Arbuckle, 1999), were used to test the factorial model for burnout. In this study, a fourth subscale namely

cognitive weariness was added to the theoretical three-dimensional structure (Exhaustion, Cynicism and Professional Efficacy). The results showed that the four-factor model had more improved indices as compared to the one-factor and the three-factor models. The study has established that burnout seems to consist of all the following components: the exhaustion or low activation component, self-efficacy (the feeling of being unable to meet clients' needs) component, identification or dedication component, and cognitive weariness (lack of concentration) component. This conclusion has received support from Coetzee and Rothmann (2004) and Jackson and Rothmann (2005).

Based on the generally acceptable descriptive statistics and alpha coefficient scores of the four subscales, namely exhaustion, cynicism, professional efficacy and cognitive weariness of the MBI-GS, the study concluded that the MBI-GS is a reliable and valid measuring instrument. This conclusion indeed introduces a fourth acceptable dimension to the MBI-GS subscales. The conclusion that all four subscales are reliable and valid is supported by studies such as Coetzee and Rothmann (2004), Jackson and Rothmann (2005), and Salanova and Schaufeli (2000).

The second objective of the study was to assess the reliability and validity of the Utrecht Work Engagement Scale (UWES) for a sample of Mafikeng civil servants in the North West Province of South Africa. Work engagement has been defined as an energetic state in which an employee is dedicated to excellent performance at work, and is confident of his or her effectiveness (Schutte, Toppinen, Kalimo, & Schaufeli, 2000). Schaufeli, Salanova, González-Roma, & Bakker (2002), in a similar vein, defined work engagement as a positive, fulfilling and work-related state of mind that is characterised by vigour, dedication and absorption. Like Schaufeli et al. (2002), and Storm and Rothmann (2003b), this study confirmed the validity and reliability of the UWES. The definition of work engagement suggested that an engaged worker would develop high levels of energy and a sense of attachment and dedication to work, and even express a cognitive dimension like flow, a view shared by Csikszentmihalyi (1990).

Structural equation modelling (SEM) methods were used to test the factorial model of the UWES. The study found a two-factor model, consisting of vigour and dedication with high alpha coefficients more acceptable than both the one-factor and the three-factor structures. Items 9 ("I feel happy when I am engrossed in my work"), 11 ("I am immersed in my work"),

14 (“I get carried away by my work”) and 15 (“I am very resilient mentally in my work”) were deleted, and Item 1 correlated with Item 2 and Item 7 with Item 17 in order to get a good fit of model to the data. This finding could possibly be due to the semantic problems concerning the interpretation of the items by the various language groups. The study of Naudé and Rothmann (2004), like this study, found two factors labelled vigour/dedication and absorption with acceptable coefficient alpha scores. The study thus concluded that engagement is a two-dimensional structure. The study emphasised the energy and dedication components of engagement, and seems to suggest that a highly energised worker becomes dedicated or attached to his or her work; hence, the cognitive dimension of absorption could be argued as an integral aspect of dedication.

The third objective was to determine the similarities between burnout and work engagement based on the assertion that work engagement is theoretically viewed as the opposite end of the continuum from burnout. Schaufeli and Bakker (2004) are of the view that because of their antithetical or opposing nature they are negatively related. Firstly, a Principal Component Analysis (PCA) with oblimin rotation was done on the various subscales of burnout and work engagement. Component 1 produced high loadings on Professional Efficacy, Vigour and Dedication that explained the variability of work engagement.

In component 2, high loadings were found on Exhaustion, Cynicism and Cognitive Weariness. These variables explained the dynamics in burnout. The two correlated factors of burnout and engagement were then extracted resulting in a high negative correlation. The empirical study also showed negative correlations between exhaustion, cynicism and cognitive weariness on the one hand and vigour and dedication on the other hand. Furthermore, the structural equation modelling showed a negative correlation of ($r = -0,80$) between burnout and engagement. The conclusion therefore is that burnout is negatively correlated with engagement. The strong correlation found between burnout and engagement confirmed the assertion that these two elements form the basic structure of well-being at work with burnout representing negative affective well-being, and work engagement representing positive well-being (Nelson & Simmons, 2003). Much as this strong correlation between burnout and engagement seems to raise the question whether they are not the same, it tends to confirm the widely held view that work engagement can be distinguished, but not divorced from burnout in terms of its structure and operationalisation.

The fourth objective of this study was to determine the reliability of the ASSET (An Organisational Stress Screening Tool) as a measuring instrument of occupational stress for civil servants. Based on the alpha coefficients, it was concluded that the ASSET is a reliable and valid measuring instrument for stress of civil servants. This conclusion has received support from Coetzer and Rothmann (2006) who found in their study that the ASSET is an internally consistent and valid measuring instrument of occupational stress.

The fifth objective of the study was to determine the stressors, moderators and outcomes, and the levels of stress among the civil servants in question. The study found among others relations at work, overload, lack of resources/communication, and control as the perceived sources of stress for the civil servants studied. Stress due to relations at work, overload and lack of resources/communications are the highest sources of stress for the civil servants. Literature indeed confirms that civil servants largely suffer from work overload since all the government priorities are supposed to be implemented by the civil service. Despite this enormous challenge that the service faces, it is widely known that a sizable proportion of civil servants do not have the corresponding resources to meet the challenge or work overload. Coupled with the lack of resources are the poor work relationships which some of these civil servants have to live with each day at work. The study therefore seems to be confirming what is pertaining in the civil service when it concluded that the work relationships, overload and lack of resources/communication are the highest sources of stress for the sampled civil servants.

Furthermore, it is also concluded that the sample of civil servants perceived insecurity and work-life balance as less stressful. Arguments can be advanced for these conclusions. Firstly, as already explained in the study, civil servants generally feel secure about their jobs because of the labour laws that sufficiently protect them against any arbitrary dismissal or injustice. The second reason is the government's own commitment to provide employment to majority of its citizens.

The sixth objective of the study was to examine the relationship between burnout, work engagement, occupational stress and the various biographical characteristics such as age, gender, length of service, marital status, race, and educational level. MANOVA analyses were done to determine the relationship between burnout and the various biographical characteristics. The Wilks' Lambda scores revealed that there were no statistically significant

differences between burnout and any of the said biographical characteristics of the Mafikeng civil servants. This conclusion is, however, contrary to studies such as Byrne (1993), Jackson and Rothmann (2005), and Schaufeli and Enzmann (1998), which found statistically significant differences between burnout and the biographical characteristics of their respondents. The inability of the study to establish statistical differences between burnout and the biographical variables is very difficult to conjecture. However, it is possible that this could be due to the small sample size and the general problem of a number of respondents not correctly interpreting the questions, which meant that they were not able to provide the expected response. For example, the studies of Coetzee and Rothmann (2004) and Jackson and Rothmann (2005) did not find any statistically significant gender differences between the independent variables in their studies. This finding and conclusion of this study should therefore not be seen as irregular.

The multivariate analysis of variance followed by the Wilks' Lambda tests revealed that there were no statistically significant differences between work engagement and any of the biographical characteristics of the sample of Mafikeng civil servants. This conclusion is contrary to most of the studies in the literature, which concluded that there were statistically significant differences between work engagement and the biographical characteristics of the respondents studied. Similar to the case of the burnout, it is very difficult to explain why no statistically significant differences were found between work engagement and any of the biographical variables. This could be explained by the relative small sample size, as well as the problem of understanding the terminologies in the questionnaire. The work engagement subscale had even more ambivalent terms than the burnout measuring instrument.

The Wilks' Lambda scores revealed that there were no statistically significant differences between the stressor dimensions (security, overload, work relation) and any of the said biographical variables of the Mafikeng civil servants. The conclusion therefore is that level of stress according to this study does not vary in relation to the biographical variables in the sample of civil servants. As already explained, it is difficult to explain why there were no statistically significant differences between the stressor variables and the biographical variables. This could possibly be due to the small sample size or the relatively poor interpretation of some of the concepts in the questionnaire.

The seventh objective was to determine whether occupational stress would predict ill health and a lack of organisational commitment. We concluded that psychological (un)well-being is the major strain outcome of stress for the civil servants under study, followed by physical ill health. Coetzer and Rothmann (2006) also found physical and psychological ill health to be the major outcomes of stress for their respondents. This conclusion seems to confirm what is currently happening at the workplace. Recently there have been many reported cases of employees suffering from psychological ill health who have to be referred to the EAP unit in government for assistance. A scrutiny of sick leave records in certain government departments again go to confirm the conclusion of this study that psychological and physical ill health is prevalent among the civil servants studied. It might also be important to recap part of the literature to confirm this conclusion. In South Africa, several organisations like Eskom, the Chamber of Mines, Iscor, Nedbank and the Civil Service have introduced Employee Assistance Programmes as a direct attempt to reduce the negative effects of occupational stress (Olwagen, 1993).

Stress due to lack of resources/communication were statistically significant predictors of physical ill health, stress due to security and aspects of the job predicted psychological (un)well-being, having control on one's job predicted organisational commitment, and being secured predicted individual commitment. The study concluded that the percentage of ill health among the civil servants as a result of lack of resources, insecurity and aspects of the job was alarmingly high.

Lack of resources predicted ill health among the sample of civil servants, and this seem to be in line with what is prevailing within the civil service. As already explained, the lack of resources in the face of tremendous work load tends to put civil servants under tremendous stress which then justifies the conclusion that lack of resources predicts physical ill health. Aspects of the job and security predicted psychological (un)well-being. Aspects of the job, for example remaining in the same job for the next five to 10 years, according to the sten scores, are also perceived by the sampled civil servants as a little stressful. As a result, the conclusion that aspects of the job predict psychological ill health reflects the experiences of the sampled civil servants. However, the finding that security predicts psychological ill health seems to contradict the perception of the civil servants studied because the sten score on security is the lowest, which therefore indicates that the respondents did not perceive security as a source of stress. Furthermore, since aspects of the job and security jointly predicted psychological ill

health it would be difficult to determine effectively which proportion of the two predicted psychological ill health.

Having little control over many aspects of the job, and not being involved in decisions affecting one's job predicted organisational commitment. Since the sten score registered on control can be described as moderately low, it is therefore not unlikely that control can predict organisational commitment. Despite the fact that control is one of the perceived sources of stress in relation to the sten scores obtained empirically, it needs be emphasised that considering the range of 1 to 10 on the stress scale, control is indeed moderately low. Furthermore, security predicted individual commitment. Security was listed by the civil servants under study as the least perceived source of stress. Hence, this prediction is indeed a true reflection of what pertains among the civil servants studied.

The eight objective was to determine whether organisational commitment would moderate the effect of occupational stress on the ill health of the civil servants studied. The results showed that occupational stress had main effects on organisational commitment. However, no evidence for moderating effects were found. The individual commitment and organisational commitment dimensions comparatively registered relatively higher sten scores, which is suggestive of strong commitment, which might have been responsible for the relatively low scores registered on the majority of the stressors. Hence, the conclusion is drawn that organisational commitment moderates the effect of occupational stress on the health of the sample of civil servants.

The ninth objective was to test a structural model of work-related well-being for civil servants. Work wellness in this study consisted of burnout (exhaustion and cynicism) and engagement (vigour and dedication). The Job Demands-Resources scales were subjected to a factor analysis and the results showed very high factor loadings. Six factor structures emerged after the analysis. Through product-moment correlation coefficients correlations were found between job demands, physical ill health and psychological (un)well-being, and through multiple regression analysis job demands predicted exhaustion, cynicism and cognitive weariness, all of which are dimensions of burnout. Through structural equation modelling the study further found that job demands and lack of job resources could lead to ill health via burnout. Based upon these empirical findings it was concluded that job demands would

predict ill health through burnout. Psychological (un)well-being and physical ill health are the results of burnout, contend (Hockey, 1997; Maslach & Leiter, 1997).

The job resources dimensions like organisational support, and growth and advancement correlated negatively with the burnout dimensions of exhaustion, cynicism and cognitive weariness in a product-moment correlation analysis. The SEM methods also confirmed that lack of job resources would lead to burnout. Based on these empirical findings the study concluded that job resources are negatively correlated with burnout, a view shared by Coetzer and Rothmann (2006). Another relationship found in the study was that job resources could lead to organisational commitment through engagement (Schaufeli & Bakker, 2004). This relationship was evident in the positive correlations that were found between all the job resources dimensions (support from the organisation, support from colleagues, opportunities for promotions and advancement), and organisational commitment and commitment from the individual. Furthermore, opportunities for growth, advancement and support predicted professional efficacy, while growth and advancement predicted vigour and dedication, and the structural equation modelling methods confirmed that job resources would lead to commitment through engagement.

The study also concluded that burnout and engagement could be predicted by job demands and job resources respectively (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Job demands were statistically significant predictors of exhaustion, cynicism and cognitive weariness, while opportunity for growth and advancement predicted vigour and dedication. SEM methods confirmed the multiple regression analysis that job demands lead to burnout for the path of coefficient from job demands to burnout is significant. Job resources according to SEM predicted engagement, where the path of coefficient from resources to engagement was significant.

The structural model of work wellness in this study seems to sustain the COBE model of Schaufeli and Bakker (2004), which presumes two psychological processes: the energetic and the motivational processes. The energetic process associates job demands with ill health via burnout, because job demands tend to lead to exhaustion and cynicism. The motivational process links job resources with organisational outcomes through engagement since job resources tend to be responsible for lower levels of exhaustion and cynicism, and enhance work engagement.

5.2 LIMITATIONS OF THE STUDY

The first limitation of the study concerns the low return rate, which resulted in the small sample size. This led to the under representation of some of the racial groups. As a result, the study could not offer any meaningful comparison between the various racial groups in the sample. The study sample comprised predominantly black Africans.

The second limitation was the cross-sectional design used in the study. Since it was not a longitudinal study, structural equation modelling was used and as a result causality could not be established. For example, the study could not establish causality between job demands and ill health, nor between lack of resources and ill health. Rare conditions cannot efficiently be studied using cross-sectional studies (Mann, 2003), because even in large samples there may for example be no one suffering from stress. Confounding variables may be unequally distributed, group sizes may be unequal, and cross-sectional studies are susceptible to Neyman bias.

Despite these disadvantages of cross-sectional studies, there are certainly a number of advantages. For instance, they can be used to determine prevalence, i.e. they can be used to study the number of cases in a population at a given point in time. For example, the study was able to measure stress, burnout and level of engagement of a respondent at a given time. Although cross-sectional studies cannot establish causality, they can infer causation. In this type of study only one group is used throughout and data are collected only once. However, multiple outcomes can be studied and therefore this type of study is relatively cheap. Another advantage of such studies is that subjects are not deliberately exposed, treated or not treated and hence cross-sectional studies are said to be more ethical.

Thirdly, the long time-span it took to administer and return the measuring instruments could have affected the reliability of the responses, especially in instances where the period spanned structural changes that took place in certain government departments.

The fourth limitation concerns the problem of understanding the phraseology of the items, especially due to the varying levels of education. English was the meta-language while the majority of the respondents were black Africans. This explains why some items were not well interpreted and well answered, and why some items were deleted.

The measuring instrument as a whole contained too many items. Therefore, some participants were discouraged from completing it while others simply did not have enough time to go through the entire questionnaire and returned it partly uncompleted which undoubtedly affected the outcome of the study.

Another notable limitation was that some participants were afraid to complete the questionnaires, despite all the assurances of confidentiality. This attitude on the part of some respondents was also a contributory factor to the relatively low questionnaire return rate.

5.3 RECOMMENDATIONS

Recommendations in respect of the government departments under study as well as recommendations for future research are made in this section.

5.3.1 Recommendations for the organisation

It is important to mention that the findings in a study of this type can only become meaningful if management understands and upholds the findings. It will therefore be important that management understands the whole concept of wellness (burnout and engagement). The workforce as a whole should be able to identify elements that cause burnout and those that minimise it.

According to the literature, one of the problems in organisations is the wall of silence and denial about stress, and the little or no leadership attention to the problem of stress (Entec Corporation, 2004). It is therefore recommended that as a start, management be educated on the existence of stress and burnout at the workplace, and the toll that stress and burnout take on both the human and material resources of the organisation.

From this study, for example, job demands have been identified as one of the factors that predict stress and possibly burnout. To address the problem of job demands, management would have to do the following interventions: as a primary intervention management should develop effective job descriptions so that workers would have clear ideas about their jobs. They should further be assisted by management to do time management. This would help civil servants to manage their schedules properly hence minimise the problem of meeting

unrealistic deadlines. it is important not to overload individual workers. Management should assist their staff with time management so that work could be well distributed to avoid short time frames for service delivery. Availability of resources has theoretically and empirically been found to enhance work engagement. Therefore, to keep civil servants engaged, it would be necessary to continuously keep them well resourced. Should management succeed in putting these recommendations in place, it would minimise the level of stress and burnout among the sample of civil servants studied.

The findings revealed that psychological (un)well-being is perceived as a major stress outcome (strain) among the sample of civil servants studied. Furthermore, one of the consequences of stress and burnout according to the literature is the toll it takes on the human resources of the organisation in the form of psychological ill health. The vast majority of previous studies have also focused on psychological dysfunction and unwell-being.

The study further established that the predictors of psychological (un)well-being among civil servants are security and aspects of the job. Management must therefore attempt to make the civil servants feel secure in their jobs by continuously training them so that they do not feel their skills might become redundant, and also making sure that people do not remain too long in temporary positions. Additionally, management should also improve upon certain characteristics of the job such as making the physical working conditions favourable, avoiding dull and repetitive work, and also making sure that people do not do the same work for too long. Minimising feelings of insecurity and improving upon the aspects of the job would help bring down the high incidence of psychological ill health among the sample of civil servants. This study would certainly have helped in bringing about a shift of emphasis from ill health to the well-being of the individual. These approaches could be termed primary interventions.

Despite the relatively high sten scores on psychological well-being, the stressor variables had low scores, indicating that stress, and for that matter burnout levels, among the civil servants were not perturbing. The observation from this study is that the Individual Employee Commitment was highest, followed by Organisational Commitment. These variables could have had moderating effects on the stressors. The study found a strong positive correlation between Vigour, Dedication (Engagement) and Commitment, while Engagement is predicted by Advancement, Social Support and Growth. The findings therefore seem to suggest that for management to keep their staff engaged and committed, they should pursue practices or

primary interventions that would enhance advancement (opportunity for promotion; paying good salary; possibility to progress financially), social support (getting on well with colleagues; having enough contact with colleagues) and growth (opportunities for growth and development; feeling of achievement) at the workplace. By pursuing these practices, management will take an important step in focusing on the psychological health and well-being of the individual.

Furthermore, for government to promote the wellness of public servants at all levels, it might be important to pursue the following primary interventions. Firstly, qualified professionals should be employed to render appropriate services across the entire public service - people should not just be hand picked to perform this important function. Additionally, management should encourage staff to adopt acceptable lifestyles, team building exercises, sharing of information on the job, and further assisting them to properly manage their finances so that they do not fall prey to money lenders who tend to cause them financial stress which tends to impact on their work.

There should also be improved facilities like office accommodation, equipment and transport for wellness practitioners. Presently, these units in most departments have been given very little support hence the units are ill equipped and even under staffed. A classic example was the case of the ill-equipped wellness unit in the department of education of the North West province, which was seriously overstretched when they had to counsel the learners and families of the thirteen educators who were killed in a car accident during July 2006.

As a secondary intervention, awareness campaigns should be carried out to educate employees on the symptoms of stress, burnout and other occupational diseases. These campaigns could take the form of outreach programmes whereby Voluntary Counselling and Testing (VCT) sites could be located in various chief directorates, districts and regions. These VCT sites could be used to distribute promotional materials on stress, burnout, HIV and AIDS. The sites could also assist in campaigning and marketing of wellness programmes. Additionally, private and confidential consulting rooms should be located in all departments or at the VCT sites, as is already happening in some government departments. These rooms should be utilised to attend to those employees who are showing signs of stress.

As a tertiary intervention, government might remove workers who suffer severe stress from their current positions and re-appoint them in less stressful jobs. In addition, special funds could be made available to assist such employees in receiving good medical treatment.

5.3.2 Recommendations for future research

In spite of the limitations of the study, the findings may have very important implications for future research and application. The long and verbose questionnaires used in this study affected the response rate negatively, which explains the relatively small sample size. A number of questionnaires were only partially completed and several were not returned. It is therefore recommended that future research should take cognisance of this problem by reducing the number of items to a more acceptable number. This would enable respondents to complete the questionnaire much faster.

A number of respondents had problems with understanding some of the items. This might be due to the fact that the entire questionnaire was in English while respondents included Indians, Afrikaners and predominantly Africans of various ethnic backgrounds. This problem explains the deletion of certain items especially in the case of the UWES. Future studies should therefore not replicate this problem.

The lack of valid and reliable instruments for measuring stress, burnout and engagement among civil servants has been a problem. The study has confirmed the MBI-GS, UWES and the *ASSET* as reliable measuring instruments for use among civil servants. In the case of the MBI-GS, Item 13 was removed. It is recommended that Items 9, 11, 14 and 15 of the UWES be removed or translated into the native languages of the respondents in a future study. It is recommended that the psychometric dimensions of the *ASSET* be further tested among civil servants. Although, after the addition of some items, the study found that the MBI-GS is a four-factor structure and the UWES is a two-factor structure, it is important that further investigations be done to validate these findings because the factors still showed some evidence of misfit.

The absence of a longitudinal study in this field of study remains a problem. Due to time constraints, the design of the study was synchronic, which, according to Demerouti, Bakker, Nachreiner, & Schaufeli (2000), prevents more complex forms of non-recursive linkages from

being examined. The present study could not therefore resolve this problem. It is recommended that a longitudinal study be used in future research. The present study is also based on self-report measures, which, according to Spector and Jex (1991), leaves room for such data to be contaminated by common method variance, because both the dependent and independent variables tend to rely upon only the information from the respondents. Therefore, it is recommended that future studies should not depend solely on self-report measures, but that rather appropriate designs should be considered alongside.

Another problem has been the lack of systematic studies into the levels of stress, burnout and engagement with biographical variables like age, gender, and length of service in the civil service. This study found that there are no statistical significant differences between stress, burnout and engagement variables and the biographical variables of the sample of civil servants. Because this is one of the few studies in this field of study on civil servants in South Africa, it is recommended that future studies should delve into this problem with even larger samples.

REFERENCES

- Arbuckle, J. L. (1997). *Amos user's guide version 3.6*. Chicago, IL: Smallwaters.
- Byrne, B. M. (1993). The Maslach Burnout Inventory: Testing for factorial validity and invariance across elementary, intermediate and secondary teachers. *Journal of occupational and Organizational Psychology*, 66, 197-213.
- Coetzee, S. E., & Rothmann, S. (2004). An adapted model of burnout for employees at a higher education institution in South Africa. *South African Journal of Industrial Psychology*, 30(3), 29-40.
- Coetzer, W. J., & Rothmann, S. (2006). A model of work wellness of employees in an insurance company. *South African Journal of Business Management*.
- Csikszentmihalyi, M. (1990). *Flow. The psychology of optimal experience*. New York: Harper.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2000). A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing*, 32, 454-464.
- Demerouti, E, Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499-512.
- Entec Corp (2004). *Measuring company health*. Retrieved January 28, 2004, from
- Hockey, G. J. (1997). Compensatory control in the regulation of human performance under stress and high workload: A cognitive-energetical framework. *Biological Psychology*, 45, 73-93.
- Jackson, L. T. B., & Rothmann, S. (2005). An adapted model of burnout for educators in South Africa. *South African Journal of Education*, 25(2), 100-108.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Mann, C. J. (2003). *Observational research method*. Retrieved on July 26, 2006 from the World Wide Web: <http://emj.bmjournals.com/cgi>
- Maslach, C., & Leiter, M. P. (1997). *The truth about burnout*. San Francisco, CA: Jossey-Bass.
- Naudé, J. L. P., & Rothmann, S. (2004). The validation of the Utrecht Work Engagement Scale for emergency medical technicians in Gauteng. *South African Journal of Economic and Management Sciences*, 7(3), 459-468.
- Nelson, D. L., & Simmons, B. L. (2003). Work psychology and work stress: A more positive approach. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 97-119). Washington, DC: American Psychological Association.

- Oltwagen, J. (1993). IPM symposium on post traumatic stress held on 24th August. Retrieved on October 9, 2002, from the World Wide Web: <http://memberss.freemail.absa.co.za>
- Salanova, M., & Schaufeli, W. B. (2000). Exposure to information technology and its relation to burnout. *Behaviour and Information Technology*, 19, 385–392.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25, 1-23.
- Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London: Taylor & Francis.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The Measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies*, 3, 71-92.
- Schutte, N., Toppinen, S., Kalimo, R., & Schaufeli, W. B. (2000). The factorial validity of the Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and nations. *Journal of Occupational and Organizational Psychology*, 73, 53-66.
- Spector, P. E., & Jex, S. M. (1991). Relations of job characteristics from multiple data sources with employee affect, absence, turnover intentions, and health. *Journal of Applied Psychology* 76, 46-53.
- Storm, K., & Rothmann, S. (2003b). The validation of the Utrecht Work Engagement Scale in the South African Police Services. *South African Journal of Industrial Psychology*, 29(4), 62–70.