BURNOUT, WORK ENGAGEMENT AND SENSE OF COHERENCE IN FEMALE ACADEMICS AT TWO TERTIARY EDUCATION INSTITUTIONS IN SOUTH AFRICA

by

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submitted in accordance with the requirements for the degree of

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PROMOTOR: PROF F VAN N CILLIERS

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PREFACE

Work is a strange medicine ("een eigenaardig medicijn"); leading to illness as well as health (Achterhuis, 1984).
ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to the following people who made the completion of this thesis possible:

- My husband, Gerhard, for his love, support and continued assistance throughout this research project.
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- The female academics, who contributed their time and shared their personal life experiences with me. Without them this study could not materialise.
- Mrs. M. Coetzee for the professional statistical analysis.
- Mrs. M. Joubert for the professional language editing.

Thank you

Adéle Bezuidenhout
DECLARATION

Student number: 3653-716-0

I declare that the thesis, "Burnout, work engagement and sense of coherence in female academics at two tertiary education institutions in South Africa", is my own work, and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

[Signature]

(MRS A BEZUIDENHOUT)

[Date] 22/5/2009
SUMMARY

BURNOUT, WORK ENGAGEMENT AND SENSE OF COHERENCE IN FEMALE ACADEMICS AT TWO TERTIARY EDUCATION INSTITUTIONS IN SOUTH AFRICA

by

ADÉLE BEZUIDENHOUT

DEGREE: D LITT ET PHIL
SUBJECT: INDUSTRIAL AND ORGANISATIONAL PSYCHOLOGY
PROMOTOR: PROF FVN CILLIERS

Female academics in higher education institutions face numerous challenges in the continuously changing landscape of South African Higher Education. Numerous mergers between different institutions, increasing job demands, ever increasing class sizes and the unique demands of role conflict, inherent to the female role, contribute to the manifestation of stress and burnout (BO) in this population group.

The research is conducted from a salutogenic paradigm, seeking to find ways of avoiding the negative consequences of BO and contributing towards the positive experience of Work Engagement (WE) for the female academic. The research also explores the effect of the individual academics' Sense of Cohrence (SOC) on the experience of BO and WE.

The research is quantitative in nature. A psychometric instrument was sent to all the permanently employed female academics employed by Unisa and TUT, measuring their levels of BO, WE and SOC. The completed questionnaires were statistically analysed.
The findings included average levels of BO, with definite signs that the experience of BO is on the increase. The Cy sub-dimension of BO showed increased levels. The WE scores of the female academics were just above average. The SOC scores of the female academics were low.

The main recommendations were that University management need to take cognisance of the symptoms of BO that are present in this population. Strategies need to be put in place to address these issues and the experience of WE need to be treasured and grown through definite actions from Management. Female academics also need to take personal responsibility for their own wellness and act on the initial signs of BO, rather than dismissing it as mere tiredness or lack of energy. There are also a number of recommendations on actions to be taken to experience WE in the academic work that the population undertake on a daily basis.

**KEY TERMS:** BO, WE, SOC, female academic, tertiary institution, MBI, UWES, SOC-questionnaire, salutogenic paradigm
OPSOMMING

UITBRANDING, WERKSBEGEESTERING EN KOHERENSIESIN IN VROUE AKADEMICI BY TWEE TERSIERE OPVOEDINGSINSTELLINGS IN SUID-AFRIKA

deur

ADÉLE BEZUIDENHOUT

GRAAD: D LITT ET PHIL
VAK: BEDRYFS-EN ORGANISASIESIELKUNDE
PROMOTOR: PROF FVN CILLIERS

Vroue-akademici verbonde aan tersiêre instellings, staar vele uitdaginge in die gesig, in die voortdurend veranderende landskap van Suid-Afrikaanse Hoër Opvoedkunde. Talle samesmeltings tussen verskillende instellings, verhoogde posvereistes, immer vergrotende klasse en die unieke vereistes van die rolkonflik, eie aan die vroulike rol, dra by tot die manifestasie van stres en uitbranding in hierdie populasiegroep.

In ’n poging om maniere te vind waarop die negatiewe gevolge van uitbranding vermy en die positiewe belewing van werksbegeesterin vir die vroue akademikus bevorder kan word, is die navorsing onderneem vanuit ’n salutogene paradigma. Die navorsing ondersoek ook die effek van die individuele akademikus se koherensiesin op die ervaring van uitbranding en werksbegeesterin.

Die navorsing is kwantitatief van aard. Ten einde hulle vlakke van uitbranding, werksbegeesterin en koherensiesin te meet, is ’n psigometriese toetsbattery
aan al die permanente vroue akademici, in diens van Unisa en TUT, gestuur.

Die voltooide vraelyste is statisties ontleed.

Die bevindinge het gemiddelde vlakke van uitbrading aangetoon, met definitiewe tekens dat die belewing van uitbrading besig is om te verhoog.

Die siniese sub-dimensie van uitbrading het verhoogde vlakke aangetoon.

Die werksbegeesterings-tellings van die vroue akademici was net bo gemiddeld. Die koherensiesin-tellings van die vroue akademici was laag.

Die hoofaanbevelings was dat Universiteitsbestuur kennis moet neem van die simptome van uitbrading wat in hierdie populasie presenteer. Strategieë moet in plek gestel word om hierdie aspekte aan te spreek, die belewing van werksbegeesterings moet na waarde geskat en bevorder word deur duidelike aksies van bestuur se kant af. Vroue-akademici moet persoonlik verantwoordelikheid neem vir hulle eie welsyn en behoort op te tree met die aanvanklike tekens van uitbrading, eerder as om dit af te maak as blote moegheid of gebrek aan energie. Daar is ook 'n aantal aanbevelings rakende aksies wat geneem moet word om die ervaring van werksbegeesterings in die akademiese werk, wat die populasie op 'n daaglikse basis onderneem, te bewerkstellig.

SLEUTELWOORDE: uitbrading, werksbegeesterings, koherensiesin, vroue-akademici, tersiêre instelling, MBI, UWES, SOC-vraelyst, salutogeniese paradigma
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CHAPTER 1

ORIENTATION TO THE RESEARCH

1.1 INTRODUCTION

The scientific background to the research is sketched in chapter 1. The manifestation of burnout (BO), work engagement (WE) and sense of coherence (SOC) in female academics in the tertiary education system in South Africa is explored and the rationale for the need for the research outlined. A problem statement is formulated and the research questions listed. The aims of the research are set out. An explanation of the paradigm perspective guiding the research follows. Finally, the research design and methodology to be followed in the empirical study is explained and the chapter layout delineated.

1.2 ORIENTATION AND SCIENTIFIC BACKGROUND TO THE RESEARCH

In a publication of the World Health Organisation, entitled “Global strategy on occupational health for all”, it was noted that occupational health and the well-being of working people are crucial prerequisites for productivity and are of utmost importance for overall socioeconomic and sustainable development (WHO, 2000). Spielberger and Reheiser (2005) note that the significant impact of poor health in the workplace, has influenced global agencies, such as the United Nations, negatively. The WHO (2000) has subsequently declared that every citizen in the world has a right to healthy and safe employment and to a work environment that enables him or her to live a socially and economically productive life.

In the following section, the background to the problem will be sketched. The different levels on which employee BO have negative implications will be
argued. Specific attention will be paid to the costs incurred by the individual, organisation, care recipients and South African society as a whole. The problems inherent in the helping professions, in which there is an extremely high occurrence of staff BO, will also be studied.

Nelson and Simmons (2005) advocate a new trend in research, in which, instead of simply trying to prevent the negative, promotion of the positive and the recognition and generation of positive paradigms in organisations are studied. A brief overview of the challenges facing the academic in the current South African context is given. The need for a positive approach in the scientific study of employees' experience of their jobs is investigated. Lastly, the reasons will be argued why female academics, specifically, need to be targeted in research of this kind. Zani and Pietrantoni (2001) postulate that much of the occupational literature, reports data on males only. Consequently, gender issues are not adequately addressed and the results published are inconsistent.

1.2.1 The challenge of the escalating costs of deteriorating employee well-being

Deteriorating employee well-being leads to costs incurred at four different levels of analysis, namely at individual, group, organisational and national level. Hence, negative consequences are experienced at individual psychological level, at an interpersonal level regarding the relationships with the family, colleagues, learners and society in general.

(a) Individual level

Figley, Burgess and Mitchell (1994) indicate that, when morale drops, people's home lives start to deteriorate, personality deteriorates, and there is ultimately an overall decline in health. Viviers (1998) refers to research conducted in a South African insurance company that found that between 75 and 90% of doctor's visits are stress related, resulting in financial costs in
terms of decreased health and well-being. Czakan (2004) argues that job BO can severely affect an employee's ability to reach his or her true career potential and that it impairs his or her home life and relationships. Furthermore, educators suffering from BO, show significant reductions in their motivation, resulting in a decline in the quality of their teaching and learning (Huberman, 1993; Whitehead, Ryba & O'Driscoll, 2000).

(b) **Group level**

Since the majority of academics in institutions of higher education have close contact with groups of learners through their lecturing, facilitation and mentoring role, the impact of their BO on groups of recipients (learners) cannot be underestimated. Huberman (1993) predicts that BO in educators has negative implications for all role players in the educating profession. He pays specific attention to the decline in the quality of teaching and learning of burnt-out educators. Such educators are less motivated, put in less effort and are less patient and optimistic. This, in turn, has a significant negative effect on learner's growth and learning capacity (Pines, 2002; Whitehead et al., 2000).

(c) **Organisational level**

Organisations are becoming increasingly aware of issues of employee well-being (Hooper, 2004). The negative economic effects of ill-health in the organisation stem from withdrawal and nonproductive behaviours (Gibson, Ivancevich & Donnelly, 1991). Kearns (1973) indicated that withdrawal behaviour in organisations led, for example, to an increase in absenteeism associated with psychological health by 152% for men and 302% for women. The cost of absenteeism (for approximately 10 days per year) can cost the organisation more than 4% of the employee's annual salary (Viviers, 1998). Lower productivity, energy loss, absenteeism, turnover, substance abuse and real or imagined pain disorders are listed as stress related costs to the organisation (Daniels & Harris, 2000).
(d) National level

Sunter (1987) identifies education as the key to a country's success; and education as the primary characteristic of a "winning nation". Jerling (1996) notes that there is a common perspective among South Africans that South Africa struggles to compete globally, because of the poor quality of education in the country. Mostert, Jackson and Montgomery (2004) argue that the number of burnt-out educators in South Africa could lead to a decline in the quality of education, thus, affecting the future of the country in a negative way.

1.2.2 Challenges faced by employees in human services careers

According to Koustellios (2001), there has been considerable interest in the problem of BO in recent years- particularly in the field of the human service professions. The construct, however, has been studied predominantly from a "pathogenic" paradigm. The effect of BO is found to be the highest among people in the so-called "people careers" such as social workers, police workers, managers and nurses (Cilliers 2002; Redelinghuys & Rothmann, 2004).

Maslach, Schaufeli and Leiter (2001) define BO as a long-term stress reaction that occurs mainly among professionals who do people work of some kind. Academic staff, in higher education institutions are thus likely candidates for BO because of their relationship with large numbers of students, staff and administration (Blix, Cruise, Mitchell & Blix, 1994). Beard (1990) argues that the gravity of these interpersonal relationships is the dominant source of stress in the teaching profession. This profession is generally regarded as one of the most stressful occupations in the world, largely because it is so emotionally draining.
1.2.3 The challenges faced by higher education institutions in post-apartheid South Africa

Van der Linde, Van der Westhuizen and Wissing (1999) propose that many female educators experience the changes in the South African educational system as traumatic. The adjustments associated with these changes, together with the normal female role expectations and busy work schedules, result in continuous stress experiences. In order to understand the background against which female educators are navigating their way through a novel and uncharted landscape, a brief overview of the changes in South African higher education is imperative.

In an attempt to move away from the ethos and struggle inherited from the apartheid educational era towards a democratic society, higher education institutions in South Africa are involved in continuous transformation (Dlamini, 1995). This is a significant stress-inducing factor among academics in all spheres. The transformation of the education sector in terms of size and shape without any supporting structures in place (Wiese, 2008), has put an extra strain on educators (Mostert et al., 2004). Vast changes took place, including numerous mergers between different institutions with resulting transfers of personnel, redeployment and retrenchments in all staff categories. According to Wyngaard and Kapp (2004), the Higher Education Act of 1997, the Higher Education White Paper and the National Plan for Higher Education, paved the way for a size and shape document, which recommended the reduction of the number of tertiary institutions. An investigation into the full range of possible combinations of higher education institutions, as well as the establishment of a single distance education institution (Unisa), was undertaken.

According to Wiese (2008), Kader Asmal, the then Minister of Education, announced the government’s proposal for the restructuring of higher education in South Africa on 31 May 2002. Mergers between various educational institutions in the country were proposed as being necessary for
the restructuring process with the idea that the new, comprehensive institutions, would allow increased student access and mobility (Wiese, 2008).

As a consequence of the above changes, a totally new higher education landscape emerged, formed by large-scale mergers, take-overs and closures. Universities and technikons were reduced from 36 to 21. A number of technikons became universities of technology, for example Tshwane University of Technology (TUT). The merger of technikons and universities resulted in the establishment of new comprehensive universities (Park, 2003), such as the University of Johannesburg (UJ). TUT was formed from Technikon Pretoria, Technikon Northern Gauteng and Technikon North-West. The Technikon of South Africa and the University of South Africa merged to form one comprehensive distance education institution, namely Unisa (Wiese, 2008).

Besides challenges such as restructuring, other challenges include the demand for high-level research and academic planning, as well as top-quality academic programmes. Governance, equity and labour issues, data collection, the reporting frameworks to the Department of Education and the changes in the funding formula are all major components of change initiatives in higher education (TUT, 2006).

1.2.4 The challenges in terms of the ever-increasing job demands faced by academics

Many educators enter the academic world eager to teach, experiment and create, only to experience that the fire to teach dwindles swiftly to a mere spark. Excessive paperwork, student discipline problems, insensitive administrators and a lack of promotional opportunities, often lead to BO in the once dedicated and enthusiastic educator (Flemming, Barton & Stanne, 1998).
Regarding the specific job demands of the academic, Barkhuizen, Rothmann and Tytherleigh (2004) state that academics are not only required to fulfil multiple roles (teacher, researcher, counsellor, adviser, facilitator, colleague, marketer, tutor, writer and manager), often simultaneously, but are also required to make paradigm shifts, adopt new policies and practices and approach their professional endeavours in new and innovative ways. While such supplementary tasks can be considered a healthy diversification of one’s job, the toll on faculty from these added responsibilities, closer scrutiny and dwindling resources may well be a significant cause of job strain, commonly labelled “BO” (Barkhuizen et al., 2004).

The changing nature of academic work appears to have led to a considerable increase in job demands without corresponding increases in job resources. According to Schaufeli and Enzman (1998), BO develops in response to these job stressors (job demands and a lack of resources). The first stage of BO is characterized by an imbalance between resources and demands that eventually leads to feelings of Ex (Maslach & Leiter, 1997). Next, a set of negative, indifferent or overly detached attitudes develops (Cy). Vandenberghe and Huberman (1999) observed that contact with people is reduced to the bare minimum required to get the job done. Finally, RPE develops when the professional feels incompetent and unsuccessful in achieving his or her goals or providing a service (Maslach & Leiter, 1997). According to Barkhuizen et al. (2004), the occurrence of BO in the academic profession should be considered serious, since it affects academics' traditional roles of teaching, research and service.

Raijmakers (2004) mentions a number of job demands that academics list as contributing factors to the stress experienced. These include a large diversity of tasks, lecturing load, course development, heavy administrative load, family responsibilities, the writing of articles, the transformation processes, multiple meetings and the absence of fellow researchers to test ideas against. Raijmakers (2004) found that these job demands have an extremely negative impact on the research productivity of academics.
The current academic environment makes employees particularly prone to Ex (Blaxter, Hughes & Tight, 1998). What started out as important, meaningful and challenging work, becomes unpleasant, unfulfilling and meaningless. Energy turns into Ex, involvement becomes Cy and efficacy develops into ineffectiveness (Maslach & Leiter, 1997). The ever-growing job demands faced by the academic, combined with dwindling resources, thus undoubtedly have the potential of turning the dedicated, energetic and efficient academic into a burnt-out, exhausted and ineffective employee.

1.2.5 The challenges in terms of the ever-increasing role conflict faced by female academics

Greenglass (2002) proposes that the work sphere is a primary source of stress for women. Her research indicated that women are more likely than men to face pay inequities, sex discrimination and underutilisation of skills, which are all positively related to stress. She adds that women are more than likely primarily responsible for children, regardless of their employment status. The care of elderly family members is also more likely to be associated with the female gender role.

International research has to some degree studied gender-specific aspects of BO and WE (Oswald, 2004). The relationship between BO and gender is extremely complex. Conflicting results are reported by different authors conducting different research projects (Donohue & Heywood, 2004, Tytherleigh, 2004). The one small but consistent difference is that women score slightly higher on Ex and men on depersonalisation (Maslach et al., 2001).

Tytherleigh (2004) labels work-life balance and occupational stress as a "woman's issue". Gender differences in the sources and outcomes of work-related stress in higher education institutions have received much attention globally and the results have been mixed (Donohue & Heywood, 2004, Tytherleigh, 2004). Some indications that employees with a higher level of
education were more prone to experience BO, than less educated employees (Schaufeli & Enzman, 1998), were found. They argue that the reason for this could be the higher expectations of educated individuals or the fact that they might occupy positions with more responsibility. According to Tytherleigh (2003), the levels of occupational stress reported by women working in higher education are contingent on job-related factors, such as occupational group, seniority, job roles and traditional beliefs about their roles.

Blix et al. (1994) stress the “misfit” experienced by employees between their effort and the rewards they receive. Female teachers at universities reported more misfit than males, which leads to a number of observations. Blix et al. (1994) argue that females might perceive fewer initial career options and thus find themselves in disciplines that they might not find internally as rewarding as their male colleagues. Blix et al. (1994) contend that female university teachers might select academia as a career choice because of the perception that discrimination limits their rewards and opportunities in the private sector. A third reason advanced by Blix et al. (1994) is that female teachers might experience more role conflict in trying to balance the responsibilities of home and work. When women accept the dual roles of work and homemaking, they are confronted with lifestyles and life demands that differ from the demands made on a married employed man (Greenglass, 2002; Henning & Jardim, 1979; Rossi, 1980). Career development requires increasing investment of personal resources in occupational activities. Discrepancies between women’s socialised expectations, personal needs and actual life demands can cause them to experience incongruence between their various role requirements (Greenglass, 2002; Van Rooyen, 1981).

Evidence exists in the literature that female university teachers report higher stress levels than male university teachers (Brown et al. 1986; Richard & Kieshok, 1989). Fewer female role models and more role conflict are cited as possible reasons for this occurrence. An attitude survey conducted at TUT (TUT, 2006) during July to October 2006 found that 39% of the female employees experienced unfair discrimination in the workplace, based on their
gender. This is significantly higher than the percentage of their male counterparts (27.9%) who felt discriminated against.

Nelson, Burke and Michie (2002) write that gender studies focus mainly on preventing distress. They believe that it is necessary for a more positive approach to be adopted, thus studying gender differences as they relate to generating eustress and enhancing health. Eustress involves the presence of positive psychological states. Simmons (2000) advocates the necessity of studying active WE with the job. Nelson et al. (2002) propose that gender differences thus need to be explored in terms of positive emotional states, rather than simply focusing on the negative emotional states. If the distress response differs by gender, as indicated by Taylor, Klein, Lewis, Grunewald, Gurung and Updegraff (2000), there is a high probability that positive emotional states may also differ by gender. One of the purposes of this research project is to investigate the positive emotional experiences of female academics.

1.2.6 The constructs BO, WE and SOC

For the purposes of this research project, these concepts are operationally defined as follows:

(a) Burnout (BO)

Maslach and Jackson (1986) originally defined BO as a syndrome of emotional Ex, depersonalisation and RPErsonal accomplishment that may occur among individuals who do “people work”. In response to the need for a more inclusive definition, Maslach et al. (2001) redefined BO as a pathogenic construct that is characterised by a syndrome of Cy and reduced professional efficacy. These new terms could also be applied to jobs outside of the traditional “people work” sphere.
Schaufeli and Enzman (1998) define BO as a persistent, negative, work-related state of mind in "normal" individuals, primarily characterised by Ex and accompanied by distress, a sense of reduced effectiveness, decreased motivation and the development of dysfunctional attitudes and behaviours at work.

(b) Work engagement (WE)

Research on the WE concept has taken two related but different paths (Storm, 2002). Maslach and Leiter (1997) describe WE as being characterised by energy, involvement and efficacy, which are regarded as the direct opposites of the three BO dimensions, namely Ex, Cy and lack of PE respectively. Maslach and Leiter (1997) indicate that focusing on WE, means focusing on the energy, involvement and effectiveness that employees bring to and develop through their job. They believe that a focus on WE builds more effective organisations.

Schaufeli and Enzman (1998) partly agree with Maslach and Leiter’s (1997) description, but from a different perspective, define and operationalise WE in its own right. Schaufeli (2004) consider BO and WE to be opposite concepts that should be measured independently with different instruments. According to Schaufeli and Bakker (2001), two dimensions of WE are logically related to BO, namely Vi (Ex) and De (Cy). Vi refers to the activation dimension of well-being, while De refers to identification with work. However, Ab and PE seem to be less related than the other two dimensions, although both dimensions could also be regarded as components of WE (Rothmann, 2002). According to this framework, BO is characterised by a combination of Ex (low activation) and Cy (low identification), whereas WE is characterised by Vi (high activation) and De (high identification).

Schaufeli (2004) has consequently defined WE as a positive, fulfilling, work-related state of mind characterised by Vi, De, and Ab. WE does not refer to a momentary and specific state, but instead to a more persistent and pervasive
affective-cognitive state that is not focused on any particular object, event, individual or behaviour.

(c) Sense of coherence (SOC)

The shift towards the positive psychological direction, representing a move away from the pathogenic paradigm, towards a more salutogenic paradigm, led to the development of the salutogenic construct, SOC (Redelinghuys & Rothmann, 2004). Antonovsky (1987) and Loye (2000) hold that humans are able to make sense of their reality despite increased complexity. Antonovsky (1987) postulates that it is the particular way in which an individual appraises or understands his or her environment, referred to as SOC, which allows him or her to make sense out of complex environments. SOC is conceptualised as a psychological, global orientation that influences the way in which individuals understand their environments and can therefore give rise to individual differences in behaviour.

Antonovsky (1987) defined SOC as a global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic, feeling of coherence manifesting in three behavioural experiences: (1) The stimuli deriving from one’s internal and external environments in the course of living are structured, predictable and explicable. This is called Co, where the individual makes sense of the stimuli in the environment. (2) The belief that resources are available to one to meet the demands posed by these stimuli. This is called Ma, where the individual is able to cope with the demands of the environment. (3) The belief that these demands are challenges worthy of investment and WE. This is called Me, where the individual is able to identify emotionally and commit effort in handling these demands.

(d) The relationship between BO, WE and SOC

The question arises whether a strong SOC can prevent a major threat such as BO (Rothmann, Scholtz, Rothmann & Fourie, 2002). A person with a strong SOC is likely to see stressful situations as less threatening, which could
contribute to lower levels of BO (Antonovsky & Sagy, 1985). Feldt (1997) found that, as the level of SOC strengthened, the scores of BO (specifically emotional Ex) decreased. Gilbar (1998) also reports that individuals with a strong SOC experience less BO than those with a weak SOC. Levert, Lucas and Ortlepp (2000) found that people in the caring professions, with a strong SOC and a manageable workload, will be far less likely to experience emotional Ex and depersonalisation. Levert et al. (2000) also reported a significant negative correlation between two components of BO (emotional Ex and depersonalisation) and SOC.

1.3 PROBLEM STATEMENT

From the above discussion, it is seems that the BO of employees has serious consequences for the individual, workgroup (colleagues), learners (or other care recipients), employer organisations and society as a whole. Consequences include, for example, deterioration in the quality of service that is provided to internal and external clients (Golembiewski, Boudrau, Munzenreider & Luo, 1996; Maslach & Jackson, 1986).

Limited research has been conducted from a salutogenic paradigm in organisational psychology. Factors such as WE and psychological strengths are fairly novel and have not yet received the attention they deserve in academic research (Rothmann, 2002). Salutogenic functioning refers to those internal driving forces that enable an individual to stay well, succeed and thrive amidst stressful circumstances in life (Rosenbaum, 1990).

Psychology, with its emphasis on human suffering, has been criticised for focusing too much on pathology instead of positive outcomes in the work environment (Diener, Suh, Lucas & Smith, 1999.) Rothmann (2002) found that, since 1996, only 6% of the articles published in the Journal of Occupational Health Psychology, have focused on the positive aspects of health and well-being. The other 96% have focused on BO, stress, post-traumatic stress disorder, conflict and psychosomatic complaints. Diener et al.
(1999) and Schaufeli (2004) report a negative versus positive ratio of journal published articles of 17:1. In their study, Seligman and Csikszentmihalyi (2000) advocate the drive “towards a positive psychology”.

A similar trend is observed concerning research on the female gender. Nelson et al. (2002) criticise existing gender studies because they believe the focus is mainly on preventing distress. They contend that it is necessary for a more positive approach to be adopted, thus studying gender differences as they relate to generating eustress and enhancing health. Eustress involves the presence of positive psychological states (Simmons, 2000). Furthermore, the role of work (goal-directed, structured activity) seems to be essential for psychological health. He advocates the necessity of studying active WE with the job, meaningfulness and hope.

Nelson et al. (2002) also propose that gender differences need to be explored in terms of positive emotional states, instead of simply focusing on the negative emotional states. If the distress response differs by gender, as indicated by Taylor et al. (2000), there is a high probability that the positive emotional states may also differ by gender.

No study in South Africa could be found that addresses the relationship between BO, WE and SOC, specifically amongst female academics. The contribution towards understanding the manifestation of BO, WE and SOC in female academics underlines the significance of this research project in studying the above-mentioned phenomenon. The results of this research will furthermore make a valuable contribution towards the growing body of knowledge in positive psychology and towards the salutogenic and fortigenic paradigm.

This study aims to contribute to the body of literature on “positive psychology”, focusing specifically on the manifestation of BO, WE and SOC in the “female academic” in higher education institutions.
Rothmann (2002) notes the need for research exploring the effectiveness of interventions to (1) stimulate psychological strengths and WE and (2) to manage BO in diverse work settings. According to Rothmann (2002), research needs to be conducted not only in the helping professions, but also in other professions and occupations in South Africa. Based on their study of occupational stress among university teachers, Blix et al. (1994) conclude that research is needed to further understand why female teachers experience more stress symptoms than their male colleagues.

In an effort to address the above research need, this study was undertaken in order to investigate and describe the manifestation of BO, WE and SOC in female academics. The relationship between the constructs will be studied and described. On the basis of this research, it will be possible to recommend management strategies to facilitate employee wellness in female academics. An effort will also be made to suggest self-management techniques to the female academics.

A number of research questions can be formulated on the basis of the BO-WE phenomenon, taking into account the moderating effect of SOC in female academics:

- Can BO, WE and SOC in female academics be theoretically studied, analysed and described in South African tertiary institutions?
- Can BO, WE and SOC in female academics be empirically studied, analysed and described in South African tertiary institutions?
- Can a statistically and practically significant relationship between BO, WE and SOC in female academics in South African tertiary institutions be identified?
- Does a strong SOC have a moderating effect on the levels of BO experienced by female academics?
- Does a strong SOC have a moderating effect on the levels of WE among female academics?
• Can any significant differences in BO, WE and SOC levels be identified on the basis of the biographical variables?
• What recommendations for future research on BO, WE and SOC can be made?

1.4 AIMS OF THE RESEARCH

A general aim of the research is formulated to act as a holistic aim for the entire project. The specific aims of the research will be presented in terms of both the literature survey and the empirical study.

1.4.1 General aim

The general aim of this research was to determine the manifestation of BO, WE and SOC levels and examine the relationship between these constructs, in female academics at two tertiary education institutions in South Africa.

1.4.2 Specific aims

In terms of the literature review, the scientific aims are to provide support for the empirical aims, and in particular

• to explore, analyse, evaluate and describe the BO construct among female academics at tertiary institutions
• to explore, analyse, evaluate and describe the WE construct among female academics at tertiary institutions
• to explore, analyse, evaluate and describe the SOC construct among female academics at tertiary institutions
• to explore, analyse, evaluate and postulate a theoretical relationship between BO, WE and SOC
• to determine whether the sample under investigation experiences significant levels of BO
to determine whether the sample under investigation experiences significant levels of WE

- to determine whether the sample under investigation experiences significant levels of SOC

- to determine whether there is a statistically and practically significant relationship (correlation) and regression between BO, WE and SOC among female academics at two tertiary institutions in South Africa and to explore the nature of this relationship

- to explore the influence of biographical variables on BO, WE and SOC among female academics at two tertiary institutions in South Africa

- to make recommendations on the basis of the literature review and the empirical study on how BO can be avoided and WE of female academics can be facilitated, through management strategies, industrial and organisational interventions as well as through self-management techniques

1.5 PARADIGM PERSPECTIVE

Mouton and Marais (1992) explain that specific scientific communities acknowledge certain academic achievements as the basis for further research. These beliefs are referred to as paradigms. The purpose of the paradigm perspective is to define the research in the niche of the relevant research context (Mouton & Marais, 1992). Paradigms refer to collections of meta-theoretical, theoretical and methodological beliefs selected from a particular field. The paradigm that will guide the flow of this research project is the salutogenic paradigm (Antonovsky, 1987). In order to promote an understanding of the development and philosophy of this paradigm, it is necessary to study the various relevant psychological theories that ultimately culminated in the salutogenic paradigm.
1.5.1 The development of the salutogenic paradigm

For many years industrial organisational psychology has been concerned with stress and its effects on the workforce. Plug, Meyer, Louw and Gouws (1988) define organisational psychology as the study of organisations, the elements and systems that constitute them and the factors that influence their effectiveness. Gibson, Ivancevich and Donnelly (2006) define industrial and organisational psychology as the study of human behaviour, attitudes and performance at individual, group and organisational level.

Redelinghuys and Rothmann (2004) and Linley and Joseph (2004), suggest that the field of psychology, and subsequently organisational psychology, was traditionally dominated by a negative or “pathogenic paradigm”, based on pathology, faults and dysfunctions.

To date, the concept of BO has predominantly been studied from a pathogenic paradigm. The term “burnout” was introduced in the mid-1970s, by Herbert Freudenberger (Freudenberger, 1974; Steyn, Rothmann & Mostert, 2004). He used it to describe the symptoms of emotional depletion and a loss of motivation and commitment among volunteers with whom he was doing unpaid work in an alternative care setting. Freudenberger (1974) argues that the term, “BO”, was initially used in the 1960s to refer to the effects of chronic drug abuse. Steyn et al. (2004) believe that the concept BO, as studied by Freudenberger (1974) fell within the psycho-analytical approach. Maslach (1982), however, primarily studied BO from a social psychology and empirical framework.

While Rothmann (2002) acknowledges that a positive fortigenic perspective would require that concepts such as WE and psychological strengths that could prevent BO should be studied, he argues that the harsh realities of the South African society contribute to BO.

The focus on disease and the vulnerabilities of the individual, studied from a pathogenic paradigm, was gradually replaced by a new focus on the
individual's psychological well-being and skills to cope with the demands of stress, studied from a health and growth psychology perspective, (Coetzee & Cilliers, 2001; Rothmann, 2002). According to Rothmann (2002), humanistic psychology could be regarded as the precursor of positive psychology. Influential humanistic psychologists such as Maslow (1908-1970) and Rogers (1902-1987) sought to expand the content of psychology to include experiences such as love, hope happiness, humour, affection, responsibility and a desire for meaning in life.

According to Aspinwall and Staudinger (2003), although the terms “positive psychology” and “psychology of human strengths” are relatively new, throughout the history of applied psychology and through several paradigms, researchers studied participant strengths, of which examples include organisational psychology (intrinsic motivation and self-determination), educational psychology (creativity, giftedness and talent) psychotherapy (assets, abilities, outcome expectancies, self-efficacy and self-actualisation), behavioural psychology, Gestalt psychology and humanistic models (self-actualisation). Linley and Joseph (2004) define the field of applied positive psychology, as the application of positive psychology research to the facilitation of optimal functioning.

Historically, significant theoretical development in positive psychology and WE is evident. Linley and Joseph (2004) report an increase by a factor of almost 180 between 1978 and 2003. A shift is observed from the pathogenic paradigm to a paradigm of health, psychological strength and well-being, also referred to as the fortigenic paradigm (Cilliers, 2002; Linley & Joseph, 2004; Rothmann, 2002). Wissing and Van Eeden (1997) suggest that the term, “psychofortology”, (the science of psychological strengths) be used for the domain of psychology in which psychological well-being is studied. WE and SOC are thus studied from a positive fortigenic perspective (Rothmann, 2002).

The existence of the salutogenic paradigm as a separate paradigm in positive psychology has subsequently been confirmed (Antonovsky, 1987; Breed,
1997; Strümpfer, 1990). Its emphasis is on the origins of psychological health and wellness, and the term is derived from *salus* (meaning health in Latin) and *genesis* (meaning origins in Greek) (Cilliers & Kossuth, 2004; Rothmann, 2002). The paradigm focuses on normal behaviour and locating and developing personal and social resources and adaptive tendencies which result in coping and growth (Strümpfer, 1990).

Viviers and Cilliers (1999) postulate that salutogenesis refers to "optimalisation" in terms of the use of stress to achieve positive life outcomes— that is, the optimal coping behaviour as generated by a person in the handling of stressors. The construct is represented by a number of concepts. One of the principal concepts is the SOC. Kossuth and Cilliers (2002) list examples of constructs being correlated with SOC in the field of work behaviour, namely stress, BO, self-esteem, life satisfaction, role behaviour, powerlessness and social support.

Strümpfer (1995) proposed that the paradigm be broadened to include sources of strength and named fortogenesis (the origin of strengths), which can be seen as more embracing and holistic than salutogenesis. Strümpfer (1990, 1995, 2004) explains that the fortigenic paradigm can also be applied to BO, to refer to movement in the general direction of health and well-being on the eustress-distress continuum (Rothmann, 2002). It could be proposed that the criteria for psychological well-being and the criteria for psychopathology are largely independent and that well-being and pathology are not only the endpoints of the same continuum.

Concepts that are accepted on a meta-level include stress, wellness, quality of life, coping, happiness, optimism, satisfaction, interpersonal skills, creativity, emotional intelligence, self-actualisation, self-efficacy and wisdom (Aspinwall & Staudinger, 2003).

Schaufeli and Bakker (2004) developed a model to facilitate the research of both BO and WE. This model is presented in figure 1.1.
1.5.2 Theories and models underlying the research

Mouton and Marais (1994) define the term “model” as an attempt to represent the dynamic aspects of the phenomenon by illustrating the relationships between the major elements of that phenomenon in a simplified form. The theories and models applicable to this research include the following:

(a) Research methodology

- the research model (Mouton & Marais, 1992)
(b) Burnout

- the process model of BO (Cherniss, 1995; Golembiewski et al., 1996; Greenglass, 1991; Van Dierendonck, Schaufeli & Buunk, 2001)
- the phase model of BO (Golembiewski et al., 1996; Golembiewski & Munzenreider, 1988)
- the heuristic model of BO (Schaufeli & Enzman, 1998)

(c) Work engagement

- the comprehensive BO and WE (COBE) model (Schaufeli & Bakker, 2004)
- the demand-control model (Karasek, 1981)

(d) Sense of coherence

- the comprehensive SOC model, in terms of salutogenic behaviour patterns (Antonovsky, 1979)

(e) The relationship between burnout, work engagement and sense of coherence

- the COBE model (Schaufeli & Bakker, 2004)
- the integrated BO and WE model (Langaaln, Bakker, Van Doomen & Schaufeli, 2006)

(f) The psychometric model

The psychometric model will be applicable in the empirical stage of the research when the manifestation of the constructs BO, WE and SOC will be measured in the respondents, by means of a psychometric measurement.
1.6 RESEARCH DESIGN

Mouton (2001) describes research design as a plan or blueprint of how the research should be conducted, to maximise the internal and external validity of the research results. Selltiz, Jahoda, Deutsch and Cook (1965) define research design as an arrangement of conditions for collecting and analysis of data, in a manner that aims to combine relevance to the research purpose, with economy in procedure. According to Bennett (1998), research design is synonymous with rational decision making during the research process. In the literature study, the focus will be on conceptualising BO, WE and SOC.

1.6.1 The research model

The model proposed by Mouton and Marais (1992) as an integrated approach to social research is used as a framework for this research. This is done in order to systematically address the five dimensions of social research, namely the sociological, the ontological, the teleological, the epistemological and the methodological dimensions, within the framework of the research process.

The model also presupposes three subsystems, namely the intellectual climate of a specific discipline, the market of intellectual resources in each discipline and the research process itself.

This model (Mouton & Marais, 1992) is presented from a systems perspective in figure 1.2.
Figure 1.2
The research model (Mouton & Marais, 1992)
1.6.2 Types of research

Mouton and Marais (1988) distinguish between exploratory, descriptive and explanatory research. This research can be viewed as a combination of exploratory, descriptive and explanatory research.

The research is partly descriptive in terms of the theoretical presentation of BO, WE and SOC definitions, models and theories. In a descriptive study, accurate information must be collected on the domain phenomenon under investigation (Mouton & Marais, 1992). Accurate and descriptive information was collected and will be presented on BO, WE and SOC.

Exploratory research aims to reach new insights, determine central concepts and constructs and establish research priorities (Babbie, 1989). This type of research explores relatively unknown areas in order to gain insight into phenomena, determine future research priorities and develop new hypotheses. Hence this research is partly exploratory because it compares different constructs with one another and explores the possible relationships between them. Through the use of quantitative techniques, the research will aim to create new insight into the relationships among the constructs as mentioned in the previous paragraphs.

Explanatory research aims to indicate links between variables or an event, attempting to explain a phenomenon in terms of what causes it. The aims of this research include an exploration of the relationship between the various constructs, as well as an explanation of the aetiology of BO, WE and SOC.

1.6.3 Reliability and validity

Regarding the validity and reliability of the research, the epistemological dimension of research refers to the idea that research aims to provide a valid and reliable understanding of reality (Mouton & Marais, 1994). Internal validity at contextual level will also be ensured through the use of models and
theories selected in a representative manner (in the theoretical overview) and the use of measuring instruments selected in a representative manner (in the empirical study).

In this research, validity is improved through the selection of archival resources which are relevant to the problem statement, aim and objectives of the study. Validity will also be ensured by comparing various literature sources with one another. In order to increase theoretical validity as evident in scope, clarity and systemacy, a detailed literature survey of BO, WE and SOC will be presented by means of a predetermined structure. The researcher will attempt to order and identify the central essence of the constructs in a logical and systematic way (Mouton & Marais, 1990).

In order to improve the validity and reliability of the research, the researcher attempted to use recent resources. Furthermore, reliability is improved through adherence to the research design and reference to similar existing research. Through the use of systematic research methodology and discussions with various experts in the field, the research will endeavour to achieve valid and reliable results.

1.6.4 The unit of analysis

The unit of analysis can be described as the individual (Babbie, 1989). The "individual" refers to the female academic, permanently employed by Unisa or TUT.

1.6.5 The research variables

In the empirical study, the constructs to be conceptualised in the literature study, will be measured. A test battery will be compiled and administered consisting of several measuring instruments (surveys), each measuring one of the constructs in the sample. The measuring instrument will be questionnaires. Questionnaires fall within the ambit of a broader definition of
'survey research'. According to Remenyi, Williams, Money and Swartz (2002) a "survey" can be described as the collection of a large quantity of evidence, usually numeric, or evidence that will be converted to numbers, normally by means of a questionnaire. A questionnaire is a list of carefully structured questions, chosen after considerable testing with a view to eliciting reliable responses from a chosen sample. The aim is to establish what a selected group of participants do, think or feel (Watkins, 2006).

On completion of the empirical study, the hypothesis will be tested and statistically and practically significant relationships between the different constructs investigated retrospectively. The quantitative analysis of the data aims to identify meaningful relationships between constructs objectively, in order to determine the objective reality, as measured through the testing battery (Mouton & Marais, 1988).

A cross-sectional survey design will be used to gather information about the sample and achieve the research objectives. Cross-sectional designs are appropriate where groups of subjects at various stages of development are studied simultaneously, whereas the survey technique of data collection gathers information from the target population by means of questionnaires (Burns & Grove, 1993). The entire population of female academics, permanently employed at TUT and Unisa, were contacted and requested to participate in the research. This design can also be used to evaluate interrelationships between variables in a population (Shaughnessy & Zechmeister, 1997). This design can also be used to describe and predict functions associated with correlative research.

1.6.6 The statistical analysis

Statistical analysis were conducted with the help of the SPSS statistical package v15.0 (2001). Descriptive statistics (e.g. means, standard deviations) were used to analyse the data.
Cronbach alpha coefficients were used to measure the internal reliability of the measuring instruments. Correlation research measured the relationship (direction and strength) between different variables (Field, 2005; Papalia & Olds, 1985). The strength of a correlation between variables is expressed by the figure known as the correlation coefficient (r). The relationship between BO, WE and SOC in the target group was explored. Pearson product-moment correlation coefficients were used to specify the relationships between the variables (Byrne, 2001).

Validity was investigated via factor analysis, as well as confirmatory factor analysis. Cattel’s scree test was used to study the factor variance (Cattel, 1977; Pallant, 2001). Confirmatory factor analysis determined if the factors identified, conformed to the theory.

Regression analysis was performed to determine whether BO can be predicted by the presence of WE or SOC, or any of the subdimensions (Field, 2005).

Statistical analysis of variance (f-test) was used to determine the significance of differences, as there were more than two groups (Papalia & Olds, 1985). This was used to determine whether there were any significant differences between groups based on the biographical variables in the target population, for example, in terms of BO, WE and SOC level in the different age groups.

1.7 RESEARCH METHODOLOGY

The research method consisted of two distinct phases, namely a literature review and an empirical overview.
1.7.1 Phase 1: Literature review

An in-depth literature study was undertaken. Relevant literature was procured, studied and analysed. A detailed theoretical presentation of the theory on each of the three constructs will be presented, as follows, in the following chapters:

Step 1:  

*Burnout*

BO will be defined. Various theoretical models will be provided. The aetiology, symptoms and consequences will be discussed. Finally, possible coping strategies will be investigated.

Step 2:  

*Work engagement*

The development of the concept will be studied and then it will be scientifically defined. The applicable theoretical models, aetiology and consequences of the phenomenon will be discussed.

Step 3:  

*Sense of coherence*

SOC will be defined. The theory underlying the development and structure of the construct will be reviewed. The profile of an employee with a strong SOC will be analysed.

Step 4:  

*The relationship between burnout, work engagement and sense of coherence*

The relationship between BO, WE and SOC will be investigated. The moderating effect of a SOC on BO and WE will also be studied.
1.7.2 Phase 2: Empirical study

Step 1: Determine and describe the sample population

The data in this research project were collected from employees at two institutions of higher education in South Africa. All female academics, permanently employed by the University of South Africa (Unisa) and the Tshwane University of Technology (TUT) were contacted and requested to participate in the research project. These participants are represented by the symbol n.

Step 2: Select and assemble the measuring instrument

In the empirical phase of the research a compilation of four questionnaires was be used. A combination of a biographical questionnaire, the Maslach BO inventory (MBI) developed by Maslach and Jackson (1981), the Utrecht WE scale (Schaufeli & Bakker, 2003) and the SOC questionnaire (SOC) (Antonovsky, 1987) formed the instrument used. The content of the respective questionnaires was as follows:

(a) Biographical questionnaire

The following data was collected in the biographical questionnaire: age, number of years employed, population group, marital status, highest completed qualification, current job title and campus of employment.

(b) The Maslach BO inventory (MBI)

The Maslach BO inventory was chosen to measure BO for its (1) conceptual congruence to the definition of BO that will be used in the literature study and its (2) acceptable psychometric qualities provided in the literature (Cilliers, 2002). The MBI measures BO on three subdimensions, namely emotional Ex,
depersonalisation and a reduction in personal accomplishment (Cilliers, 2002). The MBI consists of 16 items that constitute the three scales. All items are scored on a seven-point frequency rating scale ranging from 0 (never) to 6 (always) (Sieberhagen & Rothmann, 2004).

(c) Utrecht WE Scale (UWES)

The UWES was used to measure the levels of WE. WE is a concept that includes three dimensions, namely Vi, De and Ab. The UWES consists of 17 items and is scored on a seven-point frequency rating scale, ranging from 0 (never) to 6 (always) (Sieberhagen & Rothmann, 2004). According to Schaufeli et al. (2002), in Buitendag and Van Zyl (2004), the Cronbach alpha coefficients of the UWES vary between 0,68 and 0,91.

(d) SOC questionnaire (SOC)

Antonovsky (1987) uses the SOC-questionnaire to measure an individual’s SOC. The SOC questionnaire consists of 29 items; 11 measure Co, 10 measure Ma and 8 measure Me (Dhaniram & Cilliers, 2003). The SOC questionnaire is characterised by a consistently high level of cronbach’s alpha as indicated in 26 studies, ranging from 0,84 to 0,93 (Antonovsky, 1987). Rothmann (2000a), in Rothmann and Basson (2002), reported an alpha coefficient of 0,89 for the SOC questionnaire. Antonovsky (1987) also reports that the entire spectrum of focus on the test-retest reliability produced a reliability coefficient between 0,41 and 0,97.

Step 3: The research group was contacted and requested to cooperate. The measuring battery was administered.

All female academics, permanently employed by Unisa and TUT will be contacted and requested to participate in the research project. A letter, inviting them to participate, accompanied by the research instrument, will be sent via the electronic communication network. The instrument will be completed and returned to the researcher via the electronic network.
Step 4: The measuring instruments were scored

Each of the questionnaires in the instrument was scored according to the prescriptions of the developer of the questionnaire. Data was encoded into electronic format to make further statistical analysis possible.

Step 5: The data was statistically analysed

The statistical processing of the data was performed by applying quantitative statistical procedures, using the SPSS statistical package v15.0 (Field, 2001).

Step 6: The results was reported and interpreted

After the results of the empirical section of the research, were quantified, it was reported. Data was analysed and interpreted. Comparisons with the results of other significant studies were made.

Step 7: The integration and conclusion of research

The findings of the theoretical and empirical sections of the research were integrated. Conclusions were drawn on the basis of the integration of the findings.

Step 8: The limitations of the research

The limitations of the research was reflected upon and formulated.

Step 9: Recommendations was made on the basis of the research

On the basis of the results and the limitations of the study, recommendations to be implemented in future studies were made.
1.8 ETHICAL CONSIDERATIONS

The Employment Equity Act of 1998 prohibits psychometric testing and other similar assessments of an employee unless the test or assessment being used has been scientifically shown to be valid and reliable; can be applied fairly to employees, and is not biased against any employee or group (http: // www.labour.gov.za/d ocsllegislation/eea/act98-055.html). Reliability and validity, from a legal and moral perspective, are therefore factors requiring attention when considering an instrument for the measurement of any construct (Jackson, 2004).

All research conducted on the Internet must conform to the rules and spirit of the International Code of Marketing and Social Research Practice, as well as to all relevant legislation such as data protection (SAMRA, 2006).

- The research was conducted confidentially, respecting the individual rights of the respondents. No personally identifiable information was used for any purpose.
- Precautions were taken to protect the security of sensitive data. No confidential information was made available to any other person or institution.

Biographical data are collected for the purpose of making psychometric deductions and comparisons possible. All biographical data will be treated in the strictest confidence and the anonymity of the participants will be protected. The researcher has no intention of identifying various respondents or publishing their names or personal information. There is also no intention to compare the two institutions or judge any institution on the basis of the research data. The concerns of the Ethical Committee of TUT and the Directorate of Human Resource Management at Unisa was observed and respected in this regard.

The institutions had recently experienced complicated mergers and thus had concerns about the publishing of data that could possibly be misinterpreted.
Hence, no psychometric comparisons will be drawn between the two academic institutions and their various campuses; nor between the different hierarchical job levels represented by the sample group in the two institutions.

Data collected in this regard are used purely to describe the nature and compilation of the sample group.

1.9 CHAPTER LAYOUT

The layout of the remaining chapters is as follows:

Chapter 2: Burnout

BO will be defined. Various theoretical models will be provided. The aetiology, symptoms and consequences will be discussed. Finally, possible coping strategies will be investigated.

Chapter 3: Work engagement

The development of this concept will be studied and then defined. The applicable theoretical models, aetiology and consequences of the phenomenon will be discussed.

Chapter 4: Sense of coherence

SOC will be defined. The theory underlying the development and structure of the construct will be investigated. The profile of an employee with a strong SOC will be analysed.

The theoretical relationship between BO, WE and SOC will be explored. An integrated model of the relationship between BO and WE will be presented. The relationship between BO, WE and SOC will be contemplated. The moderating effect of a SOC on BO and WE will be investigated.
Chapter 5: The empirical study

An in-depth discussion of the measuring battery, consisting of a biographical questionnaire, MBI, UWES and SOC, will be provided. The development, administration and interpretation guidelines will be discussed. The validity and reliability of each instrument will be scrutinised. An evaluation of the applicability of the instrument to this particular research project will be conducted and, in conclusion, the reason for the decision to use each instrument will be explained. Existing research will be studied in order to compare and interpret the manifestation of the three constructs used in this study, namely BO, WE and SOC.

Chapter 6: Results

The results of the statistical analysis will be reported, according to the empirical aims of the research. The data will be quantified, analysed, compared and interpreted. Finally, the theoretical and empirical findings will be integrated and discussed.

Chapter 7: Conclusions, limitations and recommendations

The conclusions of this research, the limitations of the project and recommendations for future research projects will be presented in the final chapter.

1.10 CHAPTER SUMMARY

Chapter 1 provided an orientation to the research. A description of the background to the research problem was provided, highlighting the challenges faced in the higher education arena. This culminated in a problem statement on the BO, WE and SOC of female academics in the higher education system in South Africa. The necessity and applicability of the research project was
argued. The aim and objectives of the research were outlined and a paradigm perspective offered. An analysis of the research design, namely the sample population, measuring instruments and statistical analysis, was presented. Finally, an overview of the research methodology and the chapter layout was provided.
CHAPTER 2

BURNOUT

If a woman is sensitive, the professional struggles can be more frustrating than if she is not. If she is empathetic, the suffering and helplessness she sees are more painful. If she knew herself as a caring human being, the realisation that she has become numb to others’ needs is more devastating. Thus the problem of burnout has special relevance for professional women in the human services (Pines, Aronson, Kafry, 1981).

2.1 INTRODUCTION

Pines et al. (1981) believe that the root cause of career burnout lies in people’s need to find existential significance in their lives and the sense that their work does not provide it. Although it has been shown that employees in almost any kind of job can develop burnout (BO) (Rothmann, 2000; Schaufeli & Enzman, 1998), it is a long-term stress reaction that occurs particularly among professionals who do “people work” of some kind (Maslach & Jackson, 1986; Maslach et al., 2001; Zani & Pietrantoni, 2001).

Academic staff employed in higher education institutions, are thus likely candidates for BO because of their relationships with large numbers of students, staff and administration (Barkhuizen et al., 2004; Blix et al., 1994). Pines et al. (1981) and Zani and Pietrantoni (2001) argue that the problem of BO has special relevance for professional women in the human services, because of the role expectations attached to the “female” role. Hence, with specific reference to this study, it is proposed that female academics will be vulnerable to the development and experience of BO, and the negative effects of this psychological state.
2.2 DEFINING BURNOUT

The term “BO” was introduced in the mid-1970s, by Herbert Freudenberger (1974). He used it to describe the symptoms of emotional depletion and a loss of motivation and commitment among volunteers with whom he was doing unpaid work in an alternative care setting. Freudenberger (1974) wrote that the term, “BO”, was initially used in the 1960s to refer to the effects of chronic drug abuse. It was evident from this initial study that BO is not only a condition of the body, but also of the soul, and constitutes a loss of faith in the enterprise of helping. It has physiological, behavioural, psychological, spiritual and clinical dimensions (Gachuta, 2006).

Various definitions of BO appear in the literature. These definitions vary from being overly simplistic, to being extremely complex and vague. Weisberg (1994) warns that BO is a complex condition and difficult to conceptualise. An all-inclusive list of definitions falls beyond the scope of this research. Hence an overview of the important, frequently used definitions is presented, to serve as a foundation for further analysis.

There are mainly two types of definitions, namely process definitions and state definitions. State definitions describe the end result of BO and therefore complement process definitions (Basson, 2002).

2.2.1 State definitions

Freudenberger (1977) describes BO as a downward spiral, an unending cycle of accelerated effort and decelerating reward. This definition inspired a number of theoretical models on BO, such as the ‘conservation of resources’ model of BO (Hobfoll & Shirom, 1993).

Pines and Maslach (1978) argue that BO is a state of physical, emotional and mental exhaustion, marked by physical depletion and chronic fatigue, feelings of helplessness and hopelessness, and the development of a negative self-
concept and negative attitudes towards work, life and other people. Pines (1983) refines this definition as the physical, emotional and mental Ex which typically occurs as a consequence of the long-term involvement with people in emotionally demanding situations.

One of the most frequently cited definitions of BO is that of Maslach and Jackson (1986), namely that BO is a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment that can occur among individuals who do “people work”. In response to the need for a more inclusive definition, Maslach et al. (2001) redefined BO as a pathogenic construct characterised by a syndrome of Cy and RPE. These new terms can also be applied to jobs outside of the traditional “people work” sphere.

2.2.2 Process definitions

This group of definitions emphasised the idea that BO is a gradual process (Cherniss & Egnations, 1978). Cherniss (1980) regards BO as a process of disengagement (which occurs over time) in response to job stress, and as a function of other nonefficacious coping strategies.

Edelwich and Brodsky (1980) refer to BO as the progressive loss of idealism, energy and purpose experienced by people in the helping professions, as a result of the conditions of their work. Similarly Pines et al. (1981) define BO as the result of constant or repeated emotional pressure associated with an intense involvement with people over long periods of time.

Corey (1996) describes the BO syndrome as going beyond physical fatigue from overwork. Although stress and emotional exhaustion are important, the crux of the phenomenon lies in the distancing from clients that arises in response to the overload. “Distancing” is described in much the same way as “depersonalisation” in Maslach and Jakson’s (1986) definition.
Schaufeli and Enzman (1998) define BO as a psychological condition that develops gradually, remaining unnoticed for a long time. Suddenly and unrepentantly one feels totally exhausted, unable to relate this Ex to a particular event.

Schaufeli (2004) offers a comprehensive definition, namely that BO is a persistent, negative, work-related state of mind in “normal” individuals that is primarily characterised by Ex, which is accompanied by distress, a sense of reduced competence, decreased motivation and the development of dysfunctional attitudes at work.

From the above it is evident that BO is a debilitating condition that impacts on an employee’s mind, body and soul (spirituality) (Gachutha, 2006).

2.3 THE DIMENSIONS OF BURNOUT

The dimensions of BO are interrelated, but conceptually distinct. Three dimensions are distinguished in the helping professions, namely emotional Ex, depersonalisation and low personal accomplishment (Gibson et al., 2006; Rothmann, 2002). Most research studies argue for a cosmopolitan application of the three dimensions because they are accepted across nations, as well as across professions (Golembiewski et al., 1996).

Maslach and her colleagues expand the BO concept beyond the human services (Maslach & Leiter, 1997). BO is consequently redefined as a crisis in one’s relationship with work, not necessarily as a crisis in one’s relationship with people at work. Hence it became necessary to revise and rename the three dimensions to include all jobs. This included three somewhat more general aspects that do not explicitly refer to “people work” per se, namely exhaustion, cynicism and reduced professional efficacy (Maslach et al. 1996). An adapted version of the MBI was developed to measure BO in jobs that are not exclusively human services jobs, namely the MBI-GS.
The dimensions of BO are conceptualised as follows:

2.3.1 Emotional exhaustion

Emotional exhaustion (Ex) refers to the depletion or draining of emotional resources. Professionals feel that they are no longer able to "give" themselves on a psychological level (Schaufeli & Enzman, 1998). When people feel exhausted, they feel overextended, both emotionally and physically (Maslach & Leiter, 1997). Involvement is minimised in an attempt to protect the self against Ex and disappointment (Maslach & Leiter, 1997). Perlman and Hartman (1982) explain that Ex can be described as a wearing down, loss of energy, depletion, debilitation and fatigue. Ex is not only physical, but is experienced psychologically as a loss of feeling and concern, as well as of trust, interest and spirit.

Pines and Aronson (1988) include physical, emotional and mental Ex in their definition of this concept of BO. Physical Ex is characterised by low energy, chronic fatigue, weakness and a wide variety of physical and psychosomatic complaints. Emotional Ex involves feelings of helplessness, hopelessness, and entrapment, which in extreme cases can lead to emotional breakdown. Mental Ex refers to the development of negative attitudes towards oneself, one's work and life itself.

Ex and excessive emotional demands are not confined to the human services and are also observed in other occupational settings, such as management (Schaufeli & Enzman, 1988). For the purposes of the MBI-GS, this dimension is referred to simply as the "Ex" dimension, in order to include the Ex experienced in all jobs, and not specifically emotional Ex which is rooted in the interpersonal relationship.
2.3.2 Depersonalisation

"To build a church when you don’t believe in a god seems a little indecent, doesn’t it? When I discovered I was doing that, I accepted a commission for a city hall, but I didn’t believe in politics either. You never saw such an absurd box of concrete and glass as landed on the poor city square" (Greene, 1961, p. 10).

The character in this anecdote provides a typical example of an architect experiencing disillusionment and Cy towards his work. This anecdote serves to illuminate the feeling of total indifference towards the work that he once felt passionate about.

According to Maslach (1982), this dimension is recognised as a response to emotional Ex. Koeske and Koeske (1989) claim that depersonalisation is likely to result from persistent Ex. Leiter (1988), as well as Maslach and Jackson (1984) refer to this dimension as a coping response to job overload, a response to emotional Ex.

Depersonalisation refers to an increase in negative, cynical and insensitive attitudes toward colleagues, clients and/or patients (Rothmann, 2002). They are labelled in a derogatory way and treated accordingly (Schaufeli & Enzman, 1998). When people feel cynical, they adopt a cold, distant attitude towards work and their fellow employees. Involvement is minimised in an attempt to protect the self against Ex and disappointment (Maslach & Leiter, 1997).

Demerouti et al. (2001) describe depersonalisation as a specific kind of withdrawal or mental distancing that may manifest as alienation, disengagement or Cy. Golembiewski and Munzenreider (1988) conclude that this dimension can be seen as a failure to develop and maintain a professional attitude of detached concern.
Maslach, Jackson and Leiter (1996) introduced Cy in the place of depersonalisation for the purposes of the new MBI-GS measuring instrument. Cy reflects indifference or a distant attitude towards work. It refers more to the work itself, rather than to personal relationships at work. It is seen as a negative, callous or detached response to various aspects of the job. It is specifically used for jobs in which there is no constant interpersonal contact between the burnt-out employee and his or her subject (recipient), as would say, the case be with a nurse and her patient. Schaufeli and Enzman (1998) explain that Cy is parallel to depersonalisation, and not another or different dimension. The term “Cy” simply suits the nature of all jobs, not only the jobs in the human services sector. The MBI-GS will be used in this research study. The researcher will consequently use the term, “Cy”, when referring to this specific dimension of the BO phenomenon.

2.3.3 Low personal accomplishment

A lack of personal accomplishment refers to the tendency to evaluate one’s work with recipients negatively. It is believed that the objectives are not achieved, which is accompanied by feelings of insufficiency and poor professional self-esteem. It relates to feelings of a lack of competence, productivity and achievement at work (Maslach et al., 1996).

Low personal accomplishment refers to a feeling of being unable to meet clients’ needs and to satisfy essential elements of job performance (Rothmann, 2002). Employees experience a growing sense of inadequacy and new projects seems overwhelming to them (Maslach & Leiter, 1997): This dimension was renamed “reduced professional efficacy” (RPE) for the purposes of the MBI-GS.

2.3.4 The relationship between the dimensions

The above-mentioned three dimensions of BO are regarded as interrelated, but conceptually distinct (Maslach & Jackson, 1986). There is accumulating
empirical evidence that Ex and Cy constitute the core of BO, whereas lack of
PE seems to play a less prominent role (Maslach et al., 2001; Shirom, 2002).
Furthermore, the Ex component of BO is more predictive of stress-related
health outcomes, than the components of Cy or RPE (Schaufeli & Bakker,
2003).

2.4 CONCEPTUAL MODELS OF BURNOUT

Although a myriad of theoretical models on BO exist in the literature, (Burisch,
1989; Cherniss, 1980; Harrison, 1983; Hobfall & Shirom, 1993; Leiter, 1993;
Maslach, 1982; Morris & Feldman, 1996; Pines, 1993; Schaufeli, Leiter,
Maslach & Jackson, 1996), a comprehensive review of each of these models
falls beyond the scope of this research. A selection of BO models most
relevant to the theoretical definition of BO accepted in this research will thus
be presented. The theoretical models of BO that will be reviewed include the
following:

2.4.1 The conservation of resources model of burnout

Hobfall and Freedy (1993) believe that people have a deeply rooted incentive
to obtain, retain and protect what they value. These are labelled “resources”
and include the following: objects (e.g. tools, houses); conditions (e.g.
supportive social networks, job stability); and personal characteristics (e.g.
social skills, self-esteem); and energies (e.g. money and credit). The
conservation of resources theory proposes that when resources are
threatened, psychological stress occurs in the subjects involved (Hobfall &

When coping is unsuccessful, prolonged job stress or BO might develop.
According to the conservation of resources theory, BO is defined as a process
of wearing out and wearing down a person’s energy, or the combination of
physical fatigue, emotional exhaustion and cognitive wearout that develops
gradually over time (Hobfall & Shirom, 1993). When resources are lost, say,
through job insecurity or failed promotion, despite investing in hard work, the individual needs to deal with this loss by investing more resources (e.g. finding a new job through the social network). After successful coping, a positive feedback loop or spiral of “gain” is created.

The model presented in figure 2.1, illustrates the “spiral of loss” that burnt-out individuals are caught in. Because resources at work are threatened, lost or not sufficiently gained (say, through role ambiguity, interpersonal conflict and failed promotion), additional personal resources have to be invested in order to cope with the increasing amount of stress experienced.

**Figure 2.1**

*The conservation of resources model of BO* (Hobfall & Shirom, 1993)

From the above model (figure 2.1), the self-perpetuating nature of BO (Hobfall, 2002) becomes evident. Spirals of gain often lead to more positive experiences, while spirals of loss lead to even more resource depletion,
continued stress and BO. This model is specifically congruent with the definition of BO as conceptualised by Freudenberger (1977).

2.4.2 Process models of burnout

Of the existing kaleidoscope of process models on BO, the following two influential models will be discussed:

2.4.2.1 Leiter’s process model of burnout

Building on Maslach’s research (Maslach, 1982), Leiter (1993) conducted research on quantitative job demands (e.g. work overload), qualitative job demands (e.g. interpersonal conflict) and lack of resources (e.g. lack of social support). Demands were expected to be related to emotional Ex and resources to depersonalisation and lack of personal accomplishment. The research results confirmed his hypothesised model, as illustrated in figure 2.2.

Figure 2.2
Leiter’s Process Model of BO (Leiter, 1993)
Empirical findings to date support the notion that BO is a multidimensional construct whose dimensions are differentially related to job demands and resources at work. Emotional exhaustion develops in reaction to job demands, including interpersonal demands, and leads to depersonalisation. Personal accomplishment is positively influenced by the presence of resources and largely develops in parallel to both other dimensions (Leiter, 1993; Maslach & Leiter, 1997). In the context of this study, exhaustion in the female academic might develop in response to various demands and might lead to the experience of cynicism in the subjects.

2.4.2.2 The Cherniss' process model of burnout

Cherniss (1995) describes BO as a phenomenon, specifically prominent in health-care professionals, and developing over time. BO is regarded as the development of negative attitude changes, which either represent a form of coping, or inadequate coping results, via active problem solving (Basson, 2002; Cherniss, 1995).

Burke and Greenglass (1995) found considerable support for a simplified version of the Cherniss model in a longitudinal study. This model is presented in figure 2.3. Aspects of one’s work setting influence BC both directly and indirectly through sources of stress (Basson, 2002; Cherniss, 1995; Gibson et al., 2006; Van Dierendonck et al., 2001). The sources of stress include doubts about personal competence, problems that are experienced by clients, organisational bureaucracy and a lack of stimulation and personal fulfilment.

These sources of stress lead to various attitude changes, such as, emotional detachment, work alienation and increased self-interest (Cherniss, 1995).
Figure 2.3 provides a graphical representation of the modified process model of BO as designed by Cherniss (1995) and summarised by Basson (2002). Cherniss (1995) notes, with specific reference to the manifestation of BO in females that, women who focus on a career in their twenties, become more concerned with family and children in their thirties, and conversely, women who focus on marriage and children in their twenties, become more focused on their careers in their thirties.
2.4.3 Phase model of burnout

Golembiewski and Munzenrider (1988) propose a phase model of BO, in which depersonalisation initiates the BO process. BO is viewed as a basic consequence of policies, structures and procedures at work. It depicts the way individuals experience whatever stressors they encounter. It is conceptually similar to clinical views of BO and is based on Maslach and Jackson’s MBI questionnaire (Basson, 2002).

The phase model maintains that depersonalisation is first experienced because a certain degree of professional detachment is often functional in dealing with others in a more “objective” manner (Golembiewski & Munzenrider, 1988; Golembiewski et al., 1996). Detachment becomes depersonalisation, impairing the ability to develop personal relationships (Basson, 2002). Sense of accomplishment decreases and work stress may surpass one’s ability to cope. The model poses the dimensions of depersonalisation, reduced personal accomplishment and emotional exhaustion.

A simple decision rule generates an eight-phase model of BO. In other words, emotional exhaustion is considered most characteristic of the advanced phases of BO, while depersonalisation is considered least virulent. Three subdimensions, each presented in terms of high or low manifestation, generate the progressive phases of BO (Golembiewski & Munzenrider, 1988; Golembiewski et al., 1996). Table 2.1 illustrates the different phases of BO.
### Table 2.1

*The progressive development of BO* (Golembiewski & Munzenrider, 1988)

<table>
<thead>
<tr>
<th>THE PROGRESSIVE PHASES OF BO:</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
<th>VIII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depersonalisation</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Personal accomplishment (reversed)</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Emotional Ex</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

An individual reaching full-term BO does not necessarily go through each of the eight phases. This operational model explains how individuals experience the stressors they encounter. The model identifies two routes to advanced BO: chronic BO or acute BO. Chronic BO is associated with unattractive working or supervisory conditions and involves the progression from levels 1, 2, 3, 4 to level 8. Acute BO occurs infrequently. A person in phase 1 might, when learning of a partner's unexpected death, jump to phase 5 and if the grieving process is difficult, escalate to phase 6 or 7, and then phase 8 (Golembiewski & Munzenrider, 1988; Golembiewski et al., 1996).
BO has a gender-specific component, namely that generally when tested according to the phase model of BO, females seem to report greater BO than males. Both genders with higher organisational status tend to report less BO (Golembiewski et al., 1996).

2.4.4 An integrative model of burnout

Schaufeli and Enzman (1998) suggest the use of a comprehensive model of BO (figure 2.4) that summarises common issues. It depicts an integrative, dynamic model of BO. They identify three main themes:

- **Strong motivation.** The crucial role of high goals, expectations, intentions, involvement and commitment is recognised.
- **Unfavourable job environment.** The person’s strong motivation stands in sharp contrast to everyday experience at work.
- **Inadequate coping strategies.** A positive or negative feedback loop exists, depending on the way the professional copes with distress. BO is self-perpetuating because it impedes the attainment of professional goals and depletes the coping resources. PE increases when goals are attained and coping resources are built up.
This model illustrates that BO increases distress, and depletes coping resources, whereas PE reduces distress and augments coping resources. This model is a graphical representation of the definition of BO given by Schaufeli and Enzman (1998).

### 2.5 THE AETIOLOGY OF BURNOUT

Aetiology is described as the philosophy of causation. It refers to the science of the causes of a disease or the assignment of a cause or a reason (Fowler & Fowler, 1990). An attempt will be made to assign causes or reasons for the occurrence of BO.
2.5.1 Involvement with people

BO is often used to describe occupational stress in people-oriented professions (Blix et al., 1994). Veninga (1979) describes BO as a debilitating condition resulting from work-related frustrations, particularly in the helping professions.

Close encounters between care provider and recipient play a central role in the development of BO. Contact with people can be extremely stressful because the helper may take on the client, patient or student's problem as a special cause or may become friends with the person (Maslach, 1982).

A virtual hallmark of the BO syndrome is a shift in the individual's view of other people - a shift from positive and caring to negative and uncaring. People are viewed in more cynical and derogatory terms, and the caregiver may begin to develop a low opinion of their capabilities and their worth as human beings (Maslach, 1982; Pines et al., 1981).

2.5.2 Organisational factors

Maslach and Leiter (1997) postulate that BO is not primarily a problem of the individual, but of the social environment in which people work. They believe that the structure and functioning of the workplace shape how people interact with one another and how they do their jobs.

Cilliers (2001) shows how various systems in organisations could lead to BO. In organisations in which there is no recognition of the human side of work, the risk of BO in employees increases. Organisations contribute to employee BO in a number of ways, namely through high levels of work-overload, dead-end jobs, excessive red tape and paperwork and poor communication and feedback, particularly regarding job performance and a reward system that are not contingent upon performance (Blix et al. 1994; Gibson et al., 2006).
A key idea implicit in the conceptualisation of BO relates to job involvement. A high degree of initial involvement in, identification with, or commitment to one’s job or profession is a necessary prerequisite for BO to develop at a later stage (Gibson et al., 2006). Schaufeli (2004) argues that Ex is mainly related to job demands, whereas distancing is also related to job resources:

2.5.2.1 Job demands

Schaufeli (2004) believes that the presence of job demands can lead to work overload, work-home conflict, emotional job demands and role problems. Hallsten (2005) notes that frequent conflicting demands lead to a high prevalence of BO. Maslach and Leiter (1997) explain that from the organisational perspective, workload means productivity, whereas, from an individual’s perspective, it means time and energy. The 21st century workplace has become increasingly intense, demands more time and is more complex than the workplace of the past.

Blix et al. (1994) studied the relationship between the university teacher and the demands of his or her job from a “good-fit” or “misfit” perspective between the worker and the work environment. They reported a significantly higher “misfit” among female teachers, than among males. Research-related demands are considered to be more stressful than either teaching or service. According to Blix et al. (1994), female university teachers are much more likely to consider job change as a result of job demands.

Schaufeli and Enzman (1989) argue that since 1987 job demands may have increased for almost all occupational groups. They base their argument on 73 research studies conducted in the USA, according to six occupational fields (Maslach et al., 1996). The occupational fields included in the study were teaching, post-secondary education, social services, medicine, mental health and others. The research findings are presented in table 2.2. Based on these research findings it is evident that emotional Ex scores (average score equalled 23.54), were significantly higher than in 1987 (average score equalled 20.99) (Schaufeli & Enzman, 1998).
Table 2.2

Normative data of the MBI based on 73 USA studies published between 1979 and 1998 (Schaufeli & Enzman, 1998)

<table>
<thead>
<tr>
<th>Occupational field</th>
<th>EE</th>
<th>D</th>
<th>RA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sa</td>
<td>N</td>
<td>Mn</td>
</tr>
<tr>
<td>Teaching</td>
<td>6</td>
<td>5481</td>
<td>28,2</td>
</tr>
<tr>
<td>Higher Education</td>
<td>5</td>
<td>877</td>
<td>19,2</td>
</tr>
<tr>
<td>Social Services</td>
<td>7</td>
<td>1631</td>
<td>24,3</td>
</tr>
<tr>
<td>Medicine</td>
<td>14</td>
<td>2021</td>
<td>23,9</td>
</tr>
<tr>
<td>Mental Health</td>
<td>19</td>
<td>2290</td>
<td>20,4</td>
</tr>
<tr>
<td>Police officers</td>
<td>2</td>
<td>430</td>
<td>17,6</td>
</tr>
<tr>
<td>Students</td>
<td>3</td>
<td>229</td>
<td>19,8</td>
</tr>
<tr>
<td>Senior Executives</td>
<td>1</td>
<td>224</td>
<td>15,1</td>
</tr>
</tbody>
</table>

The key to the constructs in table 2.2 are as follows:

BO dimension: Statistical indicator:
EE= Emotional Ex (Ex) Sa= Sample
D=Depersonalisation (Cy) N= Number
RA=Reduced personal accomplishment Mn= Mean
(RPE) SD= Standard deviation
From the above it is clear that teachers scored exceptionally high on emotional Ex and police officers very high on depersonalisation and reduced personal accomplishment. Senior executives were the least emotionally exhausted, students scored the lowest on depersonalisation and mental health practitioners had the lowest feeling of RPEsonal accomplishment.

Of specific relevance to this study are the scores for the higher education field. These will be compared to the sample population (female academics at two tertiary institutions in South Africa) in the empirical study.

2.5.2.2 Job resources

The absence of job resources is linked to the lack of social support, a lack of job control, poor feedback and poor participation in decision making (Schaufeli, 2004). Gmelch, Lovrich and Wilke (1984) report that high self-expectations, finding financial support for research, insufficient time, low pay and striving for publication are some of the most troublesome reported stressors found in the higher education field. They conclude that the majority of these stressors relate directly to limited resources.

2.5.2.3 Lack of control

The capacity to set priorities for day-to-day work, select approaches to doing work, and make decisions about the use of resources is central to doing professional work. Policies that interfere with this capacity reduce individual autonomy and involvement with work. Organisations also do not tolerate creative problem solving outside of their centralised control structures (Maslach & Leiter, 1997).

2.5.2.4 Lack of reward

Currently, organisations are unable to reward people in meaningful ways because rewards are either insufficient or totally absent. An even greater contributor to the experience of BO is the loss of the intrinsic reward of doing enjoyable work and building expertise with respected colleagues (Maslach &
Leiter, 1997). The combined loss of extrinsic and intrinsic rewards diminishes the potential for work to be engaging.

Blix et al. (1994) stress the "misfit" experienced by female employees between their effort and the rewards they receive. Females might perceive fewer initial career options and thus find themselves in disciplines that they might not find internally as rewarding as their male colleagues do. They are also of the opinion that female university teachers might select academia as a career choice because of the perception that discrimination limits their rewards and opportunities in the private sector. A third reason noted by Blix et al. (1994), is that female teachers might experience more role conflict in trying to balance the responsibilities of home and work.

2.5.2.5 Breakdown of community

The experience of community among employees is undermined through the loss of job consideration of people (Maslach & Leiter, 1997). As organisations weaken their commitment to their people, staff members have less of a basis for making commitments to one another; the basic elements of community are fragmented. Without community, a group of people lack the synergy of an integrated work group. A lack of community constitutes a reduction in productivity and vulnerability towards conflict between its members. Unresolved conflict is an emotional drain on the energy people need for creative tasks.

2.5.3 Personal characteristics

External factors (as described in the previous two sections) do not explain the BO phenomenon in its full complexity. The individual brings with herself or himself certain personal characteristics to the situation, for example, motivation, needs, values, self-esteem, emotional expressiveness and control and personal style. These internal qualities determine how someone handles external sources of emotional stress and help explain why one person will
experience BO in a particular work setting and another will not (Maslach, 1982).

Competing demands of careers, family plans, social life, civic life and recreation are also stressful for university teachers (Blix et al., 1994). The impact of demographic variables such as gender, ethnic background, age, marital and family status and educational level cannot be underestimated. These demographic variables are discussed fully in section 2.7.

2.6 PROFILE OF A BURNT-OUT EMPLOYEE

BO is often defined only by its symptoms. These symptoms may be potential indicators of BO. As a result, many helping professionals do not recognise the problem until BO has reached an advanced state (Grosh & Olsen, 1994). The result is that BO is often mistaken for simple tiredness, low energy levels or boredom. It is only when BO has reached an advanced stage in which symptoms are more prominent that it is correctly diagnosed. It is often only because of a crisis that surfaces, say, a poor performance appraisal, health issues or interpersonal conflict, that a diagnosis is made.

The symptoms of BO can be categorised into physical, cognitive and behavioural symptoms (Cedoline, 1982; Freudenberg, 1982; Maslach 1982; Patrick, 1979; Pines et al., 1981). There is no universally accepted categorisation, because different scholars follow their own preferences. The symptoms range from subtle to quite obvious. The discussion of this section will follow the broad order of categorisation, as provided by Freudenberg (1982).

2.6.1 Physical symptoms

Physical symptoms range from headaches, nausea, backache gastrointestinal illness, chronic fatigue and lowered resistance, to high blood pressure, elevated levels of LDL cholesterol, muscle tension, alcoholism and drug
abuse (Blix et al., 1994; Cilliers, 2002; Golembiewski et al., 1996; Maslach & Leiter, 1997; Patrick, 1979;). Freudenberger (1982) identifies sleeplessness, prolonged colds, vague bodily complaints, headaches or even severe chest pains that simulate a coronary heart attack. Belcastro and Hays (1984) identify dizziness, loss of appetite, ringing sensation in the ears and sensitivity to the weather. Shirom, Melamed, Toker, Berliner and Shapira (2005) found a strong relationship between BO and musculoskeletal pains, excessive sweating, common infections, a marked increase in inflammation biomarkers, and alarmingly, between BO and the onset of Type II Diabetes. Cedoline (1982) identifies a change in appetite, weight loss or gain, decreased interest in sex, teeth grinding and a pounding heart.

2.6.2 Cognitive symptoms

Cognitive symptoms typically range from Cy, and a tendency to be inflexible and rigid in thinking, to stereotyping and depersonalising clients. A closed mind about change or innovation and the use of intellectual or jargon terms, as well as poor concentration, forgetfulness, poor decision making and making many mistakes are associated with BO (Belcastro & Hays, 1984; Cilliers, 2002; Freudenberger, 1977; Patrick, 1997).

2.6.3 Emotional symptoms

Emotional symptoms include emotional Ex and feelings of helplessness, powerlessness, anxiety and a tearful and depressed mood (Cilliers, 2002; Maslach, 1982; Maslach & Jackson, 1981; Schaufeli & Enzmann, 1998). Sudden outbursts of temper or anger, feeling negative, without any hope, being discouraged, frustrated, cynical and disenchanted to being resentful and having feelings of paranoia, in which he or she feels his or her peers or administration are out to, “get”, them (Belcastro & Hays, 1984; Freudenberger, 1982). Oversensitivity, coldness, outbursts of anger, low frustration tolerance leading to aggressiveness and a negative self-concept have been observed (Cilliers, 2002). A close association of BO phases with nonpsychotic
psychiatric symptoms has been reported (Golembiewski et al., 1996). Schaufeli and Enzman (1998) observed a gloomy, tearful and depressed mood, undefined fears, anxiety and nervous tension.

2.6.4 Behavioural symptoms

Behavioural symptoms range from complaining and absenteeism to leaving the job or profession (Bennett, 1998). Belcastro and Heys (1984) identify fatigue, worry, the inability to make decisions and accident proneness. Maslach (1982) adds sleep disturbances, misuse of alcohol and drugs and decreased personal relationships with family and friends. Overeating, procrastination, boredom, excessive consumption of stimulants such as coffee, tobacco, alcohol, tranquilisers and barbiturates are also manifested (Blix et al., 1994; Cilliers 2002; Freudenberger, 1982; Gibson et al., 2006).

2.6.5 Motivational symptoms

A lower level of intrinsic motivation, initiative, enthusiasm, interest and idealism, increased disillusionment, disappointment and resignation are manifested in individuals with a higher level of BO (Cilliers, 2002). Zeal, enthusiasm, interest and idealism are lost. Disillusionment and disappointment set in. This deeply rooted motivational crisis is expressed as a loss of genuine interest in for example patients or students, accompanied by indifference and discouragement (Schaufeli & Enzman, 1998).

2.6.6 Interpersonal symptoms

Interpersonal symptoms include decreased empathy and involvement with and interest in others, isolation, withdrawal, negativism, irritability, hostility, suspicion, indifference, discouragement, stereotyping, hostility and a weakened level of impulse control (Cilliers, 2002). Burnt-out educators are less motivated, put in less effort, are less patient with students and are less
optimistic about the future (Pines, 2002; Whitehead et al., 2000). Cedoline (1982) identifies additional interpersonal symptoms such as resentment, nagging, isolation and lowered sexual drive.

2.6.7 Work-related symptoms

Reduced effectiveness, performance, productivity, satisfaction, resistance in going to and doing work, a sense of failure and meaninglessness characterise work-related symptoms (Cilliers, 2002). Blix et al. (1994) identify absenteeism, turnover and low productivity as organisational symptoms. A sense of failure is experienced, as well as a feeling of insufficiency or impotence, which may lead to poor job-related self-esteem. The professional starts to feel guilty because he or she is unable to perform the job as usual (Schaufeli & Enzman, 1998).

2.6.8 Spiritual symptoms

Loss of faith, loss of meaning and direction, a feeling of emptiness, doubt, cynicism, estrangement, despair, sense of futility, a change in values, a change in religious beliefs and affiliations, being devoid of joy, being unforgiving and experiencing feelings of martyrdom, are all spiritual symptoms of BO (Cedoline, 1982).

2.7 DEMOGRAPHIC FACTORS AND THE MANIFESTATION OF BURNOUT

In order to fully understand the manifestation of BO, it is necessary to consider the impact of various demographic variables. Biographical characteristics have been shown to be related to BO, but the interrelationship appears to be weak and variable (Cherniss, 1995; Hlungwani, 2006).
2.7.1 Gender

Zani and Pietrantoni (2001) postulate that much of the occupational literature reports data, on males, only. Consequently, gender issues are not adequately addressed and the results reported are inconsistent and confusing.

According to Maslach (1982), men and women experience BO fairly similarly. Slight differences do exist in terms of the different dimensions of BO, namely: that women tend to experience more emotional Ex than men and men are more likely to have depersonalised and callous feelings about the people they work with. Hlungwani (2006) argues that these results may relate to gender role stereotypes.

Greenglass (1991) explains that gender is often confounded with occupational role and hierarchical position. Women less frequently occupy supervisory roles and thus have less access to job-related rewards such as high income, social status and autonomy (Blix et al., 1994).

2.7.2 Ethnic background

Maslach (1982) reports dramatic differences between white and black helping professionals in the USA. Compared with whites, black professionals do not burn out as much. This is ascribed to the fact that they live in communities in which there is more emphasis on family and friendship networks. In terms of the manifestation of BO in female academics, no South African research on ethnicity or race could be traced.

2.7.3 Age

There is a clear relationship between age and BO. BO is greatest when people workers are young, while it is lower for older workers. With increased age, people become more stable and mature, have a more balanced perspective on life and are less prone to the excesses of BO. Another
explanation might be that the older people workers are the "survivors" of the difficult early years. The sufferers of early BO might have left the profession in its entirety and thus might not be involved in surveys of the older workers (Folkeman, Lazarus, Pimley & Novacek, 1987; Maslach & Leiter, 1982).

2.7.4 Marital status

People workers who are single generally experience the highest levels of BO and those who are married the least (Maslach, 1982). BO levels are also lower for providers with families, than for childless providers.

2.7.5 Level of Education

With respect to BO, people with different levels of education are not dramatically different. Maslach (1982) however, did find a high degree of emotional Ex for providers with postgraduate training, although on all other dimensions of BO this group scored the lowest. Blix et al. (1994) and Greenglass (1991) found that BO scores increase for females as they move up in rank in organisations. In terms of the manifestation of BO in female academics with different levels of education, no South African research studies could be traced.

2.8 THE POSSIBLE EFFECTS OF BURNOUT

The effects of BO, found at individual, group and organisational level, are explained below.

2.8.1 Individual level

As people become more stressed and receive less support in their personal lives, they become even less capable of dealing with problems on the job. People who are burning out are likely to withdraw from the job, both
psychologically and physically. For some people, BO causes them to shut down and become apathetic. In others, it brings about self-destructive behaviour (Cedoline, 1992). They invest less time and energy in their work, do only what is absolutely necessary, and are absent more often. They also do their work less well. High quality work requires time and effort, commitment and creativity, but the burnt-out individual is no longer willing or capable of giving this freely. The drop in quality and quantity of work produced is the occupational bottom line of BO (Maslach & Leiter, 1997).

High BO levels correlate with an increase in the use of alcohol and drugs, and marital and family problems (Maslach & Jackson, 1986). Individuals may strike out without thinking, become angry with co-workers or simply make silly mistakes because of an inability to concentrate. Eventually these individuals may start to shirk their responsibilities, seeking the path of least resistance in everything they do (Scott, 1997). Eventually severely burnt-out individuals may make the painful choice of leaving the organisation and even the occupation in its entirety.

In job strain studies, a common finding is quite consistent: women report more symptoms, both psychological and psychosomatic than men (Linden, Paulhus & Dobson, 1986; Rosenfield, 1989). Several explanations have been offered: for instance, women are more honest than men in describing somatic complaints; men tend to deny difficulties more frequently than women (Zani & Pietrantoni, 2001). Rothmann (2002) highlights the self-perpetuating nature of BO, in that it affects the attainment of professional goals and depletes the individual’s resources to cope with the process and symptoms of BO.

2.8.2 Group level

Maslach and Leiter (1997) highlight the growing trends towards work teams, in which people have to work collaboratively with colleagues instead of on their own. Training in interpersonal skills is not given the attention it should and the psychological costs of such work are still not recognised as an important
source of job stress. Managers suffering from BO could spread this psychological state to their subordinates (Dubrin, 1990). On a “family group level”, marital and family problems manifest to a higher extent in burnt-out individuals (Maslach & Jackson, 1986).

2.8.3 Organisational level

About 4 to 7 percent of the workforce report clinical BO levels, while a further 16% are at risk of developing BO. Ex and Cy seem to be the core elements. High levels of BO (Ex) are predictive for future job turnover and absenteeism (Shaufeli, 2004). The organisation’s work climate is negatively affected by the low morale and low job satisfaction of the burnt-out individual (Rothmann, 2002).

According to Gibson et al. (2006), BO costs organisations money. This includes the costs incurred because of reductions in operating effectiveness, poor decision making and decreased creativeness. It also includes the medical costs, lost work time, absences, turnover and sabotage. Even more important than the above is the cost of decreasing quality in terms of customer dissatisfaction with lower-quality goods and services.

2.9 STRATEGIES FOR COPING WITH BURNOUT

Coping in itself does not imply success, but effort. It is the link between stress and adaptation (Pines & Aronson, 1988).

2.9.1 Individual coping

The individual has the responsibility to recognise the signs and symptoms of BO (Cilliers, 2002). Individual coping is described as an intrapersonal and action-oriented effort to manage the environmental and internal demands and conflicts, through (1) awareness of the problem, (2) understanding and taking
responsibility for action, (3) achieving some degree of cognitive clarity, and (4) developing new tools for coping and improving the range and quality of old tools (Cilliers, 2002; Pines & Aronson, 1988). Gibson et al. (2006) propose self-help techniques such as cognitive techniques, relaxation techniques, meditation and biofeedback.

Pearlin and Schooler (1978) found that, compared with men, women report less use of effective strategies and greater use of "selective ignoring", a form of coping found to exacerbate rather than alleviate stress. Other researchers suggest that men tend to cope by taking direct action, whereas women more frequently use distraction and relaxation (Folkman et al., 1987; Stone & Neale, 1984; Zani & Pietrantoni, 2001). Parasuraman and Cleek (1984) found that female managers reported greater use of adaptive coping strategies (planning, seeking information and setting priorities) than their male colleagues.

Pines and Aronson (1988) recommend for professional women, that because some of their conflicts are a result of a social-psychological double bind, they have to make their life choices without succumbing to pressures from outside, without guilt and without regrets. They furthermore recommend that individuals should become involved in the active pursuit of learning, variety, a sense of meaning and success, flow-experiences and self-actualisation.

2.9.2 Interpersonal coping

Pines and Aronson (1988) recognise that human beings are social beings, they have a need for intimacy and they are reliant on membership of an elaborate social system. This refers to having and using social support systems, defined as networks of occupational relationships, which could comprise one or more of the following: emotional support (admiration, respect, liking), affirmation or appraisal (acknowledgement of the appropriate behaviour of another) and aid (direct giving of materials information or service) (Cilliers, 2002; Pines & Aronson, 1988).
Social support systems serve the following six basic functions (Pines & Aronson, 1988):

1. They provide people who listen actively, without giving advice or making judgements.
2. They provide technical appreciation in the form of acknowledgement for a good satisfactory of work.
3. There is absence of technical challenge that can lead to stagnation and boredom.
4. There is unconditional emotional support, especially in a highly stressful job, from colleagues, spouse and family.
5. Friends that challenge the individual to do her or his best can contribute to personal growth and more efficient employment of energies.
6. In times of stress, a person with similar values and views can be most helpful in assisting the individual to interpret the reality that he or she perceives in the organisation.

Pines and Aronson (1988) recommend that people who work in the human services change their client orientation to a more balanced relationship between themselves and their clients. They specifically recommend developing and maintaining a “detached” concern.

2.9.3 Organisational coping

Organisational coping strategies refer to different organisational development (OD) inputs to promote organisational health and optimal performance (Cilliers, 2002; Pines & Aronson, 1988). For people in bureaucratic organisations, Pines and Aronson (1988) recommend becoming “good bureaucrats”. Organisational stress and BO prevention and management programmes include employee assistance programmes and wellness programmes (Gibson et al., 2006). According to them, organisational strategies may include the following:
• The health and well-being of employees should be part of the organisation's mission and strategic plans.
• A written policy statement about health, the promotion of health, and the importance of well-being is necessary.
• Organisational resources should be committed to accomplishing the wellness plan.

Staff meetings can also act as effective organisational buffers against BO and tedium if they fulfil several functions (Pines & Aronson, 1988). They should afford staff opportunities to express themselves, influence the organisation's policies, exert some control over their work and give them a greater sense of commitment to the organisation. There should thus be a balance between time for discussing clients' problems and time for staff to confer about staff stress.

A number of research studies have been conducted in Australia on the incidence of teacher stress, BO and the institutional care that teachers should receive. Those include the following (Albee, 2000; Gachut'ha, 2006; Kyriacou, 2001; Education Service Advisory Committee, 1998):

• consulting with teachers on matters relating to their work
• providing adequate resources and facilities in instructional practice
• providing clear job descriptions in an effort to address role ambiguity and conflict
• establishing and maintaining open lines of communication between teachers and administrators to provide administrative support and performance feedback that may act as a buffer against stress
• allowing for and encouraging professional development through mentoring and networking
• engendering a sense of accomplishment and a fully developed professional identity
• training teachers to depersonalise incidents
• organising strong and reliable behaviour management strategies
• providing support in both professional and personal issues
• promoting strong peer support
• celebrating staff and giving promotions

2.10 CHAPTER SUMMARY

The purpose of chapter 2 was to provide a detailed theoretical study of the concept of BO. It was defined and analysed in the different dimensions that constitute the concept. The aetiology of BO and the symptoms associated with it were scrutinised. The demographic variables pertaining to BO and the effects of high levels of BO on the workforce were researched. Finally, a number of coping strategies, at the individual, group and organisational level were considered.
CHAPTER 3

WORK ENGAGEMENT

My profession spends most of its time and almost all of its money trying to make the troubled less troubled. Helping troubled people is a worthy goal, but somehow psychology almost never gets around to the complementary goal of making the lives of well people even better (Seligman & Csikzentmihalyi, 2000).

3.1 INTRODUCTION

Psychology, with its emphasis on human suffering, has been criticised for focusing too much on pathology instead of on the positive outcomes in the work environment (Diener et al., 1999.) The question, asked by many of the positive psychology scholars, is why certain workers can accomplish large amounts of work with enthusiasm and enjoyment, without becoming sick or being burnt-out. The focus of this chapter is to find an answer to this challenging question.

According to Maslach and Leiter (1997), reducing the possibility of BO is only part of a preventive approach. More importantly, the chances that people will remain engaged with their work should be increased. They argue that the ultimate goal in every organisation should be to build something positive, not simply to eliminate a negative. Seligman and Csikzentmihalyi (2000) advocate this drive towards a more “positive” psychology in which the focus on disease and the vulnerabilities of the individual is gradually replaced by a new focus on the individual’s psychological well-being and skills to cope with the demands of stress, studied from a health and growth psychology perspective (Coetzee & Cilliers, 2001; Rothmann, 2002).
Rothmann (2002) contends that work engagement (WE) research should be conducted across a range of professions and occupational groups (Langelaan et al., 2006). Groups that should specifically be targeted include educators at primary, secondary and tertiary levels, health professionals, information technology practitioners, engineers, managers, civil service personnel and counsellors (Rothmann, 2002). Finally, Tytherleigh (2004) labels work-life balance and occupational stress a “woman's issue”. Hence, the experience of “WE” amongst female academics at tertiary education institutions needs to be investigated, in order to contribute to the “positive psychology” literature.

In this chapter the focus will fall specifically on the concept “WE”.

3.2 DEFINING WORK ENGAGEMENT

The development of the WE construct followed two different but related paths (Sieberhagen & Rothmann, 2004; Storm, 2002):

Maslach and Leiter (1997) describe WE as being characterised by energy, involvement and efficacy, which are considered the direct opposites of the three burnout (BO) dimensions, namely exhaustion (Ex), cynicism (Cy) and reduced professional efficacy (RPE) respectively. Maslach and Leiter (1997) indicate that focusing on WE means focusing on the energy, involvement, and effectiveness that employees bring to the job and develop through their job. They believe that a focus on WE builds more effective organisations. Maslach and Leiter (1997) have consequently rephrased their definition of BO as the “erosion of WE with the job”.

WE could therefore theoretically be measured with the Maslach BO inventory, with low scores on Ex, Cy and RPE (Maslach & Leiter, 1997).

Secondly, Schaufeli and Bakker (2004) and Schaufeli (2004) consider BO and WE to be opposite concepts that should be measured independently with different instruments. According to Schaufeli and Bakker (2001), two
dimensions of WE are logically related to BO, namely Vi (Ex) and De (Cy). Vi refers to the activation dimension of well-being, while De refers to identification with work. However, Ab and PE seem to be less related than the other two dimensions, but both dimensions could also be regarded as components of WE (Rothmann, 2002). According to this framework, BO is characterised by a combination of Ex (low activation) and Cy (low identification), whereas WE is characterised by Vi (high activation) and De (high identification).

Schaufeli (2001, 2004) thus regards WE as a positive and fulfilling work-related state of mind. WE does not refer to a momentary and specific state, but instead to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour (Schaufeli & Bakker, 2001).

To summarise the above definitions of WE, the following comprehensive definition of WE is formulated, which enjoys widespread support in the literature (Schaufeli, Salanova, González-Romá & Bakker, 2001; Schaufeli & Bakker, 2003):

WE is a positive, fulfilling, work-related state of mind, characterised by Vi, De and Ab. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state, that is not focussed on any particular object, event, individual or behaviour. Vi is characterised by high levels of energy, De by being strong involvement and Ab by being fully and happily engrossed in one’s work.

A third group of definitions of WE is gaining prominence in the literature. In this group of definitions, WE is subdivided into emotional WE and intellectual WE. Savolaine (2005) defines employee WE as an individual’s personal attachment to his or her work at both an intellectual and an emotional level. St-Arnaud (2005) proposes that the goal of an organisation should be to ensure that people have the knowledge and understanding of business priorities to guide their decisions and actions, and the capability in terms of
skills, tools, processes and overall organisational culture, to contribute to those goals. This definition, according to St-Arnaud (2005), demands two primary areas of focus: building intellectual WE through knowledge and maintaining emotional WE through organisational culture.

3.3 THE DIMENSIONS OF WORK ENGAGEMENT

WE consists of three different, but related dimensions, as explained below.

3.3.1 Vigour (Vi)

Vi refers to high levels of energy and resilience, the willingness to invest effort in one’s job, not being easily fatigued and persistence in the face of difficulties (Bakker, Demerouti, Schaufeli, 2005; Gonzalez-Roma, Schaufeli, Bakker & Lloret, 2006; Schaufeli, 2004). Respondents with high scores on the Vi dimension usually have a lot of energy and resilience, are willing to invest effort, are not easily fatigued, and persist in the face of difficulty (Schaufeli & Bakker, 2003). A typical statement of an employee experiencing Vi would be: “At my work, I feel bursting with energy”. This is one of the items used to test for the presence of Vi (Schaufeli & Bakker, 2003).

3.3.2 Dedication (De)

De refers to a strong involvement in one’s work, accompanied by feelings of enthusiasm and significance, inspiration and by a sense of pride (Langelaan et al., 2006; Schaufeli, 2004). Employees who score highly on De, identify strongly with their work, because they experience it as meaningful, inspiring and challenging (Bakker et al., 2005). They feel enthusiastic and proud of their work. The low scorers do not identify with their work, because they do not experience it as meaningful, inspiring or challenging; moreover, they feel neither enthusiastic not proud of their work. “I find the work that I do full of
meaning and purpose", is a typical statement of the employee scoring high on De (Schaufeli & Bakker, 2003).

3.3.3 Absorbtion (Ab)

In 30 in-depth interviews Ab was found to be another constituting element of work engagement (Schaufeli et al. 2001; Bakker et al., 2005). Ab refers to a pleasant state of being happily and totally engrossed in one's work, which is characterised by time passing quickly and being unable to detach oneself from the job (Langelaan et al. 2006; Schaufeli, 2004). Ab is also referred to as “flow”, a state of optimal experience (Csikszentmihalyi, 1990). Employees who score high on Ab feel that they are usually happily engrossed and immersed in their work and have difficulty detaching from it because it carries them away. Hence everything else is forgotten and time seems to fly. Those who score low on Ab do not feel engrossed or challenged in their work. They do not they experience difficulty detaching from it- nor do they forget everything around them, including time (Schaufeli & Bakker, 2003). An employee experiencing high Ab would be typified by a statement such as: "When I am working, I forget everything else around me."

3.3.4 The relationship between the three dimensions

Vi and De are considered the core dimensions of WE, and Ab was found to be a relevant aspect of WE after a number of interviews were conducted (Bakker et al., 2005; Schaufeli & Bakker, 2001, 2004). Researchers have proposed that the conceptual opposites of emotional Ex and Cy (the core dimensions of BO) are Vi and De (the core dimensions of engagement) respectively (Maslach & Leiter, 1997; Schaufeli et al., 2002).

Schaufeli and Bakker (2001, 2004) proposed a particular positioning in the existing two-dimensional model that consists of an activation and pleasure dimension. They presume that the activation dimension is spanned by Ex and
Vi, whereas the pleasure dimension is likewise spanned by Cy and De. Langelaan et al. (2006) illustrated this integration as follows in figure 3.1:

**Figure 3.1**

*Integrated model to classify BO and WE, based on the opposing dimensions of each concept* (Langelaan et al., 2006)

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3.4 CONCEPTUAL MODEL OF WORK ENGAGEMENT

Since WE is a recently defined concept, a theoretical exploration would be incomplete, without a study of the development of the concept.
3.4.1 Early conceptualisation of the concept work engagement

The first models of WE are found in the BO literature. In an effort to create a model for the concept “BO”, a number of researchers included the positive antipode or the positive “spiral of gain” (Hobfall & Shirom, 1993) in their theories (see figure 2.1). Pines (1993) referred to a positive state of mind or “existential significance”, the achievement of goals and expectations of success, in her early writings on BO and her existential model of BO. A general need to explore the “positive antipode” is thus evident in many of the theories on BO.

Figure 3.2
The demand-control model (Karesek, 1981)
The demand-control model (figure 3.2) attempts to provide insight into the relationships between psychological work characteristics, on the one hand, and health and motivation on the other. The model has stimulated much research on workers' health and motivation as a result of the interaction between psychological demands and job control (Demerouti, Bakker, De Jonge, Janssen & Schaufeli, 2001). Montgomery, Peeters, Schaufeli and Den Ouden (2003) note that one of the principal contributions of the demand-control model is that it focuses attention on the fact that job demands are multifaceted. The need to examine a range of job demands is hence highlighted. Job demands were discussed in section 2.5.2 in the chapter on BO. Montgomery et al. (2003) measured quantitative job demands, as well as emotional and mental job demands.

The findings of Demerouti et al. (2001) in a study of 381 insurance company employees partly contradict the demand-control model, especially with respect to the validity of the interaction between job demands and job control. Job demands and job control seem to initiate two essentially independent processes. This occurrence is consistent with the job demands-resources model, recently proposed.

Several authors have argued that BO results from a misfit between job demands and job resources (Cordes & Dougherty, 1993; Lee & Ashforth, 1996; Maslach & Leiter, 1997; Schaufeli & Enzman, 1998). A number of recent studies also provide strong evidence for such a job demands-resources model (Bakker et al., 2005).

Conceptually, the job demands-resources model of WE, is rooted in Karasek's job-demands-control model (Karasek, 1981; Karasek & Theorell, 1990), depicted in figure 3.2 and in Hobfoll's conservation of resources theory (Hobfoll, 1989), presented in figure 2.1 (discussed in section 2.4.1).

Whereas BO seems to be particularly related to job demands, WE seems to be especially related to the result of the resources available in the organisation (Demerouti et al., 2001). Job resources refer to those physical,
psychological, social or organisational aspects of the job that (Bakker et al., 2005):

- are functional in achieving work goals
- reduce job demands and the associated physiological and psychological costs
- stimulate personal growth and development
- are motivational, because they make employees work meaningfully

It is from this initial realisation that there are also positive emotional consequences to be gained from working that the current models have developed. Schaufeli and Enzman (1998) used the term “PE” (see figure 2.4) as one of the positive outcomes of coping effectively with stress. Since PE is one of the dimensions of WE, it is evident that the academic world became more aware of the dimensions of the WE concept.

3.4.2 The comprehensive BO and engagement model (COBE) model

The need to build a more balanced picture of stress and to account for positive interference is evident in the development of the job demands-resources (JD-R) model (Montgomery et al., 2003).

Schaufeli and Bakker (2001, 2004) conceptualised the following comprehensive model, referred to as the COBE model (figure 3.3), in order to predict low BO and high WE from job demands and job resources, and to relate both to potential individual and organisational costs. They propose that two sets of variables can be distinguished in any kind of job, namely job demands and job resources.

Job demands are referred to as those physical, psychological, social or organisational aspects of the job that require sustained physical and/or psychological (cognitive/emotional) effort and are therefore associated with certain physiological and/or psychological costs (Bakker et al., 2005; Schaufeli & Bakker, 2001, 2004).
Schaufeli and Bakker (2001, 2004) and Bakker et al. (2005) refer to job resources as those physical, psychological, social or organisational aspects of the job that either/or

- reduce job demands and the associated physiological and psychological costs
- are functional in achieving work goals
- stimulate personal growth, learning and development- hence resources are not only necessary to deal with job demands and “to get things done”, but they are important in their own right (Hobfoll, 2002)

The JD-R model assumes two processes- an energetic and a motivational process. Demerouti, Bakker, Nachreiner and Schaufeli (2001) successfully tested the JD-R model that posits that job demands are associated with Ex, whereas job resources that are lacking are associated with disengagement with the job. Schaufeli and Bakker (2001, 2004) extend the JD-R model by including WE, as measured independently from BO, and by adding indicators for health impairment and organisational commitment (e.g. low turnover intention) as possible consequences of BO and WE respectively. This model is referred to as the COBE model.
3.4.2.1 The energetic process

This process links job demands to health problems via BO. When the perceived demands are too high to be met by the usual working effort, two options are available (Hockey, 1997):

1. Target performance is maintained at the expense of an increased compensatory cost that is manifested both psychologically (fatigue and irritability) and physiologically (increased excretion of cortisol).

2. A passive coping mode, involves downward adjustment of performance targets, for example, by reducing levels of accuracy and speed.

According to Maslach and Leiter (1997), emotional Ex (a core dimension of BO) is specifically related to job demands. Hockey (1997) argues that employees will invest additional energy up to the point of Ex and then switch from an active/strain mode to a passive coping mode, characterised by de-investment and disengagement.
3.4.2.2 The motivational process

This process links job resources via WE with organisational outcomes (e.g. turnover intention) (Schaufeli & Bakker, 2004). Job resources may play either an intrinsic motivational role because they foster employee's growth, learning and development, or an extrinsic motivational role because they are instrumental in achieving work goals. In the former case, job resources fulfil basic human needs, such as the need for autonomy (De Charms, 1968), competence (White, 1959), and relatedness (Baumeister & Leary, 1995).

Job resources may also play an extrinsic motivational role because, according to the so-called "effort-recovery model" (Schaufeli & Bakker, 2004), work environments that offer many resources foster the willingness to dedicate one's efforts and abilities to the work task. The outcome, be it through satisfaction of basic needs or the achievement of work goals, is positive and WE (a fulfilling, positive work-related state of mind) is likely to occur (Schaufeli & Bakker, 2004).

In a South African study among teachers in the North West Province, Jackson (2004) confirmed that favourable job resources predicted WE. Furthermore Jackson (2004) found that WE mediated the relationship between job resources and organisational commitment. The results were similar in a study among emergency workers in Gauteng (Naude & Rothmann, 2003).

It is plausible to assume that engaged workers have a low tendency to leave the organisation, because it provides them with valued job resources that enhance learning, growth, and development (Houkes, Janssen, De Jonge & Nijhuis, 2001). Variables such as organisational commitment, and positive and negative affectivity are therefore considered moderators of the stress-strain process in this research (Jackson, 2004).
3.5 AETIOLOGY OF WORK ENGAGEMENT

Because aetiology deals with the philosophy of causation, an attempt will be made to assign causes or find reasons for the occurrence of WE in employees.

At individual level, Schaufeli and Bakker (2001) theorise that WE might be associated with underlying personality traits in the individual. Engaged employees may possess an inborn high energy level (Rothmann, 2002), making them more susceptible to WE.

Schaufeli and Bakker (2003) highlight social support, such as that from co-workers and superiors, performance feedback and coaching as significant causes of WE in groups.

At organisational level, Schaufeli (2004) states that WE is related to job resources (as confirmed by Jackson, 2004), positive organisational attitudes, mental health, academic performance and self-efficacy, leading to an upward gain spiral. Job autonomy, task variety and the availability of training resources are other possible causes of WE (Demerouti et al., 2001; Salanova, Schaufeli, Llorens, Piero & Grau., 2001; Schaufeli, Taris & Van Rhenen, 2003). Sonnentag (2003) proved that WE is positively related to the extent to which employees recovered from their previous work day.

Schaufeli and Bakker (2004) used structural equation modelling to analyse data from four independent occupational groups (N=1698). Their results confirmed that job resources (performance feedback, social support from colleagues and supervisor coaching) were the only predictors of WE.

Maslach and Leiter (1997) adopt a slightly different approach in their exploration of the aetiology of WE. They explore the journey followed by an employee from being burnt-out to experiencing WE once more. They are of the opinion that six roads lead, either to BO and disengagement, or to greater harmony between people and their jobs. The six areas of organisational life in
which mismatches occur are within the immediate environment people encounter at work. In each of these areas are the starting points for the journey from BO to WE. Each of these six areas contains the critical factors that either cause the problems of mismatch and BO or offer the solutions of good fit and WE. These factors can contribute to Ex or sustain the energy that people bring to their work. They either cause Cy and alienation or promote increased involvement and commitment to the job. They produce a lack of accomplishment and inadequacy or lead to greater effectiveness and achievement (Buitendag & Van Zyl, 2004; Maslach & Leiter, 1997).

Any of the six mismatches provides a good starting point for moving toward the goal of a better life at work. From a fit and WE point of view, rather than mismatch and BO, these are translated into the following guideposts (Maslach & Leiter, 1997):

3.5.1 Sustainable workload (a key dimension of organisational life)

Workload is a key dimension of organisational life (Buitendag & Van Zyl, 2004; Maslach & Leiter, 1997). From the organisation’s perspective, workload means productivity. From the individual’s perspective, workload means time and energy. Finding a compromise between the two perspectives is a fundamental challenge in maintaining a balanced relationship with work. The current crises in the workplace affect workload in three ways: it is more intense, it demands more time and it is more complex (Buitendag & Van Zyl, 2004; Maslach & Leiter, 1997).

3.5.2 Feelings of choice and control

The capacity to set priorities for day-to-day work, select approaches to doing work, and make decisions about the use of resources is central to working professionally (Buitendag & Van Zyl, 2004; Maslach & Leiter, 1997). Policies that interfere with this capacity reduce individual autonomy and involvement with work.
3.5.3 Recognition and reward

The current crises in the work environment (such as economic hardships, mergers and retrenchments) reduce the capacity of organisations to reward people meaningfully. People hope that their jobs will bring them the material rewards of money, prestige and security. In the current work environment, jobs have failed to do so, even though they are investing more time and effort in their jobs. An even greater contributor to the experience of BO is the loss of the intrinsic reward of doing enjoyable work and building expertise with respect to colleagues. The combined loss of extrinsic rewards diminishes the potential for work to be engaging (Buitendag & Van Zyl, 2004; Maslach & Leiter, 1997).

It could be argued that social-contextual events (feedback, communication and rewards) will affect WE (Ryan & Deci, 2000). Optimal challenges, effective feedback and freedom from demanding evaluations facilitate intrinsic motivation, and intrinsic motivation seems to be related to WE (Rothmann, 2002).

3.5.4 A sense of community

Community is undermined through the loss of job security and an excessive focus on short-term profit that excludes consideration of people. Personal relationships are fragmented and teamwork is undermined. The loss of community leads to greater conflict among people, less mutual support and respect and a growing sense of isolation (Maslach & Leiter, 1997; Buitendag & Van Zyl, 2004).

3.5.5 Fairness, respect and justice

A workplace is perceived to be fair when three key elements are present: trust, openness and respect (Maslach & Leiter, 1997). When an organisation achieves community, people trust one another to fulfil their roles on shared
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Job satisfaction -- South Africa.
Work -- Psychological aspects.
College teachers -- Job satisfaction.
Sense of coherence.

Note: Word-processed copy.

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projects, to communicate openly about their intentions and to show mutual respect. When an organisation acts fairly, it values every person who contributes to its success, and demonstrates that every individual is important. All three elements of fairness are essential to maintaining a person’s engagement with work. In contrast, their absence contributes directly to BO (Maslach & Leiter, 1997; Buitendag & Van Zyl, 2004).

3.5.6 Values

Values influence everything about a person’s relationship with work. The current crisis in the job environment is in many ways a major value conflict (Buitendag & Van Zyl, 2004; Maslach & Leiter, 1997).

Along each of the six paths towards these goals, there are two challenges: 
(1) creating harmony between people and their jobs in a way that leads to
(2) changing the job environment as well as the people

Targeting the job is critical, given all the evidence that BO and WE are primarily a function of the job situation.

An interesting factor that might play a role in the aetiology of WE is self-efficacy (Salanova et al., 2001). This implies that an upward “spiral of gain” may exist. If self-efficacy precedes and follows WE (Schaufeli & Bakker, 2003), this implies that self-efficacy breeds engagement which, in turn, increases self-efficacy beliefs. This finding corresponds roughly with that of Montgomery (2003), that employees who take the positive feelings from their work home, and vice versa, exhibit higher levels of engagement compared to employees for which there is no positive cross-over between the two different domains. Bakker et al., (2005) also proved that working wives’ levels of Vi and De, contributed to their husbands’ experience of Vi and De, and vice versa. WE can thus transfer from one partner to the other.
In summary, it would seem that job resources that act as motivators, in particular contribute positively to WE (Schaufeli & Bakker, 2003).

3.6 PROFILE OF AN ENGAGED EMPLOYEE

In order to study the profile of the engaged worker, it is necessary to reconsider the conceptualisation of the concept. In the definition put forward by Schaufeli et al. (2002a), there are a number of relevant facts that provide clues to the functioning of the engaged worker in an organisation, namely: Engagement is a positive, fulfilling, work-related state of mind that is characterised by Vi, De and Ab. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour. Vi is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work and persistence, even in the face of difficulties. De refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride and challenge. Ab is characterised by being fully concentrated and happily engrossed in one’s work, whereby time passes quickly and one has difficulty detaching oneself from work.

Schaufeli and Bakker (2003) conclude from a number of interviews that typical “engaged workers” have a sense of energetic and effective connection with their work activities and see themselves as being able to deal with the demands of their job. Furthermore, typical engaged employees have the following characteristics:

1. They are active agents. Engaged employees take the initiative and give direction to their lives. They do not submit passively to the influence of the environment, but rather give form to it, as well as direction to their lives. If they always have to perform the same functions with the same clients they may look for challenges outside their current environment (Schaufeli, 2004). Engaged employees are optimistic and trust themselves, characteristics which
seem to overlap with what other researchers called “personal initiative” or the “proactive personality” (Crant, 2000; Frese, Fay, Hilburger, Leng & Tag, 1997; Rothmann, 2002).

(2) They generate their own positive feedback. Engaged workers generate their own positive feedback. They create “rewards” in the form of recognition, success, administration and appreciation through their attitudes and activities. A positive spiral is thus maintained (Jackson, 2004).

(3) They are also engaged outside their work. Engaged employees are characterised by energy and enthusiasm, both in their work and private lives— they have a type of energy that never seems to fade (Schaufeli & Bakker, 2001). Therefore engaged employees are characterised by energy and enthusiasm both in their work and private lives.

(4) They have values that match the organisation’s values. While discrepancies exist between the norms and values of burnt-out employees and their organisations, engaged employees’ norms and values correspond with those of their organisation. BO can also be described as the result of not being able to realise personal and existential goals. If these goals are reached, employees experience meaning through their work (Jackson, 2004; Pines, 1993).

(5) They sometimes feel tired as well. Compared with burnt-out employees, engaged employees experience a different type of Ex. Engaged employees experience Ex because their energy reserves are also limited. However, the Ex can be described as “exhausted but satisfied” (Schaufeli and Bakker, 2001).

(6) May have been burnt-out before. Engaged employees may have been burnt-out, and burnt-out employees may have experienced WE previously. Edelwich and Brodsky (1980) describe BO as a process of progressive disillusionment, whereby initial enthusiasm gradually makes place for frustration, which ends up in apathy. However, the converse is also true:
employees, who previously suffered from BO, may show high levels of WE later in their lives (Jackson, 2004; Schaufeli, 2004).

(7) They want to work less, but they are not “workaholics”. Engaged employees are not workaholics. They experience pleasure in their work and also enjoy hobbies and voluntary work in the community. In contrast, workaholics give the impression of being stressed and compulsive (Schaufeli & Bakker, 2001). They distinguish between two dimensions that could be used to differentiate between workaholics and engaged employees at work (figure 3.4). The horizontal axis represents the extent of pleasure at work (i.e. pleasurable vs. unpleasurable). The vertical dimension relates to the mobilisation of energy. This makes it clear that WE and workholism are not the same concept.

Figure 3.4
A taxonomy of well-being at work (Schaufeli & Bakker, 2001)
3.7 DEMOGRAPHIC VARIABLES

Storm (2002) writes that very little if any information is available about the relationship between WE and different demographic variables. Hence other relevant findings could be investigated to improve our understanding of the phenomenon.

3.7.1 Age

A weak positive relationship with age is observed, namely: (0.05>r>0.17) (Schaufeli, 2004). For the separate dimensions, the relationship is also weakly positive, for example Vi: r=0.05; De: r=0.14 and Ab=0.17 (Schaufeli & Bakker, 2003). The correlation of age with the total UWES score is 0.14 (Schaufeli & Bakker, 2003), hence the conclusion that older employees feel slightly more engaged. Wissing and Van Eeden (2002) also found clear differences between young and older individuals on various other indexes of psychological well-being.

3.7.2 Gender

International research has to some degree studied gender specific aspects of WE (Oswald, 2004). Different authors conducting different research projects reported conflicting results (Donohue & Heywood, 2004, Tytherleigh, 2004). Men scored significantly higher than women on De and Ab (in a research study where N=5 450), whereas no gender differences in level of Ex seem to exist (Schaufeli & Bakker, 2003). Although statistically significant, in practice, these differences are irrelevant. Schaufeli (2004) does not report any specific gender differences. Hobfall (2002) argues that women may have less access to resources that could help buffer the negative effects of stress and maintain wellness.
3.7.3 Level of education

Small differences in levels of engagement between occupational groups exist, but these are also not of any practical significance (Schaufeli & Bakker, 2003). Professions that typically show high levels of WE are managers, entrepreneurs and farmers. Professions that typically manifest low levels of WE are blue-collar workers, police officers and home-care staff (Schaufeli, 2004). According to Tytherleigh (2003), the levels of occupational stress reported by women working in higher education are contingent on job-related factors, for example, occupational group, levels of senicrity, job roles and traditional beliefs about their roles.

3.7.4 Different ethnic groups

In the South African context, it cannot be taken for granted that scores for psychological well-being in one culture can be compared across cultural groups (Jackson, 2004). Wissing and Van Eeden (2002) found significant differences between the scores of black and white individuals on indexes of psychological well-being. They noted, however, that much more research needs to be done to understand results across culture, race and ethnicity.

3.8 THE POSITIVE EFFECTS OF WORK ENGAGEMENT

The positive effects of WE are found at the individual, group and organisational level.

3.8.1 Individual level

At a personal level, Schaufeli et al. (2003) determined that engagement is positively related to health. Low levels of depression and distress are normally found in engaged employees. Demerouti et al. (2001) found low levels of psychosomatic complaints. Langelaan et al. (2006) found that highly engaged employees differ from their colleagues in the sense that their behaviour is
characterised by low neuroticism, high levels of extraversion and high levels of mobility (the capacity to adapt to changing environments).

A close scrutiny of the three dimensions of WE (Schaufeli & Bakker, 2004), namely Vi, De and Ab, highlights a number of positive outcomes for the individual:

- According to Schaufeli et al. (2002a), Vi is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, not being easily fatigued, and persistence even in the face of difficulties.
- De is characterised by deriving a sense of significance in one's work, by feeling enthusiastic and proud about one's job and by feeling inspired and challenged by it (Schaufeli et al., 2002b; Storm, 2002).
- Ab is characterised by being totally and happily immersed in one's work and having difficulties detaching oneself from it (Schaufeli & Bakker, 2004; Schaufeli et al. 2002b; Storm, 2002).

Although these outcomes are listed at individual level, they are equally applicable at organisational level. Energy, resilience, enthusiasm and persistence affect the outcomes of the organisation in the same positive way as the individual will experience.

3.8.2 Group level

WE manifests in specific groups to a higher or a lesser degree. Bakker and Schaufeli (2001) observed in a study that included 130 teams from different organisations, that the collective level of engagement of the team was associated with the individual level of engagement of the team members. Engaged teams were able to acquire more job resources, which in turn, had a positive effect on the level of engagement. Salanova, Llorens, Cifre, Martinez and Schaufeli (2003) established that students, working on a particular task under time pressure, reported higher levels of WE when they felt competent to
solve the task. The research referred to previously (section 3.5) by Bakker et al. (2005) on working couples could also serve as an example of "collective WE", were the engagement of the spouse has such an influence on the partner in the relationship, that crossover of WE takes place between the two people which could also happen between team members.

3.8.3 Organisational level

At organisational level, the possible consequences of WE pertain to positive attitudes towards work and towards the organisation, such as job satisfaction, organisational commitment and low turnover intention (Demerouti et al., 2001; Hakanen, Schaufeli & Bakker, 2003; Salanova et al., 2001; Schaufeli et al., 2003). Hakanen, Schaufeli and Bakker (2003) studied a large sample of Finnish teachers and found a strong relationship between WE and positive work attitudes.

Sonnetag (2003) believes that positive organisational behaviour such as personal initiative and learning motivation are also consequences of a high level of worker engagement. On the basis of a study of 500 information and communication technology workers, Salanova et al. (2003) observed proactive behaviour in the workplace, from engaged employees.

Of paramount importance in the organisational context, is the fact that WE seems to be positively related to job performance. Salanova et al. (2003) found that engagement in employees had a positive impact on the service climate and customer satisfaction.

3.9 INTERVENTIONS TO PROMOTE WORK ENGAGEMENT

These interventions address the factors that contribute to the experience of engagement, as discussed in section 3.6. Each of the contributing factors can be seen as a strategic area that could lead to a "good fit" between the person and the job (and thus WE) or "mismatch" between the person and the job, and
thus BO. In this section the focus will be on possible interventions or strategies that could contribute to a situation of "good fit" between the individual and the job in the organisation.

There are mainly two challenges that need to be addressed in order to promote WE, namely to create harmony between people and their jobs in a way that leads to changing the job environment and the people. Targeting the job is critical, given all the evidence that BO and engagement are primarily a function of the job environment (Maslach & Leiter, 1997).

In order to meet these two challenges, the following organisational strategies are recommended:

3.9.1 A workload strategy

To deal with this type of mismatch, a workload strategy is needed. Leiter and Maslach (2005) advise that a workload strategy should include setting appropriate objectives for action in terms of being more resilient, having uninterrupted time, improved time management and reducing the workload.

3.9.2 Nurturing feelings of choice and control among employees

This entails problems being experienced in terms of authority and influence. Leiter and Maslach (2005) advise compiling an action plan to increase the autonomy experienced, sharing the leadership or revising the functioning of the work team.

3.9.3 Fostering a strong recognition and reward strategy

Problems in this area usually refer to the recognition, pleasure and compensation received from a job. Leiter and Maslach (2005) believe a reward strategy is necessary to deal with the “good fit” in terms of this. The job
incumbent will need to decide whether the “misfit is caused by insufficient compensation, lack of recognition or unsatisfying work. The incumbent’s action plan will then have to address these problems with an action plan on how to increase compensation, acknowledgement or how to acquire better job assignments.

3.9.4 Creating a sense of community

A sense of community refers to the social community in which this job exists. Possible strategies to improve the good fit in this domain could entail conflict resolution, improved communication and unity (Leiter & Maslach, 2005).

3.9.5 Practising principles of fairness, respect and justice in the workplace

The job incumbent experiences stress because of real or perceived injustices (disrespect, discrimination and favouritism) in the workplace. Appropriate objectives for taking action will include promoting respect, valuing diversity or ensuring equity (Leiter & Maslach, 2005).

3.9.6 Promoting positive values

Problems with dishonesty, destructiveness and meaninglessness require an action plan dealing with maintaining integrity, promoting constructive values and adding meaning (Leiter & Maslach, 2005).

In summary, Montgomery et al. (2003) conclude that an organisational strategy in which the identification of factors that promote well-being in employees is important to develop the experience of engagement with work. They found in their research that positive interference was correlated with feelings of De. A human resource intervention that emphasises the role of resources and uses the concept of engagement to characterise what makes
successful employees function better, has a greater chance of organisational acceptance.

3.10 CHAPTER SUMMARY

The purpose of chapter 3 was to provide a theoretical framework of the concept engagement. The concept was defined and the different dimensions that constitute the construct were analysed. A theoretical model was provided to clarify the development of the construct, after which an analysis of the profile of the employee with a high level of WE was given. Demographic variables pertaining to the concept and possible interventions to promote WE in employees were considered.

The following chapter will deal with the last theoretical construct relevant to this study, namely the SOC, as conceptualised by Antonovsky (1979).
CHAPTER 4

SENSE OF COHERENCE

Death, war and failure can occur. Untoward things do happen in life, but when they do occur, some people are able to cope and will not grieve endlessly. The person with a high sense of coherence will take up the challenge, be determined to seek meaning in the situation and will overcome it with dignity (Antonovsky, 1987).

4.1 INTRODUCTION

A general shift in the direction of research, away from the pathogenic paradigm towards a more salutogenic paradigm, led to the development of the construct sense of coherence (SOC) (Redelinghuys & Rothmann, 2004). Antonovsky (1979) initiated the shift towards salutogenic thinking, exploring the reasons why some people remain healthy despite the presence of ubiquitous stressors (Antonovsky, 1987; Basson, 2002). This exploration led to the study of what he termed, the "SOC" construct.

At any given time, one third to perhaps as much as one half of the population in modern industrialised society is experiencing some morbid or pathological condition, which adversely affects their health (Antonovsky, 1987). However, despite the presence of stressors and illness inherent in modern, industrialised life, there is evidence that human beings are able to overcome the negative effects of these forces and display remarkable resiliency and health. Some individuals suffer from a range of undesirable effects when faced with stressful situations, while others fare much better when faced with the same conditions (Antonovsky, 1987; Basson, 2002; Strümpfer, 1990, 1995).
According to Feldt (1997), the conceptual model of SOC originated in Antonovsky’s observation of female concentration camp survivors. Antonovsky (1979) was struck by the surprisingly good health of these women, despite their earlier harsh experiences. Hence research into the manifestation of SOC in females in a contemporary environment can be viewed as a fitting and necessary continuation of Antonovsky’s earlier research.

The stressors inherent in life have been at least theoretically connected to individual health (Antonovsky, 1987; Antonovsky & Sagy, 1985; Johnson, 1992). Antonovsky (1987) postulates that it is the particular way in which an individual appraises or understands his or her environment, referred to as SOC, that allows him or her to make sense of complex environments. According to Antonovsky (1987) and Loye (2000), humans are able to make sense of and find meaning in their reality, despite increased complexity. Strümpfer (1995) emphasises the fact that employees need to find and experience meaningfulness at work.

In the last 20 years, a significant body of research has been developed on Antonovsky’s concepts sense of coherence (SOC). It has been established that SOC correlates positively with health status, job satisfaction, participation at work, organisational commitment and job competence (Cloete & Stuart, 2003). SOC should not be understood as a particular coping style. Life’s stresses are many and varied and there is a wide variety of possible coping procedures. It is necessary to respond to the nature of the stressor if successful coping is to take place. A person with a strong SOC has the ability to select the particular coping strategy that is most appropriate to the current stressor (Antonovsky, 1987).

4.2 DEFINING SENSE OF COHERENCE

The original definition formulated by Antonovsky (1979, p. 123) reads as follows:
The SOC is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one’s internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected.

This original definition essentially referred to two components (predictability and an expectation of a reasonable outcome) which suggest a generalised expectancy for the future.

The definition was considerably refined as research revealed the presence of three underlying components in the SOC. Antonovsky (1987) subsequently redefined the SOC as a global orientation that expresses the extent to which one has a pervasive and enduring but dynamic feeling of confidence that

- the stimuli deriving from one’s internal and external environments in the course of living are structured, predictable, and explicable
- the resources are available to meet the demands posed by these stimuli
- these demands are challenges, worthy of investment and engagement

The central construct of salutogenesis (Antonovsky, 1987; Du Toit, 2002) is portrayed in the dynamic feeling of trust that

- stimuli from the internal and external environments are structured, predictable and explainable
- resources are available to meet the demands of the stimuli
- demands are viewed as challenges worthy of being pursued and invested in

Strümpfer (1990) conceptualised SOC as “habitual patterns of appraisal”, which encompass perception, memory, information processing and affect. Cloete and Stuart (2003) explained that SOC manifests in concrete
behaviours that are formed on the basis of experiences of success after coping with a variety of situations.

4.3 THE DIMENSIONS OF SENSE OF COHERENCE

Antonovsky (1987) sees comprehensibility, managability and meaningfulness as the three core components of the SOC. When individuals score high on these components, they are described as respondents with a strong SOC. Conversely, a low score indicates a respondent with a weak SOC. The three dimensions of the SOC construct are conceptualised as follows:

4.3.1 Comprehensibility (Co)

Antonovsky (1987) confirms that this dimension is indeed the well-defined, explicit core of the original definition. The stimuli deriving from one’s internal and external environments in the course of living are structured, predictable and explicable. This is called Co, where the individual makes sense of the stimuli in the environment (Antonovsky, 1987).

Basson (2002) explains that Co indicates whether a person perceives stimuli from the internal and external world as information that is ordered, consistent, structured and clear. A person high on Co expects future stimuli to be predictable or at least orderable and explicable (Basson, 2002; De Wet, 1998; Sandell, Blomberg & Lazar, 1998). Stimuli are thus experienced as comprehensible and as events that make sense on a cognitive level (Coetzee & Rothmann, 2004; Eriksson & Lindström, 2005).

Consistent experiences provide the basis for the Co component. Co refers to the extent to which one perceives the stimuli that confront one, deriving from the internal and external environments, as making cognitive sense- as information that is ordered, consistent, clear and structured- rather than
nonsense or as information that is chaotic, disordered, accidental, inexplicable and random (Antonovsky, 1987; De Wet, 1998; Strümpfer, 1990).

Antonovsky (1979) clearly states that nothing is implied about the desirability of stimuli. Accidents and terrible things can happen, but the person high on Co will make sense of them. The distinction between scoring low and high on Co is that, in the case of the former, the individual believes that things happen (invariably unfortunate things) and that this will probably continue to happen for the rest of the person's life. In the latter instance, events in life are seen as experiences that can be coped with - challenges that can be met. At worst, the event or its consequence, are bearable (De Wet, 1998).

4.3.2 Manageability (Ma)

The belief that resources are available to one to meet the demands posed by these stimuli is called Ma, where the individual is able to cope with the demands of the environment. An individual with a strong sense of Ma would therefore feel able to cope with difficult situations (Cloete & Stuart, 2003). This refers specifically to the amount of energy, skill and ability that a person has in order to manage the demands of everyday life (Viviers, 1996). An instrumental or behavioural element is therefore involved (Eriksson & Lindström, 2005).

An effective load balance, that is an under- overload balance in life experience, provides the Ma component, underload refers to a situation in which there is not enough direction or the individual is seldom called on to exercise his or her abilities or actualise his or her potential. Overload refers to the individual setting a pace too rapid for demanded development, or never having enough time and energy to do everything or not having enough resources to do everything. Ma refers to the extent to which one perceives that the resources at one's disposal are adequate to meet the demands posed by the stimuli. Load balance thus exists in the situation (Antonovsky, 1987; De Wet, 1998).
According to Antonovsky (1987), at one's disposal, may refer to resources under one's own control or resources controlled by legitimate others, for example, friends, one's spouse, God, a political party or a doctor whom the person trusts.

4.3.3 Meaningfulness (Me)

The belief that these demands are challenges worthy of investment and engagement is called Me, where the individual is able to emotionally identify and commit effort to handling these demands (Antonovsky, 1987). Me can be described as an individual's emotional assessment of situations as coherent and worthy of investment (Cloete & Stuart, 2003). It refers to the extent to which the individual feels that life also makes sense on an emotional, rather than a cognitive level (Coetzee & Rothmann, 2004). This dimension represents the motivational element of SOC (Basson, 2002; Eriksson & Lindström, 2005).

By implication this means that some challenges are seen as welcome rather than new burdens that one would much rather do without (Antonovsky, 1987). When others make decisions on behalf of an individual, and he or she has no say in the matter, he or she is reduced to being an object. A world thus experienced as being indifferent to what the individual does, comes to be seen as a world devoid of meaning. It is necessary to stress that the dimension is not control, but participation in decision making, taking responsibility for the decisions being made (De Wet, 1992).

4.3.4 The relationship between the different dimensions

Referring to a national survey conducted in Israel, in which the empirical correlations of the three dimensions were extremely high, Antonovsky (1987) argues that there is good reason to suspect that the three components are inextricably intertwined. The correlations however, were not perfect and he maintains that it is possible to conceive situations in which a person's
experiences will lead him or her to be high on one component and low on another.

Considering the eight possible types of combinations that emerge when the three components are dichotomised, Antonovsky (1987) predicts future behaviour. Type 1 (high scores on all three components) and type 8 (low scores on all three components) predict a stable simple pattern of viewing the world as either highly coherent or incoherent. The other 6 combinations in which respondents vary on their scores for Co, Ma and Me merit some further consideration. In table 4.1, the different combinations of outcomes are summarised.

**Table 4.1**

*Dynamic interrelatedness of the SOC components (Antonovsky, 1987)*

<table>
<thead>
<tr>
<th>Type</th>
<th>Co</th>
<th>Ma</th>
<th>Me</th>
<th>Prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Stable</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Rare</td>
</tr>
<tr>
<td>3</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Pressure to move up</td>
</tr>
<tr>
<td>4</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Pressure to move up</td>
</tr>
<tr>
<td>5</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Pressure to move down</td>
</tr>
<tr>
<td>6</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Pressure to move down</td>
</tr>
<tr>
<td>7</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Rare</td>
</tr>
<tr>
<td>8</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Stable</td>
</tr>
</tbody>
</table>

Situations 2 and 7 are most unlikely because respondents who view their world as being chaotic and unpredictable are most unlikely to think that they can manage well. Antonovsky (1987) argues that types 3 and 6 are inherently
unstable because high Co combined with low Ma leads to a strong desire to change.

The centrality of Me is seen in considering the two final types. If the respondents are high on both Co and Ma, knowing the rules of the game and believing that the resources are at one’s disposal to play successfully, without caring (type 5), one starts to fall behind in one’s understanding and loses one’s command of resources.

Type 4, which is low on Co and Ma, but high on Me, depicts a person with a profound spirit, deeply engaged in the search for understanding and resources. There is no guarantee of success, but there is a chance (e.g. Viktor Frankl and many others who survived difficult circumstances in Auschwitz).

Antonovsky (1987) concludes that the three components of the SOC are of unequal centrality. The motivational component of Me seems crucial. Without it, being high on Co or Ma is likely to be temporary.

4.4 CONCEPTUAL MODEL OF SENSE OF COHERENCE

Integral to Antonovsky’s salutogenic theory is the role of generalised resistance resources (GRRs) and stressors, termed “generalised resistance deficits” (GRDs).

4.4.1 Generalised resistance resources

Antonovsky (1979) notes that the strength of SOC relates to a variety of coping mechanisms, which he refers to as generalised resistance resources (GRRs). A GRR is described as any characteristic of the person, the group, the subculture or society that facilitates avoiding or combating of a wide variety of stressors (Strümpfer, 1995). The significant GRRs, which are also present in the workplace, as defined by Antonovsky (1979), are artefact and
material resources such as money and wealth; cognitive-emotional-intrapersonal and emotional resources (knowledge, intelligence and ego identity); value attitudinal resources such as rationality, flexibility and farsightedness, interpersonal-rational resources (social support systems); and macro-socio-cultural resources- the cultural norms and rules that control society’s behaviour (Cilliers & Kossuth, 2002).

4.4.2 Generalised resistance resources- resistance deficits

Antonovsky (1987, p.27) reconceptualises his original theory when he proposes that major “psychosocial generalised resistance resources-resistance deficits” (GRR-RDs) are one unified concept. He argues that for wealth, ego-strength, cultural stability, and so on, a person can be ranked on a continuum. He believes the same is true for stressors.

He terms stressors “generalised resistance deficits” (GRDs). Stressors are subsequently defined as stimuli, which pose a demand to which one has no ready-made, immediately available and adequate response. Stressors, which are unsuccessfully confronted, lead to health “breakdown” (Antonovsky, 1990). Antonovsky (1987) concludes that a stressor introduces entropy into the system, a life experience characterised by inconsistency, under- or overload and exclusion from participation in decision making. Three kinds of stressors need to be considered in terms of the development of SOC, namely chronic stressors, major life events and acute daily hassles. Chronic stressors are the primary determinants of a person’s SOC level (Antonovsky, 1987; Basson, 2002). Stressors that are successfully confronted promote health and lead to further strengthening of the SOC (Antonovsky, 1999).

Antonovsky (1987) clarifies that in proposing the salutogenic model, he focused on the GRRs, which build up a strong SOC, crucial to one’s ability to manage tension well. He then became convinced that stressors, under the overarching concept of GRR-RDs provide a theoretical basis for constructing a tool that links the resources and stressors through the SOC to a health
outcome. Antonovsky (1979) constructed a model to explain the functioning of a SOC in terms of pathogenic/salutogenic behaviour patterns. An illustration of an abstract from Antonovsky's comprehensive model is provided in figure 4.1.
Figure 4.1
An illustration of the functioning of SOC in terms of the Salutogenic Model (Antonovsky, 1979)
Explanation of figure 4.1:

Arrow A: Life experiences shape the SOC.
Arrow B: Stressors affect the GRRs at one's disposal.
Line C: By definition, a GRR provides one with sets of meaningful, coherent life experiences.
Arrow D: A strong SOC mobilises the GRRs and the SRRs at one's disposal.
Arrows E: These are child-rearing patterns, social role complexes, idiosyncratic factors and the chance to build up GRRs.
Arrow F: The sources of GRRs also create stressors.
Arrow G: Traumatic physical and biochemical stressors affect health directly.
Arrow H: Physical and biochemical stressors affect health status.
Arrow I: Public and private health measures avoid or neutralise stressors.
Line J: A strong SOC, mobilising GRRs and SRRs, avoids stressors, a strong SOC, mobilising GRRs and SRRs define stimuli as nonstressors.
Arrow L: Ubiquitous stressors create a state of tension.
Arrow M: The mobilised GRRs (and SRRs) interact with the state of tension and manage a holding action and the overcoming of stressors.
Arrow N: Successful tension management strengthens the SOC.
Arrow O: Successful tension management maintains one's place on the health ease/disease continuum.
Arrow P: Interaction between the state of stress and pathogens and "weak links" negatively affects health status.
Arrow Q: Stress is a general precursor that interacts with the existing potential endogens.
Arrow R: Good health status facilitates the acquisition of other GRRs.

Johnson (1992) constructed a model (figure 4.2) predicting that SOC would have a direct positive effect on perceived health status and the performance of health promoting behaviours. It was predicted that the performance of health-promoting behaviours would have a direct positive effect on perceived health status.
4.5 AETIOLOGY OF SENSE OF COHERENCE

The reason why certain people develop a stronger SOC than others arises and needs to be investigated to promote a comprehensive understanding of the concept (Diedericks, 1996). Social structures and cultural-historical situations create developmental and reinforcement experiences that may either lead to the development of a strong SOC or a weak SOC (Antonovsky & Sagy, 1985). In this section, the developmental and general life experiences causing SOC will first be discussed, followed by an explanation of which sources of SOC reinforcement experiences will be considered.

4.5.1 Developmental experiences

According to Antonovsky and Sagy (1985), three developmental experiences have a definitive influence on the strength of the development of the SOC,
namely age, the parent-child relationship and the stability of the community in which the individual functions.

4.5.1.1 Age

The older the person is, the stronger his or her SOC will generally be, as a result of the development of his or her total personality. During adolescence, the person’s sense of identity develops and during the twenties he or she normally develops psychological stability. Antonovsky and Sagy (1985) contend that a strong SOC develops by the age of about 30, in proportion to the experience of the world as being predictable and consistent.

4.5.1.2 Parent-child relationship

Antonovsky (1979) argues that the nature of the parent-child relationship has an influence on the strength of the SOC that will develop. Strong emotional bonds and open communication channels with the parents predict the development of a strong SOC.

4.5.1.3 Stability of the community

Lastly, the general stability of the community in which the individual functions will have a positive effect on the development of a strong SOC in the individual. When the individual receives conflicting information such as inconsistent rules or continuous chaos, the individual is often unable to make sense of his or her environment.

4.5.2 General life experiences

The strength of the SOC is furthermore strongly shaped by general life experiences relating to consistency, a balance between stress under- or overload and participation in socially valued decision-making processes (Antonovsky,
1984; Antonovsky, 1991; Antonovsky, 1996; Diedericks, 1996; Du Toit, 2002). These experiences refer to the following:

4.5.2.1 Consistency

Consistency refers to the extent to which a given life experience fits other previous or contemporary life experiences. If a given behaviour results in the same consequence as it did the previous time the person manifested the behaviour, he or she experiences consistency in his or her life experiences. The core of this dimension is the extent to which a person’s life is laden with surprises for which there is no reasonable explanation. The greater the consistency of a person’s life experiences, the more the person’s life is regarded as being predictable. A close link to the aetiology of the Co component of the SOC is observed (Antonovsky, 1984). However, the same source often sends different, surprising and even contradictory messages simultaneously and certainly over time. Conflicting information, such as vague or inconsistent rules, facing perpetual danger or chaos leads to the individual making less sense of his or her environment and then experiencing an uncertainty in knowing how to feel, think and act (Antonovsky 1991).

4.5.2.2 Underload-overload balance

This refers to the extent to which life experiences are appropriate to a person’s capacities. From birth, people are confronted by demands emerging from both the internal and external environment. A greater or lesser degree of success is repeatedly experienced. People become bored or overwhelmed. These tasks call on one to exert one’s energies, skills, knowledge, abilities and potentials so that the tasks can be coped with successfully (Antonovsky, 1984). Antonovsky (1991) also includes the resources at one’s disposal, for example, resources that those on one’s side have at their disposal to assist one. The significance of underload should not be underestimated. When there is nothing to manage, “emptiness” takes over and one’s personal and role identities wither (Antonovsky, 1984).
Antonovsky (1991) likens this to muscle atrophy that occurs when muscles are not used. Unused skills, capacities and potential also lead to a weakening of the sense of self. Balanced load experiences thus refer to a consistent history of being called upon (by one’s inner self or by the world around one) to act in the manifold ways that utilise one’s potential and are appropriate to the resources at one’s disposal.

4.5.2.3 Participation in decision making

With respect to life experience, it is essential to consider whether a person has chosen to undergo the experience and whether he or she experiences the rules of the game as legitimate. It is crucial that people approve of the tasks set before them, that they have considerable performance responsibility and that their behaviour has an impact on the outcome of the experience, if SOC is to strengthen as a result of the experience (Antonovsky, 1984). Antonovsky (1991) declares that when others decide everything for an individual, he or she is reduced to being an object. A world thus experienced as being indifferent to what we do, comes to be seen as a world devoid of meaning. It is not necessary for the person to control the decision-making process, but it is vital for the person to have taken part in the making of the decision, for example, in the relationship between a parent and a child, where the part the child plays might well be a subsidiary part. This motivational component is closely related to the Me of the SOC concept (Antonovsky, 1991).

4.5.3 Sources of sense of coherence-enhancing experiences

Different perspectives are proposed by different authors on how SOC can be enhanced and reinforced through life. The following is a synopsis of these views:
4.5.3.1 Higher levels of education

Johnson (1992) found that higher educational levels also seem to foster a higher SOC. It is believed that knowledge acts as a source of resistance against life's stresses.

4.5.3.2 Cultural diversity

Central to the salutogenic model are the many cultural paths that lead to the development of a strong SOC. The life experiences result in a strong SOC may vary from culture to culture. However, it remains important that an individual has had the life experiences that may lead to a strong SOC (Antonovsky, 1991, 1996).

4.5.3.3 Life spheres of importance

SOC does not imply that all aspects of life are understood and that the person is able to deal with the entire world or find it meaningful. People establish life spheres of subjective importance (boundaries), with a broad or narrow shape, outside of which things do not bother them (Antonovsky, 1996; Basson, 2002; Du Toit, 2002). People might, for example exclude, things that do not interest them such as politics (Basson, 2002). Antonovsky (1987) proposes that what happens outside these boundaries has no effect on the strength of the person's SOC. To maintain a strong, healthy SOC, over time, the following four boundary areas are relevant:

(1) a person's own inner feelings
(2) immediate interpersonal relationships
(3) the main area of activity (labour)
(4) existential issues of death, unpreventable failure, shortfalls, conflict and isolation (Antonovsky, 1987; Du Toit, 2002)
4.6 PROFILE OF A PERSON WITH A STRONG SENSE OF COHERENCE

SOC manifests as a dispositional characteristic of a person (Kivimäki, Feldt, Vahtera & Nurmi, 2000). SOC can furthermore be described as a fairly stable personality factor (Feldt, Leskinen, Kunnin & Mauno, 2000) that does not change much over time (Basson, 2002; Kivimaki et al., 2000). It thus refers to a generalised, long-lasting way of seeing the world and the individual’s life in it (Van Jaarsveld, 2005). SOC can also be described in terms of a person’s character, as a cognitive aspect of the character and as an indication of a person’s capacity to judge reality (Antonovsky, 1987).

A person with a strong SOC is guided by fundamental principles. There is individual autonomy in the strategies applied in a specific environment. A person with a strong SOC seeks a balance between rules and strategies and between stored and potential information. The individual will have confidence that he or she will be able to make sense of new information. The world is seen as challenging and not as threatening (Antonovsky, 1987).

A strong SOC will enable the person to

- understand the nature and dimensions of a strong chronic stressor and the person will be able to define and redefine the stressor and eventually cope with the stressor
- choose applicable resources and use them effectively to cope with stressors, instead of simply reacting in a helpless manner
- be motivated to view stressors as challenges, rather than threats and react negatively to them

Rothmann (2000) found a significant correlation between SOC and job satisfaction in eight organisations. One may thus conclude that an employee with a high SOC score will probably experience high job satisfaction. The person with
the high SOC will be confident that the problems he or she encounters can be solved and that, as in the past, things will eventually work out as well as can reasonably be expected (Antonovsky, 1987).

Regarding the work profile of the strong SOC employee, the person will make cognitive sense of the workplace and perceive it as clear, ordered, structured, consistent and predictable. The person will perceive the challenges of the workplace as bearable and will make emotional and motivational sense of work demands and welcome these demands as challenges worthy of engaging in (Strümpfer, 1990). It is hypothesised that an individual with a strong SOC tends to strive towards productive performance, recognition, reward and promotion (Van Jaarsveld, 2005) and tends to show high levels of professional efficacy (Steyn et al., 2004).

It is generally found that SOC shows negative correlations with measures of stress (Strümpfer & Wissing, 1998), implying that a strong SOC allows an individual to cope better with stressful situations and to use more effective coping mechanisms (Cloete & Stuart, 2003; Strümpfer & Wissing, 1998). The high SOC person appears to have a generally positive outlook, helping him or her to meet life’s challenges successfully. This suggests the existence of pathways that connect SOC with the concepts of cognitive appraisal, perceived social support and self-efficacy (Kivimaki et al. 2000).

Redelinghuys and Rothmann (2004) postulate that ministers with a high SOC will use more effective problem-solving behaviour, active coping and will experience higher levels of WE. They will also be less prone to emotional Ex and depersonalisation (two of the dimensions of BO). It is argued that ministers with a high SOC will better understand the nature of stressors and thus utilise effective responses, leading to lower BO levels.
In conclusion, Feldt (1997) relates a strong SOC to general well-being and emotional stability. Johnson (1992) maintains that the strong SOC person seeks a balance between rules and strategies, between stored and potential information. There is confidence that sense can be made of the new information. There is little felt danger in seeing the world as a challenge and in being open to feedback (Antonovsky, 1979).

4.7 DEMOGRAPHIC VARIABLES AND THE MANIFESTATION OF A STRONG SENSE OF COHERENCE

The SOC is believed to be a construct that is universally meaningful, cutting across lines of gender, social class, region and culture (Strümpfer, 1990). However, it is necessary to consider the effects of social variables, such as class, gender and lifestyle because these variables have long been known to influence an individual’s health and wellness (Waitzkin, 1983).

4.7.1 Age

The only demographic characteristic that has been proven to correlate strongly with SOC seems to be age. The older the person is, the stronger his or her SOC will generally be, because of the development of his or her total personality over time. During adolescence, the person’s sense of identity develops and during the twenties a person normally develops psychological stability. Antonovsky and Sagy (1985) hold that a strong SOC develops by the age of about 30, in proportion to the experience of the world as being predictable and consistent.

After studying 58 healthy senior citizens, Lutgendorf (1999) concluded that a strong SOC may help protect older adults from the physical effects of the stress of life transitions. She also found that when the blood tests of seniors with a strong SOC were compared to those with a weaker SOC, the strong SOC
subjects showed significantly higher immune system activity, protecting them against viruses and tumours.

4.7.2 Gender

Johnson (1992) postulates that across the samples studied, in general, males have a slightly higher score on the SOC than females. Antonovsky (1991) indicates that gender may account for significant differences in total SOC scores. In his analysis of 22 published and unpublished reports, he stated that men had significantly higher SOC than women in nine studies, while in 11 others, the men’s scores were higher, but not significantly so. In two studies, women were nonsignificantly higher (the nations studied included Israel, Canada, Finland, Norway and the USA).

4.7.3 Educational level

SOC increases with educational level (Johnson, 1992), but not significantly so. This is not surprising because knowledge is a type of resistance resource, albeit predicated on numerous antecedent social conditions.

4.7.4 Stability in the community

Antonovsky and Sagy (1985) report that stability of the community, older age and male gender were significantly related to higher scores in adolescents. They also postulate that the stability of the community in which one lives, may also be seen as a condition contributing to the development of the perception of the world around one as predictable and manageable.
4.7.5 Religion

Johnson (1992) found that expressing a Catholic or Protestant religious affiliation and stating that religion and/or spirituality are relatively important in one’s life, is generally related to a stronger SOC.

4.8 THE EFFECTS OF A STRONG SENSE OF COHERENCE

Antonovsky (1987) explains that a strong SOC is not a particular coping style, and that the stressors that life poses are many and varied. To adopt one pattern of coping consistently is precisely to fail to respond to the nature of the stressor and hence to decrease the chances of successful coping. A person with a strong SOC selects the particular coping strategy that seems most appropriate to deal with the stressor being confronted (Antonovsky, 1987; Steyn et al., 2004). Hence, the availability of a wide repertoire of coping strategies and flexibility in choice at any given time are crucial (Antonovsky, 1987; Feldt, 1997; Steyn et al., 2004).

A strong SOC might help employees to understand stressors, and to regard them as manageable and meaningful. A SOC might therefore moderate the effects of job stressors on Ex. A SOC is also expected to contribute to the PE of employees (Ortlepp, 1998; Steyn et al., 2004). A person with a strong SOC is likely to see stressful situations as less threatening, which could contribute to lower BO (Antonovsky & Sagy, 1985).

Feldt (1997) studied emotional Ex (one of the dimensions of BO). He found that as the level of SOC, strengthened the scores of emotional Ex decreased. It was also found that people in the caring professions, such as psychiatric nurses, with a strong SOC and a manageable work load will be far less likely to experience emotional Ex and depersonalisation (Levert, Lucas & Ortlepp, 2000; Rothmann et al., 2002).
A strong SOC enables a person to mobilise effective coping resources in the face of tension, predisposing one to move towards the health side of the health/disease continuum. A weak SOC is likely to result in poor tension management and an inability to mobilise adequate resources, culminating in health breakdown (Antonovsky, 1987; Levert et al., 2000).

Strümpfer (1990) argues that a strong SOC will have an impact on the way a person performs his or her job, in that he or she would

- make cognitive sense of the workplace and perceive it as clear, ordered, structured, consistent and predictable
- perceive the challenges of the workplace as bearable
- make emotional and motivational sense of work demands and welcome these demands as challenges worthy of engaging in

Van Jaarsveld (2005) hypothesises that an individual with a strong SOC tends to strive towards productive performance, recognition, reward and promotion.

According to Antonovsky's theory, health is conceptualised by the health/disease continuum, which refers to a multifaceted state of the human organism (Antonovsky, 1979). Operationally, Antonovsky suggests that at any one time, a person can be described as having a particular profile on the health ease/disease continuum, which is a score of the four facets: pain, functional limitation, prognostic implication and action implication (Antonovsky, 1979). Antonovsky believed that a person with a strong SOC maintains a more favourable position on this continuum than others.
In conclusion, according to the theory, SOC can promote an individual’s health status through three different channels (Feldt, 1997):

(1) It may have direct physiological health maintaining-consequences in such a way that the perception of the world of stimuli as comprehensible, manageable and meaningful activates the brain to send messages to other bodily systems, which maintain homeostasis.

(2) SOC can also operate through the selection of health-promoting behaviours. The person with a strong SOC is more likely to define stimuli as nonstressors and more likely to avoid stressors with which it will be difficult to cope successfully. Hence such a person is more likely to avoid delay in treatment, to comply with professional guidance, to seek information relevant to health and to reject maladaptive behaviours.

(3) The third channel refers to an individual’s coping process. The strong SOC person is more likely to define a stressor as benign or even as a welcome challenge, confident that it can be handled well.

4.9 INTERVENTIONS TO PROMOTE A SENSE OF COHERENCE

Although SOC has been defined as a relatively stable dispositional orientation (Antonovsky, 1987), it is possible that job stress could impact on employees’ SOC.

The organisation could contribute to the development of employee’s SOC by presenting information in a consistent, structured and orderly way that the employees understand completely (Rothmann et al. 2002). To ensure that employees feel that work demands are under their own or others’ control; the organisation can provide the necessary knowledge, skills, materials, instruments, support and other resources. Furthermore, by being allowed a degree of independence and freedom of choice to execute the task at hand in their own way, employees will feel that their jobs are meaningful. If employees’ SOC can
be enhanced in the organisation, the organisation may contribute to the enhancement of the employees’ job satisfaction (Rothmann et al. 2002).

Although SOC has been defined as a relatively stable dispositional orientation (Antonovsky, 1987), it is possible that job stress could impact on employees’ SOC.

Diedericks (1996) proposes that an individual can also engage in certain actions himself or herself to promote a strong SOC and prevent the experience of BO, namely to take regular rest periods, to engage in positive interactions with other people and to know the self well enough to be able to judge when too many demands are being made on the person.

Feldt (1997) declares that on the basis of his extensive research, he feels confident in disagreeing with Antonovsky, and arguing that SOC is also flexible in adulthood. He argues that there is always “hope” in adult life; SOC is not rigidly fixed and may strengthen along with appropriate environmental factors. He believes that this fact must be considered in work organisations.

Feldt (1997) proposes that well-being in the workplace can be enhanced if there is adequate understanding of the ways in which psychosocial work characteristics shape employee’s SOC, and thus their well-being at work. Management and health and safety officers should pay particular attention to ensuring a satisfactory organisational climate, which, as the present results demonstrate, enhance employees SOC and hence well-being. Those who have subordinates should remember that their style of leadership may shape their employees SOC and well-being at work. In particular, employees need social support, encouragement and advice at work as well as constructive feedback on their achievements.
Every effort should be made to remove job insecurity which, according to Feldt (1997) weakens SOC and consequently, well-being. It is of utmost importance that employees know what to expect from their organisation. For example, when an organisation is going through major changes, giving out information early and maintaining open lines of communication are key factors in reducing employee’s uncertainty about their jobs. Leadership and managers also need to consider the coping resources of employees facing unemployment and layoffs. Their SOC (and thus their ability to cope with stressors at work) should be sustained by every possible means. For example, proper training and thorough initiation into the job will help the employee to experience his or her job as meaningful, comprehensible and manageable.

A final recommendation from Feldt (1997) is that managers and job designers need to consider employees’ own aspirations and their capacity to perform the tasks required of them. High work demands can cause stress in employees with a weak SOC, while they may serve as promoters of well-being among employees with a strong SOC.

4.10 CHAPTER SUMMARY

The aim of chapter 4 was to provide a theoretical framework of the concept SOC. The concept was defined and the different dimensions that make up the concept were discussed individually. A discussion of the initial theoretical framework as conceptualised by Antonovsky (1979) was given. The profile of an individual with a high SOC was analysed, and the effects of a strong SOC considered. Lastly, possible interventions by the organisation to contribute to the development of the SOC of its workers were discussed.

In the following section a brief theoretical overview of the relationship between the three central constructs in the research, namely BO, WE and SOC will be given.
THE RELATIONSHIP BETWEEN BURNOUT, WORK ENGAGEMENT AND SENSE OF COHERENCE

1. INTRODUCTION

To conclude the previous three chapters (the literature study), the relationship between BO, WE and SOC needs to be studied.

2. THE RELATIONSHIP BETWEEN BURNOUT AND WORK ENGAGEMENT

The literature constituting the salutogenic paradigm describes WE as the assumed opposite or antipode of BO. Engaged employees are seen as having a sense of energetic and effective connection with their work activities, and as being able to deal with the demands of their jobs (Schaufeli & Bakker, 2004). From a positive psychological point of view, BO is redefined as an erosion of this engagement with the job (Maslach & Leiter, 1997). What started out as important, meaningful and challenging work, becomes unpleasant, unfulfilling and meaningless. Energy turns into Ex, involvement turns into Cy and professional efficacy turns into RPE.

There are indications in many of the pioneering BO theories that scientists considered the positive outcomes, as well as the negative outcomes from the early stages of the conceptualisation of the BO phenomenon. Hobfall and Shirom (1993), and Leiter (1993) included references to positive work experiences and their consequences.

Blaxter, Hughes and Tight (1998) propose that the academic environment makes academic personnel particularly prone to Ex. In terms of the present study, the
energy that female academics experienced initially, might turn into Ex quickly and unexpectedly.

Two major thought directions developed regarding the relationship between BO and WE. These two directions can be described as follows:

2.1 **Burnout and work engagement as opposite poles**

Maslach and Leiter (1997) assume that WE and BO constitute the opposite poles of a continuum on work-related well-being, with BO representing the negative pole and WE the positive pole. Since BO is defined in terms of the dimensions, Ex, Cy and RPE, WE would consist of the opposite poles, namely energy, involvement and professional efficacy. Opposite scores on the MBI (measuring BO) will then automatically indicate the level of WE, when reversed.

2.2 **Burnout and work engagement as two distinct concepts**

Schaufeli and Bakker (2003) argue that there are two main reasons why BO and WE cannot be measured by the same questionnaire:

- It is impossible to expect that the concepts are perfectly negatively correlated. Hence it is incorrect to accept that an employee who is not burnt-out, is necessarily an engaged employee. They argue that “feeling emotionally drained from one’s work once a week” (an item in the MBI), does not exclude that in the same week one might “feel bursting with energy” (referring to one of the items of the UWES).
- Empirically, the relationship between the two constructs cannot be studied when they are measured on the basis of the same questionnaire.
Hence it is believed that the two concepts should be viewed as being opposite states, with BO having a negative impact and WE a positive impact. However principally, they need to be studied as being independent of each other. The three dimensions of BO, namely Ex, Cy, and lack of PE, are believed to be negatively related to the three dimensions of WE, namely Vi, De and PE (Demerouti et al., 2001; Montgomery et al., 2003; Salanova et al., 2001; Schaufeli & Bakker, 2003; Schaufeli, Martinez, Marques-Pinto, Salanova et al., 2003).

Regarding the aetiology of BO and WE, Schaufeli and Bakker (2004) used structural equation modelling to analyse data from four independent occupational groups (N=1698). Results confirmed that BO and WE were not simply each other’s opposites, but instead shared between 10 and 25% of their variances. The study showed that job demands were the primary predictors of BO (lack of resources were somewhat less important). Their results confirmed that job resources (performance feedback, social support from colleagues and supervisor coaching) were the only predictors of WE (Bakker et al., 2005).

It is possible in theory to find that a respondent scores highly on BO and high or low on WE. The converse will then also be possible, in other words that an employee who scores high on WE, scores high or low on BO. Schaufeli and Bakker (2003), however, concede that in practice, it is likely that BO and WE will be substantively negatively correlated.

Gonzalez-Roma et al., (2006) undertook a study to ascertain whether items measuring opposite BO and WE dimensions were scalable on a single underlying bipolar dimension. They concluded that the responses for Ex-Vi and Cy-De items did not show the diagonal form characteristic of a linear relationship. Bakker et al., (2005) cite the example of employees in certain low-demand, low responsibility jobs, in order to explain this complex relationship. These employees may not be burnt-out, but this does not mean that they are highly
involved or engaged in their jobs either. Instead of being mutually exclusive states, BO and WE are considered to be independent states (Bakker et al., 2005).

Schaufeli (2004) represents the complicated relationship between BO and WE by means of a diagram (figure A). BO and WE are conceptually related to each other, resulting in the identification of two work-related dimensions of well-being, namely (Schaufeli & Bakker, 2001):

1. activation (energy), ranging from Ex to Vi
2. identification, ranging from Cy to De

Figure A
The relationship between BO and WE (Schaufeli, 2004)

<table>
<thead>
<tr>
<th>BO</th>
<th>WE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex</td>
<td>Activation/Energy → Vi</td>
</tr>
<tr>
<td>Cy</td>
<td>Identification → De</td>
</tr>
<tr>
<td>RPE</td>
<td>Ab</td>
</tr>
</tbody>
</table>

BO researchers have proposed that the conceptual opposites of Ex and Cy (the core dimensions of BO) are Vi and De (the core dimensions of WE) respectively (Maslach & Leiter, 1997; Schaufeli et al., 2002a). These findings were supported in a study by Gonzalez-Roma et al., (2006). They tested the linear relationship
between Ex and Vi and Cy and De in three different organisations, namely a telecom company, a pension fund company and an insurance fund company. The results of this study confirmed two bipolar dimensions, namely activation (energy) and identification.

Schaufeli and Bakker (2001, 2004) proposed a particular positioning in the existing two-dimensional model that consists of an activation and pleasure dimension. They assume that the activation dimension is spanned by Ex and Vi, whereas the pleasure dimension is likewise spanned by Cy and De. Langelaan et al. (2006) illustrated this process by means of an integrated model in figure B.

**Figure B**

*Integrated model to classify BO and WE, based on the opposing dimensions of each concept* (Langelaan et al., 2006)
WE can thus be distinguished but not divorced from BO in terms of its structure and operationalisation (Sieberhagen & Rothmann, 2004).

In 15 studies (N= 6 726) the Utrechtse BO Scale (the Dutch version of the Maslach BO inventory-general survey (MBI-GS) was included to study the relationship between BO and WE (Schaufeli & Van Dierendonck, 2000). This was done to allow an examination of the correlations between the three dimensions of BO (Ex, Cy and RPE) and WE. It was expected that BO and WE would be negatively correlated, especially as far as Vi and Ex, and De and Cy were concerned. The results of the study indicated that BO and WE scales were indeed significantly negatively related. The three WE scales were most strongly correlated with RPE, which might have been caused by the fact that the items of the efficacy scale were positively worded and reversed in order to assess ineffectiveness (Schaufeli & Bakker, 2003). De was strongly negatively correlated with Cy, but contrary to expectations, the correlation between Vi and Ex was relatively low. Vi and Ex were much less strongly interrelated than was expected. In other words, engaged employees are not cynical and feel competent in their jobs and, to a lesser degree, do not feel fatigued.

The third dimension of BO, namely lack of PE, was most strongly related to all three aspects of WE (Schaufeli & Bakker, 2003). This might be because professional efficacy is measured with items that are positively formulated and subsequently reversed to constitute a "negative" score that is supposed to be indicative of RPE. A study by Bouman, Ten Brake and Hoogstraten (2000) confirmed that the low negative correlations between RPE efficacy, on the one hand, and Ex and Cy, on the other, change to a much higher positive correlation, when negative items are used instead of reversing positively formulated items.

Schaufeli and Bakker (2001) found that BO and WE are negatively related, sharing between 10 and 25% of their variance. Storm (2002) found a canonical
correlation of 0.51 between BO and WE. A moderate negative correlation (r=-0.42) was found between Cy and De. Vi correlated negatively with Ex (r=-0.28). Bakker et al., (2005) found that that empirically BO and WE are moderately highly and negatively related. Enzman (2005) found a high correlation between WE and the RPE dimension of the MBI-GS. He argues that where BO, as measured by the MBI, correlates more strongly with job demands, WE correlates more strongly with job resources.

Various South African studies confirmed a relationship between BO and WE, for example, between teachers in the North West Province (Jackson, 2004) and emergency workers in Gauteng (Naude, 2003).

3. INTEGRATION OF THE THREE CONSTRUCTS

Regarding the third construct, namely SOC, the question arises whether a strong SOC can prevent a major threat such as BO (Rothmann et al., 2002). A person with a strong SOC is likely to see stressful situations as less threatening, which could contribute to lower levels of BO (Antonovsky & Sagy, 1985). Felt (1997) found that as the level of SOC strengthened, the scores of BO (specifically emotional Ex) decreased. Gilbar (1998) also reports that individuals with a strong SOC experience less BO than those with a weak SOC. Levert; Lucas and Ortlepp (2000) found that people in the caring professions, with a strong SOC and a manageable workload, will be far less likely to Ex and Cy. Levert et al. (2000) reported a significant negative correlation between two components of BO (Ex and Cy) and SOC.

Levert et al. (2000) conducted a number of moderated multiple regression analysis to determine whether the SOC moderated the effects of the work environment on BO in psychiatric nurses. Contrary to indications in much of the literature (Cooper & Payne, 1991; Semmer, 1996) they did not find the SOC to
be a significant moderator of BO. They argued that moderated regression procedures were used, which tend to yield conservative estimates of interaction effects (Cohen & Wills, 1985).

In terms of the relationship between WE and SOC, Nelson et al. (2002) advocate a positive approach in future studies of gender, work stress and health. They support the inclusion of positive psychological states such “active WE”. Simmons (2000) examined several indicators of eustress, including Me and Ma (two of the dimensions of SOC). According to his research, Me and Ma are strong indicators of active WE. Strümpfer (2004) adds to this argument in proposing that Me relates to De as a dimension of WE.

It is arguable that a strong SOC has an influence at an earlier point, namely that it changes the stress appraisal in the first place (Levert et al., 2000; Semmer, 1996). This implies that SOC has a mediating, rather than a moderating effect. Antonovsky (1987) was convinced that a person with a high SOC will be more likely to define stimuli as nonstressors and to define the stress attributed to stimuli perceived as stressors as benign or irrelevant. Regarding BO and SOC, Basson (2002), in a South African study among pharmacists, found that 39% of pharmacists experienced moderate to high levels of emotional Ex and 28% experienced moderate to high levels of depersonalisation. Results proved that pharmacists with a strong SOC experienced less BO and that SOC was significantly negatively related to emotional Ex, depersonalisation and personal accomplishment. She concluded that pharmacists with a strong SOC are less susceptible to BO.

Basson (2002) found that Me (SOC) is most strongly related to the personal accomplishment (parallel to RPE) dimension of BO. Hence, pharmacists with a strong sense of Me believe that the professional demands encountered are challenges worthy of investment and management and are therefore less likely to experience BO. Pharmacists who do not experience events in life as manageable
tend to experience a reduction in their emotional resources and feel emotionally drained. Basson (2002) found practical significant correlations between the SOC and BO.

These findings correlate with the findings of Redelinghuys and Rothmann (2004) in ministers. They found that ministers with a high SOC use more effective problem-solving behaviour, active coping and experience higher levels of WE. They are therefore less prone to emotional Ex and depersonalisation (dimensions of BO). It is argued that ministers with a high SOC will better understand the nature of stressors and thus utilise effective responses, leading to lower BO levels and higher WE levels.

Feldt (1997) paid specific attention to the moderating effect of SOC on BO. He found that as the level of SOC strengthened, the Ex scores decreased. It was also found that people in the caring professions, for example, psychiatric nurses, with a strong SOC and a manageable workload will be far less likely to experience Ex and Cy (Levert et al., 2000; Rothmann et al., 2002).

Hence a person with a strong SOC will perceive and assess stressful situations as less threatening, which will then lead to a lower manifestation of BO (Antonovsky & Sagy, 1985).

This overview concludes the first phase of the study, namely the literature review that was given in chapter 1 (Orientation to the research), chapter 2 (BO), chapter 3 (WE) and chapter 4 (SOC). The second phase of the research, namely the empirical phase will commence in chapter 5.
CHAPTER 5

THE EMPIRICAL STUDY

5.1 INTRODUCTION

This chapter introduces the empirical phase of the research and provides the research design for the study project as a logical sequence that connects the empirical data to the study's initial research question, and ultimately, to its conclusions (Yin, 1994).

An explanation of the compilation of the sample group, as well as the measuring instruments, method of data collection and data analysis is provided. Each of the three measuring instruments (MBI, UWES and SOC) is discussed and evaluated in terms of their theoretical and statistical properties and ultimately their suitability for use in this research design. The biographical variables are discussed and a hypothesis formulation is provided.

The compilation and characteristics of the population and sample will now be discussed.

5.2 POPULATION AND SAMPLE

The compilation and characteristics of the population and sample are discussed in the following sections. The measured biographical variables relating to the sample are presented in section 5.6.
5.2.1 Characteristics of the population

Two organisations were used in this research namely the University of South Africa (Unisa) and the Tshwane University of Technology (TUT). Both organisations are situated in Pretoria (the greater Tshwane area). These two institutions were selected for various reasons, namely:

- They share the same history, since both experienced complicated mergers in the recent past. The institutions represent a full range of the various institutions of higher learning in South Africa, namely a comprehensive learning institution (Unisa), as well as a University of Technology (TUT). Both institutions offer a wide variety and level of tuition, from national diplomas and bachelor’s degrees, to various postgraduate degrees, culminating in doctoral degrees. They represent a broad and diverse range of academic programmes offered in various specialisation fields. The female academics used in this study represent specialists in fields as diverse as music and nature conservation, mathematics and art, social sciences and architecture.

- A significant difference between the two institutions manifests in the fact that Unisa is essentially a distance learning institution, whereas TUT concentrates on contact learning between lecturers and students. The respondents from Unisa were all employed in Pretoria (the greater Tshwane area). TUT was represented by a number of different campuses where contact lecturing takes place, resulting in permanent lecturers being employed at various sites. These have a geographical dispersion from Gauteng (Pretoria West, Arcadia, Soshanguwe and Garankuwa Campuses) to Mpumalanga (éMalahleni and Nelspruit Campuses) and Limpopo (Polokwane Campus). All female academics from these areas formed part of the population.
The population consisted of the female academics in permanent employment at Unisa and TUT, during October and November 2006. There were 652 female academics in permanent employment at Unisa and 338 at TUT during this time period. The total population of 990 female academics was invited to participate. Of the 990 in the population, 190 responded to the request to participate. Of these, 187 questionnaires could be used. Three questionnaires were sent in, in an incorrect format, which made them impossible to encode. The total population that responded was thus 18.9%. Pallant (2001) argues that, for this type of research, the minimum number of respondents needed would be 150 (15%). A total of 187 respondents were thus decided to be an acceptable response rate.

5.2.2 Characteristics of the sample

Hussey and Hussey (1979) describe a sample as comprising of some of the members of a population, the latter referring to any other collection of items under consideration for the purpose of the research. According to Sekaran (1992), sampling is the process of selecting a sufficient number of elements from the population so that by studying the sample and understanding the properties or characteristics of the subjects, the researcher is able to generalise the properties or characteristics to the population elements.

Two main categories of sampling can be identified namely ‘probability sampling’ (where the researcher can determine in advance that each segment of the population will be represented in the sample), and nonprobability sampling (where the researcher has no way of forecasting or guaranteeing that each element of the population will be represented in the sample) (Watkins, 2006).

This study utilised nonprobability sampling, and a specific method called convenience sampling, which is part of nonprobability sampling. This type of sampling does not identify a subset of a population and makes use of people that are readily available (Christensen, 1997; Hussey & Hussey, 1979).
5.3 MEASURING INSTRUMENTS

After careful consideration of the validity and reliability of the available measuring instruments in the literature, a number of different questionnaires were chosen and combined with a biographical questionnaire compiled by the researcher. The final questionnaires consisted of a compilation of a biographical questionnaire, the Maslach Burnout Inventory (to measure the levels of burnout), the Utrecht Work Engagement Scale (to measure the levels of work engagement) and the SOC questionnaire (to measure the strength of the sense of coherence) of the participants.

5.3.1 Biographical survey

The following data were collected via the biographical survey: age, years’ experience, population group, marital status, highest completed qualification, current job title and campus of employment. Data collected for this purpose were used purely to describe the nature and compilation of the sample group.

The biographical variables pertaining to the sample are presented in section 5.6.

5.3.2 The Maslach Burnout Inventory (MBI)

The MBI-GS was used to measure burnout (BO).

5.3.2.1 Historical development of the MBI

Maslach and Jackson (1981) developed the MBI early in the 1980s. The development of this version of the MBI took eight years. The original MBI was developed to measure the hypothetical aspects of BO defined as a three-factor
syndrome, comprising emotional exhaustion, depersonalisation and reduced personal accomplishment. According to Maslach, Jackson and Leiter (1996), it was designed to measure the BO experienced by health professionals. The first inventory consisted of 47 items, with two response formats, namely frequency and intensity of feelings. It was scored on a seven-point Lickert-type scale.

A second edition of the test was published five years later (Maslach & Jackson, 1986). After a factor analysis, 10 factors accounted for three-quarters of the variance. Selection criteria were applied and as a result the second edition consisted of a 25-item inventory. The number of items was then reduced, based on their ability to meet the criteria for skewness and kurtosis, through a series of regression analysis and factor analysis to the current 16 items.

According to Maslach et al. (1996), a need for a scale that measures BO in occupational groups without constant, direct personal contact with service recipients or with only casual contact with people, prompted the development of the Maslach BO inventory – general survey (MBI-GS) instrument. A multicultural base with the scales administered to samples in their native languages formed the basis of the research plan in the development of the MBI-GS. The third edition of the test was published in 1996 (Maslach et al. 1996). This latest edition includes, in addition to the traditional MBI-human services survey (MBI-HSS) and the MBI-educators survey (MBI-ES), the MBI-general survey (MBI-GS). The MBI-GS can be used in any occupational context (Schaufeli & Enzman, 1989) and includes three subdimensions (Ex, Cy and RPE). These three subdimensions parallel those of the original MBI, except that the items do not explicitly refer to working with people (Schaufeli & Enzman, 1998).

Maslach et al. (1996) indicated that this instrument was also tested with diverse populations, thus creating an opportunity to assess the robustness of the differentiation between the factors across settings, occupational groups and countries.
The three-factor structure of the MBI-GS was confirmed by means of a confirmatory factor analysis. This indicated that it was applicable to a wide range of occupations such as managers, clerical and maintenance workers, technologists, therapists and nurses (Maslach et al., 1996).

5.3.2.2 Description of the MBI-GS

The MBI-GS consists of 16 items that constitute the three sub-dimensions, namely Exhaustion (Ex), Cynicism (Cy) and a reduced sense of professional efficacy (RPE). All items are scored on a seven-point frequency rating scale ranging from 0 (never) to 6 (always) (Maslach et al., 1996; Sieberhagen & Rothmann, 2004).

The MBI-GS measures BO on three subdimensions namely Ex, Cy and RPE (Maslach & Jackson, 1981). Maslach and Jackson (1986) regarded these scales as interrelated, but conceptually distinct.

a Exhaustion

Ex is assessed as feelings of being emotionally overextended and exhausted by one’s work. Ex is more predictive of stress-related health outcomes than Cy or RPE. Maslach et al. (1996) state that Ex items are generic without the emphasis on emotions and without direct reference to service recipients, but including references to fatigue. Feelings of being overextended and depleted of one’s emotional and physical resources are prevalent. Typically the people that one works with are not necessarily the only source of these feelings.
b  **Cynicism**

This subdimension (referred to as depersonalisation in the original MBI) is assessed as an unfeeling and impersonal response towards the recipients of one's care, service or treatment (Maslach & Jackson, 1986). In the MBI-GS, Cy refers to the interpersonal aspect of BO and is a negative, callous or detached response to various aspects of the job. It represents dysfunctional coping and reduces the amount of energy available to perform work and seek creative solutions to solve work-related problems. Cy reduces the potential to develop PE.

c  **Reduced professional efficacy**

RPE refers to feelings of competence and successful accomplishment in one's work (Maslach & Jackson, 1986). It is used parallel to reduced personal accomplishment as used in the original MBI.

According to Maslach et al. (1996), the MBI-GS does not focus primarily on the service relationship, but on the performance of the work in general. It measures a crisis in one’s relationship with work and not necessarily a crisis in one’s relationship with people at work (Schaufeli & Enzman, 1998). It measures the respondents' relationships with their work on a continuum from WE to BO (Fourie, 2005).

Maslach et al. (1996) note that RPE measures an individual's expectations of continued effectiveness at work. It refers to the self-evaluation dimension of BO and is a feeling of competence, productivity and achievement at work (Fourie, 2005). Though similar to personal accomplishment, there is an added focus on expectations. It also includes satisfaction with past and present accomplishments.
5.3.2.3 Administration and scoring of the MBI

The MBI takes about seven minutes to complete (Schaufeli & Enzman, 1998) and the respondents receive full instructions. The testing session should be characterised by respondent confidentiality, privacy and avoidance of sensation to BO (Maslach et al., 1996; Van Jaarsveld, 2005). The respondents can be tested individually or in group settings.

The examiner should not be a supervisor or manager who has some direct authority over the respondents. Honesty in answering the questions should be stressed (Basson, 2002). The examiner should request that respondents answer all the questions, because this is crucial to the scoring of the instrument (Fourie, 2005).

The three dimensions measured by the MBI-GS, as discussed, are each measured by the following items respectively:

a. Exhaustion

Ex is measured by questions 1, 2, 3, 4, 6. It includes items such as “I feel emotionally drained from my job” and “I feel tired when I get up in the morning and have to face another day on the job”. (Gmelch & Gates, 1998).

b. Cynicism

Cy is measured by questions 8, 9, 13, 14, and 15. A typical example of the items used to measure depersonalisation is “I just want to do my work and not be bothered” (Gmelch & Gates, 1998).
c Reduced professional efficacy

RPE is measured by questions 5, 7, 10, 11, 12 and 16. "At my work, I feel confident that I am effective at getting things done", is one of the items used to assess RPE (Gmelch & Gates, 1998).

The "professional efficacy" items (questions 5, 7, 10, 11, 12 and 16) should be reversed scored, such that RPE is related to BO (Gmelch & Gates, 1998; Maslach et al., 1996).

High scores for emotional Ex and Cy are indicative of BO. A low score for RPE is an indication of participant BO. Separate scores for each dimension, as well as a total score (overall score) for BO, are calculated in this research.

5.3.2.4 Interpretation of the MBI

A high degree of BO is reflected in high scores on the Ex and Cy subdimensions and in low scores on the PE subdimension. Maslach and Jackson (1986) consider scores high if they are in the upper third of the distribution of the normative sample (figure 5.1). Similarly, scores in the middle and lower third of the normative sample are considered average and low respectively.
Table 5.1

Categorisation of MBI-GS scores: range of experienced BO (Maslach & Leiter, 1997)

<table>
<thead>
<tr>
<th>MBI-GS subdimensions</th>
<th>Range of</th>
<th>Experienced</th>
<th>BO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Average</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>(lower third)</td>
<td>(middle third)</td>
<td>(Upper third)</td>
</tr>
<tr>
<td>North American sample</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N=3727)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex</td>
<td>≤12</td>
<td>13-18</td>
<td>≥19</td>
</tr>
<tr>
<td>Cy</td>
<td>≤6</td>
<td>7-10</td>
<td>≥11</td>
</tr>
<tr>
<td>RPE</td>
<td>≤6</td>
<td>6-8</td>
<td>≥9</td>
</tr>
</tbody>
</table>

The classification of BO levels is an unresolved issue in the non-American versions of the MBI. Valid criteria are needed to classify BO levels. As long as valid cut-off points are not available, the inventory cannot be used as an individual assessment tool for clinical diagnosis (Basson, 2002).

By employing the cut-off points from the manual, the number of BO cases, are believed to be overestimated (Schaufeli & Enzman, 1998; Schaufeli & Van Dierendonck, 1995) because of the “healthy worker effect”. This implies that the systematic underestimation of levels of BO because exclusively working subjects (persons in employment) and therefore more or less healthy subjects, were included in the normative sample.

5.3.2.5 Psychometric properties of the MBI

Internationally, Cronbach alpha coefficients of the MBI vary between 0.71 and 0.90 for the three subdimensions (Maslach & Jackson, 1981). In South Africa, a
number of studies could be found that reported on the internal consistency (chronbach alpha coefficients) of the MBI-GS:

Using the MBI-GS, Rothmann and Jansen Van Vuuren (2002) found satisfactory alpha coefficients, namely Ex= 0,79; Cy= 0, 84 (after omitting item 13) and PE= 0,84. Rothmann and Malan (2003) found cronbach alpha coefficients as follows: Ex= 0,89; Cy= 0,76 and PE= 0, 85, while Rothmann, Jackson and Kruger (2003) found lower alphas for Cy= 0,72 (after omitting item 13) and PE = 0, 69. Storm and Rothmann (2003) found Cronbach alphas of Ex = 0,88; Cy = 0,78 and PE = 0,79 in a sample of 2396 police officers in South Africa. Coetzer (2004) found Cronbach alpha coefficients of: Ex = 0,86; Cy = 0,80 and PE= 0,76 among employees in an insurance company in South Africa. Campell and Rothmann (2004) conducted a psychometric analysis of the MBI-GS in a customer service environment in South Africa, and on the basis of the existing research results on the MBI-GS in South Africa, came to the conclusion that considering the existing evidence, one can expect the MBI-GS to be sufficiently internally consistent when used in South Africa.

The factorial validity of all three of the versions of the MBI (including the MBI-GS [Leiter & Schaufeli, 1996]); MBI-ES (Byrne, 1994) and the MBI-HSS (Gold, Bachelor & Michael, 1989) has been confirmed by a number of recent research studies, using advanced statistical techniques; for example, confirmatory factor analysis using linear structural equations modelling. These studies show convincingly that the assumed three-dimensional structure fits better with the data than a one-dimensional structure. In other words, BO as assessed with the MBI, should be treated as a multidimensional construct.

As expected, the three dimensions are interrelated (Schaufeli & Enzman, 1998). Based on nearly 50 studies, Lee and Ashforth (1996) computed correlations between the MBI-HSS/ES subdimensions. Emotional exhaustion (parallel to Ex) and De (parallel to Cy) are strongly related (r=0,52), whereas personal
accomplishment (parallel to RPE) is moderately related to emotional exhaustion (parallel to Ex) \((r=-0.33)\) and to depersonalisation (parallel to Cy) \((r=0.36)\). For the MBI-GS, a slightly different pattern emerged: Cy is not only highly related to Ex \((0.44<r<0.61)\), but also strongly related to RPE \((-0.38<r<-0.57)\) (Maslach et al., 1996).

5.3.2.6 Rationale for using the MBI

The MBI is almost universally used as the instrument of choice to assess BO (Schaufeli & Enzman, 1998). Of 498 publications in which one of the three most prominent BO instruments was used, 93% referred to the MBI, 5% to the MB (BO measure) and 2% to the SBS (staff BO scale), according to Schaufeli and Enzman (1998).

The Maslach BO inventory was consequently chosen to measure BO in the sample of female academics. It was chosen for its (1) conceptual congruence to the definition of BO that will be used in the literature study, and its (2) acceptable psychometric qualities provided in the literature (Cilliers, 2002).

Since the subjects in this research project were only defined as “female academics”, the respondents included managers (academic section heads and heads of academic departments). It was thus decided to use the MBI-GS, because this survey can be used in any occupational context (Schaufeli & Enzman, 1989). Various studies have found the MBI-GS to be an acceptable instrument to use in the South African context.

5.3.3 The Utrecht work engagement scale (UWES)

The UWES was used to measure work engagement (WE).
5.3.3.1 Historical development of the UWES

Schaufeli et al. (2002) disagree with Maslach and Leiter (1997), regarding the measurement of WE, who argued that it is adequately measured by the opposite profile of MBI scores. According to Schaufeli et al. (2002a), it is impossible to study the relationship between the two constructs empirically by using the MBI for measuring WE, since both are considered to be opposite poles of a continuum that is covered by one single instrument (the MBI). Although they agree that WE is the positive antipole of BO, they acknowledge that the measurement and the structures of both concepts differ.

Originally, the UWES included 24 items of which the Vi-items (9) and the De-items (8) for a large part consisted of positively rephrased MBI-items, for example: “When I get up in the morning, I feel like going to work” (Vi) versus “I feel tired when I get up in the morning and have to face another day on the job” (Ex). These reformulated MBI-items were supplemented by original Vi and De items, as well as with new Ab items to constitute the UWES-24. After psychometric evaluation, seven items appeared to be unsound and were therefore eliminated so that 17 items remained (Schaufeli & Bakker, 2003).

The 17-item version of the UWES was used in this study.

5.3.3.2 Description of the UWES

The UWES was used to measure the levels of WE in the target population. The UWES consists of 17 items and is scored on a seven-point frequency rating scale, ranging from 0 (never) to 6 (always) (Redelinguys, 2003; Sieberhagen & Rothmann, 2004).

WE is a concept that includes three dimensions, namely vigour (Vi), dedication (De) and absorption (Ab).
a  **Vigour**

Vi is assessed by six items that refer to high levels of energy and resilience, the willingness to invest effort, not being easily fatigued and persistence in the face of difficulties (Schaufeli & Bakker, 2003).

b  **Dedication**

De is assessed by five items that refer to deriving a sense of significance from one's work, feeling enthusiastic and proud of one's job, and feeling inspired and challenged by it (Schaufeli & Bakker, 2003).

c  **Absorption**

Ab is measured by six items that refer to being totally and happily immersed in one's work and having difficulties detaching oneself from it so that time passes quickly and one forgets everything else (Schaufeli & Bakker, 2003).

5.3.3.3  Administration and scoring of the UWES

The UWES takes about 10 minutes to complete and full instructions are provided to the respondents. The testing session should be characterised by respondent confidentiality and avoidance of sensation to engagement. It can be conducted out individually or in a group session in which privacy is ensured.

Each of the three dimensions identified in the definition by Schaufeli (1998), is measured, namely:

a  **Vigour**

Vi is measured by items 1, 4, 8, 12, 15 and 17.
b  

Dedication

De is measured by items 2, 5, 7, 10 and 13.

c  

Absorption

Ab is measured by items 3, 6, 9, 11, 14 and 16.

None of the items are reverse scored. Separate values are calculated for each dimension, as well as an overall score for "WE" (all three dimensions are added and an overall score calculated).

5.3.3.4  

Interpretation of the UWES

A high score is an indication of a person experiencing WE.

Workers who score high on Vi usually have a lot of energy, zest and stamina when working, whereas those who score low on Vi have less energy, zest and stamina as far as their work is concerned (Schaufeli & Bakker, 2003).

Respondents that score high on De strongly identify with their work because it is experienced as meaningful, inspiring and challenging. They feel enthusiastic and proud of their work.

Respondents with a low score do not identify with their work because they do not experience it to be meaningful, inspiring or challenging; moreover, they feel neither enthusiastic nor proud of their work.
5.3.3.5 Psychometric properties of the UWES

Schaufeli and Bakker (2003) conclude that considering all the available data to date (collected all over the world), the UWES can be regarded a valid and reliable indicator of WE. According to Schaufeli et al. (2002), the Cronbach alpha coefficients of the UWES vary between 0,68 and 0,91, internationally. The 17-item version of the UWES produced the following Cronbach alpha coefficients (see table 5.9) for the entire database (N= 2 313), used by Schaufeli and Bakker (2003), in their study conducted in the Netherlands and Flanders.

Table 5.2

*Cronbach alphas of the UWES* (Schaufeli & Bakker, 2004)

<table>
<thead>
<tr>
<th></th>
<th>UWES-17 (N= 2 313)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Vi</td>
<td>0,83</td>
</tr>
<tr>
<td>De</td>
<td>0,92</td>
</tr>
<tr>
<td>Ab</td>
<td>0,82</td>
</tr>
</tbody>
</table>

The UWES also produces acceptable reliability and validity with various South African samples (Naude, 2003). Regarding the psychometric properties of the UWES, research in which the instrument was used with a South African sample of 2 396 members of the South African Police Service, show that the three subdimensions have sufficient internal consistencies. The alpha coefficients for Vi = 0,78; for De = 0,89 and for Ab = 0,78 (Storm, 2002; Storm & Rothmann, 2003) were calculated. Coetzer (2004) found Cronbach alpha coefficients of: Vi = 0,80; De = 0,87 and Ab = 0,69 among employees in an insurance company in South Africa. According to the guideline of 0,70 (Nunnally & Bernstein, 1994) the cronbach alpha coefficients of the UWES are thus acceptable.
Confirmatory factor analysis shows that the hypothesised three-factor structure of the UWES is superior to the one-factor model and fits well with the data of various samples from the Netherlands, Spain and Portugal (Salanova et al., 2001; Schaufeli et al., 2002b; Schaufeli et al., 2002b; Schaufeli et al., 2003).

There are exceptions, however, using explorative factor analysis, Sonnentag (2003) did not find a clear three-factor structure and decided to use the total score on the UWES as a measure for WE.

Two South African studies reported on the internal consistency, factorial validity, structural equivalence and bias of the UWES (Jackson, 2004; Naudé, 2003; Storm & Rothmann, 2003). Storm and Rothmann (2003) tested the full – hypothesised three-factor model consisting of all 17 items. They found the correlation between the subdimensions to be high. Vi and De showed the highest correlation of 0.97, followed by Vi and Ab with a correlation of 0.96.

The Tucker’s phi-coefficient for the four race groups in South Africa, on the three-factor structure, were all higher than the cut-off point of 0.95. It was therefore deduced that the three factors of the UWES were equivalent for the four race groups (Jackson, 2004).

5.3.3.6 Rationale for using the UWES

The UWES has been used and assessed extensively internationally. The database consists of 10 000 respondents in the Netherlands and Belgium and 12 000 respondents from nine different countries (Schaufeli & Bakker, 2003). On the basis of results, Schaufeli and Bakker (2003) conclude that the psychometric properties of the UWES are acceptable:

- The three subdimensions are internally consistent and stable across time.
• The three-factor structure is confirmed, and seems to be invariant across samples from different countries.

Research conducted in South Africa yielded acceptable Cronbach alpha coefficients.

It is thus believed that the instrument can be used successfully in South African tertiary institutions to measure the degree of WE experienced by female academics.

5.3.4 The SOC questionnaire (SOC)

The SOC questionnaire was used to measure sense of coherence (SOC).

5.3.4.1 Historical development of the SOC questionnaire

The SOC questionnaire was originally called the “Orientation to life questionnaire” (OLQ). Antonovsky (1987) developed it as a measuring instrument to measure the strength of the construct SOC because he initially conceptualised the construct (Antonovsky, 1979). Antonovsky (1987) developed the OLQ in order to measure SOC to test the core hypothesis that SOC is casually related to health status. For the pilot study, people who had undergone severe trauma, but were functioning remarkably well, were interviewed. The question put to the respondents by Antonovsky was simply: “Tell about your life”. This information was consequently used by Antonovsky (1987) to formulate the three components of SOC and to phrase the items in the questionnaire (Basson, 2002).

The questionnaire was repeatedly tested and refined by disregarding some of the items and rewording or formulating new items in other cases.
5.3.4.2 Description of the SOC questionnaire

The SOC is based on a salutogenic rather than a pathogenic approach to life and measures the extent to which the individual perceives the world around him or her as predictable, manageable and meaningful (Antonovsky, 1979; 1987; 1993; Strümpfer, 1990; Van Jaarsveld, 2005).

The SOC measures an individual's personality disposition and global orientation regarding the handling of stimuli in terms of three components, namely comprehensibility (Co), manageability (Ma) and meaningfulness (Me). The three factors can be described as follows:

\( a \) Comprehensibility

Antonovsky (1987; 1993) confirms that this dimension is indeed the well-defined, explicit core of the original definition. The stimuli deriving from one’s internal and external environments in the course of living are structured, predictable and explicable. This is called Co, where the individual makes sense of the stimuli in the environment (Antonovsky, 1987; 1993).

Basson (2002) explains that Co indicates whether a person perceives stimuli from the internal and external world as information that is ordered, consistent, structured and clear. A person high on Co expects future stimuli to be predictable, or at least orderable and explicable (Basson, 2002; De Wet, 1998; Sandell et al., 1998). Stimuli are thus experienced as comprehensible and as events that make sense on a cognitive level (Coetzez & Rothmann, 2004; Eriksson & Lindström, 2005).

\( b \) Manageability

The belief that resources are available to one to meet the demands posed by these stimuli is called Ma, where the individual is able to cope with the demands
of the environment. An individual with a strong sense of Ma would therefore feel able to cope with difficult situations (Cloete & Stuart, 2003). This refers specifically to the amount of energy, skill and ability a person has in order to manage the demands of everyday life (Viviers, 1996) – hence the involvement of an instrumental or behavioural element (Eriksson & Lindström, 2005).

\[c] \textit{Meaningfulness}

The belief that these demands are challenges worthy of investment and engagement is called Me, where the individual is able to emotionally identify and commit effort in handling these demands (Antonovsky, 1987). Me can be described as an individual’s emotional assessment of situations as coherent and worthy of investment (Cloete & Stuart, 2003). It refers to the extent to which the individual feels that life also makes sense at an emotional, rather than a cognitive level (Coetzee & Rothmann, 2004). This dimension represents the motivational element of SOC (Basson, 2002; Eriksson & Lindström, 2005).

5.3.4.3 Administration and scoring of the SOC questionnaire

The SOC consists of 29 Likert-type self-rating items. The three different dimensions of SOC are each measured independently, namely Co (11 items), Ma (10 items) and Me (8 items) (Antonovsky, 1987; Dhaniram & Cilliers, 2003).

A seven-point semantic differential scale is used, with two anchoring phrases. Each scale item includes four facets that describe a stimulus and a fifth, an SOC facet, which expresses one of the construct’s components (Antonovsky, 1987). The SOC can be administered individually or in groups. There is no time limit in which the respondent has to complete the questionnaire. Antonovsky (1987) argued that although the three subdimensions are closely related, it is possible to conceive situations in which a person’s experiences will lead him or her to be high on one component and low on another. Hence, a score for each subdimension is
calculated. The scores for Co, Ma and Me are also added together, to compute a total, overall score for the construct SOC, according to Antonovsky's (1987) guidelines.

The values for the following items should be reversed scored:

1, 4, 5, 6, 7, 11, 13, 14, 16, 20, 23, 25, 27

a  Comprehensibility

To calculate the value for Co, the following items should be added:

1+3+5+10+12+15+17+19+21+24+26=C

b  Manageability

To calculate a value for Ma, the following items should be added:

2+6+9+13+18+20+23+25+27+29=ME

c  Meaningfulness

To calculate a value for Me, the following items should be added:

4+7+8+11+14+16+22+28=MA

d  Total SOC score

To calculate a value for the total SOC, all the above scores (a total of 29) should thus be added together, namely:
C+ME+MA = SOC

5.3.4.4 Interpretation of the questionnaire

A high score is an indication of a person with a strong SOC. The highest possible score that a respondent can obtain is 203. Antonovsky (1987) explains that a strong SOC is not a particular coping style, and that the stressors that life poses are many and varied. Adopting one pattern of coping consistently means failing to respond to the nature of the stressor and hence to decrease the chances of successful coping. A person with a strong SOC selects the particular coping strategy that seems most appropriate to deal with the stressor he or she is being confronted with (Antonovsky, 1987; Steyn, Rothmann & Mostert, 2004). Hence availability of a wide repertoire of coping strategies and flexibility in choice at any given time are crucial (Feldt, 1997).

A strong SOC enables a person to mobilise effective coping resources in the face of tension, predisposing one to move towards the health side of the health/disease continuum. A weak SOC is likely to result in poor tension management and an inability to mobilise adequate resources, culminating in health breakdown (Antonovsky, 1987; Levert et al., 2000).

Strümpfer (1990) argues that a strong SOC may have an impact on the way a person performs his or her job, in the following ways:

- The person makes cognitive sense of the workplace and perceives it as clear, ordered, structured, consistent and predictable.
- The person perceives the challenges of the workplace as bearable.
- The person makes emotional and motivational sense of work demands and welcomes these demands as challenges worthy of engaging in.

According to Van Jaarsveld (2005), an individual with a strong SOC tends to strive towards productive performance, recognition, reward and promotion.
Respondents with a low score on the three components of the SOC are expected to see the world as less ordered and predictable; tasks appear less manageable, and their jobs largely seem meaningless to these respondents.

5.3.4.5 Psychometric properties of the SOC questionnaire

Antonovsky (1987) reports that the three subdimensions show high correlations in the initial experimental design in Israel. He concludes that they are generally interwoven, but not necessarily the same.

The SOC questionnaire is characterised by a consistently high level of Cronbach’s alpha as indicated in 26 studies, ranging from 0.84 to 0.93 (Antonovsky, 1987). Antonovsky (1993) reported alpha Cronbach scores of 0.82 to 0.95 in 26 different studies. Rothmann (2000b) reported an alpha coefficient of 0.89 for the SOC. The entire spectrum of focus on the test-retest reliability produced a reliability coefficient between 0.41 and 0.97. As an alpha coefficient above 0.70, is acceptable according to Nunnally and Bernstein (1994), the alpha Cronbach coefficient of the SOC can be accepted. The SOC can thus be judged as a reliable instrument.

Antonovsky (1993) found a test-retest reliability of between 0.52 and 0.56. In the majority of studies that researched the criterion validity, statistically meaningful correlations were found (Antonovsky, 1993).

5.3.4.6 Rationale for using the SOC questionnaire

The SOC has been proven to be a reliable, valid and cross-culturally acceptable instrument, measuring how people manage stressful situations and stay well. The SOC has been used in at least 33 languages in 32 countries (Eriksson & Lindström, 2005). The high levels of reliability and validity reported are a strong motivating factor in the decision to use the SOC.
5.4 DATA COLLECTION

The data collection, design and methodology provide the reader with insight into “how” data are collected and subsequently analysed (Watkins, 2006).

Permission to collect the data, was obtained from the Directorate of Human Resources at Unisa. At TUT, permission was obtained from the Faculty Research and Innovation Committee, as well as the Ethical Committee of the institution.

All the female academics in the above institutions received an introductory letter, as well as the compiled test battery (consisting of the various questionnaires), via the internal electronic communication network, inviting them to participate in the research. The entire population was computer literate and had access to the institutions’ electronic communication networks. The typical academic uses these networks daily and it is a fast and effective way of reaching all the individuals concerned.

The letters of permission were consequently submitted to the respective computer network administrators. The test battery, together with the covering letter was mailed to the sample group via the electronic network in each institution. The first instruments were sent out during October 2006. The test battery was sent to all the female academics permanently employed at the two institutions. To improve the response rate, the instruments were sent out for a second time during November 2006.

The test battery was returned to the researcher electronically and then printed. This produced a hardcopy of each of the respondent’s questionnaires.

A small number of the participants chose to print the instrument and complete it in writing, after which it was mailed via the internal posting system to the
researcher (at TUT). At Unisa, two of the respondents chose to mail their questionnaires to the study leader of this project (identified in the covering letter of the instrument as a Professor in the Industrial Psychology Department of Unisa). It is possible that these respondents might have been concerned about the confidentiality of the electronic network. All possible precautions were however taken to ensure the respondent’s confidentiality, while maintaining reliability and validity, in accordance with the International Code for Marketing and Social Research (SAMRA, 2006). These precautions included:

- The four measuring instruments were placed in an electronic “booklet”, forming the test battery.
- An effort was made to ensure that the entire population received the questionnaire, consistent with the purpose of the research.
- A clear statement of the purpose of the research, the population used in the questionnaire and the research approach adopted was published.
- An effort was made to minimise inconvenience to individuals who did not wish to participate in the study, by clearly stating the purpose in the subject heading.

5.5 DATA ANALYSIS

The collected data were analysed in order to make the interpretation of results possible.

5.5.1 Introduction

The following statistical techniques were applied using the Statistical Package for the Social Sciences (SPSS) computer program for Windows version 14.0 (2001). Prior to commencement of the analysis, the data from the MBI, UWES, and SOC
were transformed to aggregate scores using procedures to control for missing values.

Descriptive statistics were used to analyse the data. Means and standard deviations were used to describe and compare results. The mean is an indication of the measure of central tendency (Huysamen, 1993). The sample demographics were obtained using analysis of the frequencies of respondents in each of the demographic categories.

5.5.2 Reliability

To ascertain the reliability of the MBI, UWES, and SOC scales, estimates of internal consistency for the overall scales and the corresponding subdimensions were obtained using Cronbach’s alpha. This index is indicative of the extent to which all the items in the questionnaire measure the same characteristics (Huysamen, 1993). According to Nunnally and Bernstein (1994), a score greater as 0,70 is acceptable. Inter-item correlation coefficients are used to determine whether the internal consistencies of the constructs are acceptable.

5.5.3 Validity

The validity of the results was analysed by performing factor analysis and confirmatory factor analysis. These techniques are discussed in the sections below.

5.5.3.1 Factor analysis

To examine the validity of the MBI, UWES, and SOC scales, an exploratory factor analysis method was used to test each of the three scales individually to confirm the validity of the factor structure of each of the scales in the sample population. To minimise error, the principal axis factor analysis with a direct
oblimin rotation and the Kaiser normalisation were considered to be the best techniques to examine the factor structure of the three scales. Catell’s scree test (Pallant, 2001) was used to study the slope of the plotted eigenvalues in order to determine the factor solution. The scree test shows a sharp drop, levelling off to a flat tail as each successive component’s eigenvalue explains less and less of the variances. The Catell rule is to pick all factors, prior to where the plot levels off, or changes (Pallant, 2001).

Factor rotation is used to present the pattern of loadings in a manner that is easier to interpret. The direct oblimin rotation is an oblique rotation used to maximise the variance of the loadings of a factor on all the variables in a factor matrix, thereby minimising the number of variables that have high loadings on any one given factor. Each factor will tend to have either large or small loadings of particular variables on it (Pallant, 2001). The groups of items that loaded highest on each factor were compared to the items of the three sub-dimensions to determine the validity of the factor structures of the three questionnaires.

5.5.3.2 Confirmatory factor analysis

Confirmatory factor analysis (CFA) seeks to determine if the number of factors and the loadings of measured (indicator) variables on them, conform to what is expected on the basis of pre-established theory.

http://www2.chass.ncsu.edu/garson/ pa765/factor.htm.

Since the sentence definition above indicates that pre-es:ablshed theory is required, indicator variables are selected on the basis of this prior theory, and factor analysis is used to see if they load as predicted on the expected number of factors. The researcher's á priori assumption is that each factor (the number and labels of which may be specified á priori) is associated with a specified subset of indicator variables. A minimum requirement of confirmatory factor analysis is that
one should hypothesise beforehand the number of factors in the model. However, as a rule, also the researcher will also posit expectations about which variables will load on which factors (Kim & Mueller, 1978, p. 55).

Confirmatory factor analysis refers to the analysis of alternative measurement (factor) models using a structural equation modelling package such as AMOS or LISREL. [http://www2.chass.ncsu.edu/garson/pa765/factor.htm](http://www2.chass.ncsu.edu/garson/pa765/factor.htm)

Using a SEM analysis program, one can compare the estimated matrices representing the relationships between variables in the model to the actual matrices. Formal psychometric tests and fit indices have been developed for this purpose. For each measure of fit, rules of thumb have evolved about what represents a good fit between model and data. [http://en.wikipedia.org/wiki/Structural_equation_modeling](http://en.wikipedia.org/wiki/Structural_equation_modeling)

Estimators of goodness-of-fit measurements include the following psychometric techniques:

\( a \) \textit{Root mean square error of approximation (RMSEA)}

This measure is based on the noncentrality parameter. Its formula can be shown to equal: \( \sqrt{ \frac{(\chi^2/df - 1)}{(N - 1)} } \), where \( N \) represents the sample size and \( df \) the degrees of freedom of the model. (If \( c^2 \) is less than \( df \), then RMSEA is set to zero.) Good models have an RMSEA of 0,05 or less. Models whose RMSEA is 0,10 or more have a poor fit.

\( b \) \textit{Hoelter index}

The index should only be computed if the chi-square is statistically significant. Its formula is
\[ \frac{(N - 1) \chi^2(\text{crit})}{\chi^2 + 1} \]

where \( N \) is the sample size, \( \chi^2 \) is the chi-square for the model and \( \chi^2(\text{crit}) \) is the critical value for the chi square. If the critical value is unknown, the following approximation can be used:

\[ \frac{[1.645 + \sqrt{(2df - 1)}]^2}{2\chi^2/(N - 1) + 1} \]

where \( df \) is the degrees of freedom of the model. For both of these formulas, one rounds down to the nearest integer value. The index states the sample size at which chi-square would not be significant, that is, how small one's sample size would have to be for the result to be no longer significant. Hoelter recommends values of at least 200. Values of less than 75 indicate an extremely poor model fit.

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\[ c \quad \text{Bentler Bonett index or normed fit index (NFI)} \]

One must define the null model as a model in which all of the correlations or covariances are zero. The null model is referred to as the "independence model" in

\[ \frac{\chi^2(\text{null model}) - \chi^2(\text{proposed model})}{\chi^2(\text{null model})} \]
A value between 0.90 and 0.95 is acceptable, and above 0.95, good. A disadvantage of this measure is that it cannot be smaller if more parameters are added to the model. Thus, the more parameters added to the model, the larger the index will be. It is for this reason that this measure is no longer used that much. A better option is one of the next two.

\[ d \quad \text{Tucker Lewis index or non-normed fit index (NNFI)} \]

A problem with the Bentler-Bonett index is that there is no penalty for adding parameters. The Tucker-Lewis index does have such a penalty. Let $c^2/\text{df}$ be the ratio of chi-square to its degrees of freedom

\[
\frac{c^2/\text{df}(\text{null model}) - c^2/\text{df}(\text{proposed model})}{c^2/\text{df}(\text{null model}) - 1}
\]

If the index is greater than one, it is set at one. It is interpreted as the Bentler-Bonett index. Note that for a given model, a lower chi-square to df ratio (as long as it is not less than one) implies a better fitting model.

5.5.4 Relationships

Babbie (2008) explains that a correlation refers to an empirical relationship between two or more variables, such that (1) changes in one are associated with changes in the other, or (2) that particular attributes of one variable are associated with particular attributes of the other. The correlation analysis investigated the relationship between the total scores for BO, SOC and WE (red), as well as the relationships between the various subdimensions of the constructs.
The hypothesis that the total scales and subdimensions of the MBI, UWES and SOC would correlate in certain predicted directions was assessed using Pearson’s product-moment correlation coefficient (r). A Pearson’s coefficient indicates the strength and direction of the correlations between item scores on the various scales.

The relationship between variables can be positive (when a decreased measurement of one variable leads to a decrease in the other variable) or negative (when a decreased measurement in one variable leads to an increase in the other (Howell, 1995). Product-moment correlation coefficients (r) vary between -1,00 to +1,00. The closer the value of a correlation coefficient (r) to -1,00 or +1,00, the more accurate the prediction is that one variable is related to another (Howell, 1995).

Previous research has explored these relationships to a certain extent. An overview of these findings was provided in section 4.11, in order to facilitate the interpretation of the statistical results calculated for this study.

Steyn (1999) highlights the importance for researchers to interpret results according to effect sizes and practical significance, rather than purely on statistical significance. Statistical significance tests and r-values are used to determine if results are significant. Small correlation coefficient values (r<0,05) are frequently used as sufficient evidence that results are statistically significant. However this can be misleading, because statistically significant results are often not practically important.

According to Cohen (1988), the following are cut-off points for the practical significance of the correlation coefficient between variables:

\[
\begin{align*}
  r = 0.10 & \quad \text{small effect} \\
  r = 0.30 & \quad \text{medium effect}
\end{align*}
\]
In this study, r-values larger than 0.30 (medium effect) were considered to be practically significant. Values greater than 0.5 are considered to indicate a large effect and values exceeding 0.7 are considered to have an extremely strong effect.

5.5.5 Regression

In order to examine the contribution of the three WE subdimensions and the three SOC subdimensions as predictors of BO, a stepwise multiple regression procedure was used. In a stepwise regression, the order in which the variable is entered into the model is based on a statistical decision and not on theory. The first variable entered accounts for the most variance in the dependent measure, while the remaining variables entered added the most to the ability of the regression equation to account for the variance in the dependent variable (Pallant, 2001).

In order to protect the statistical integrity of the study, it was necessary to limit the number of regression analyses performed. If too many statistical calculations are performed on the same set of raw data, the results are weakened and become less reliable. On the basis of the literature study and evidence collected in previous studies on the relationship between BO and SOC and the effect of SOC on BO, a judgement decision was made to perform a regression analysis on BO.

In order to determine whether WE and SOC are able to predict BO, a stepwise multiple regression procedure was used. Stepwise regression analysis was used with the total BO score and the three subdimensions of the MBI defined as the dependent variables, and the three subdimensions of the UWES as well as the three subdimensions of the SOC defined as the independent variables. Stepwise regression was preferred because the procedure allows the construction of an
optimal yet parsimonious model by only entering variables that contribute significantly to the predictive ability of the resultant model.

The stepwise regression procedure was decided to be the most suitable regression procedure for the study because it is an automatic procedure for statistical model selection in cases where there are a large number of potential explanatory variables, and no underlying theory on which to base the model selection. Hence the variables that made insignificant contributions to the model were therefore eliminated. Stepwise regression develops a model made up of the independent variables that are the best predictors of the dependent variable.

5.5.6 The effect of different biographical variables

Different techniques were used to determine the effect of the different biographical variables on the BO, WE and SOC scores of this target group of female academics.

Field (2005) acknowledges that many measures of effect sizes have been proposed, the most common of which is the Pearson’s correlation coefficient (r). Although (r) is traditionally used as a measure of the relationship between two variables, Field (2005) believes that it is also a versatile measure of the strength of an experimental effect, although he concedes that many researchers find it difficult to grasp how the humble correlation coefficient can be used in this way. The American Psychological Association shares this conviction and recommends that the utility of effect sizes is such, that the results should now be included in all published work (Field, 2005). In line with this recommendation, Pearson’s correlation coefficients were used to investigate the effect of age, as well as number of years employed on BO, WE and SOC scores. This was preferable because both variables were a simple quantitatative measure in terms of the unit “number of years”. In the biographical questionnaire, the respondents were simply asked to type the applicable number of years, for example “12” and not to
allocate a “grouping”, say “11 to 15”. Since this was not limited to a fairly vague grouping, the results are thus more accurate and precise.

To explore whether there were any significant differences in BO, WE and SOC between the various population groups, the data were analysed using an independent samples t-test. In order to assess the differences for marital status and level of education, a one-way analysis of variance (ANOVA) was used. The post-hoc Tukey test was used to control the likelihood of a type 1 error and to indicate where the specific areas of difference lie.

It is important to note that these comparisons were limited to the guidelines set by the ethical committee of TUT. Unisa had no specific rules in this regard.

5.6 BIOGRAPHICAL VARIABLES

This section presents the descriptive information on the biographical variables of the sample. A total of 187 respondents completed the questionnaire. The profile of a typical employee in the sample can be described as being female because only females were asked to participate in the project—hence a gender chart is not presented.

The other biographical variables presented were as follows:

5.6.1 Age

Table 5.3 indicates the average age of the respondents. They ranged in age from 21 to 64 years with a mean age of 42.35 and a standard deviation of 10.42. This information indicates that the majority of the respondents were between the ages of 32 and 52 years old.
Table 5.3

Descriptive information on the age of the sample group (n=187)

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>21</td>
<td>64</td>
<td>42.35</td>
<td>10.421</td>
</tr>
</tbody>
</table>

5.6.2 Years of experience

In table 5.4 the respondent with the least experience had only one year of experience, whereas the respondent with the most years experience had 37 years of experience as an academic. The mean years work experience was 9.5 years.

Table 5.4

Years of work experience of the sample (n=187)

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>St. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>1</td>
<td>37</td>
<td>9.5</td>
<td>12.02</td>
</tr>
</tbody>
</table>

5.6.3 Population group

In terms of ethnic group to which respondents belong, as illustrated in figure 5.1, 88% (n=165) of the respondents were white, 10% (n=19) were black, one person was Asian (0.6%) and two people (1.1%) were recorded as belonging to the “brown” population group. The majority of the respondents thus represented the white and the black population of South Africa. Descriptive statistics are provided in table 5.5.
Figure 5.1
Population group of respondents \((n = 187)\)

The sample group represented the different ethnic groups in South Africa in the following proportions:

Table 5.5
Population group representation of the sample

<table>
<thead>
<tr>
<th>Population group</th>
<th>Frequencies</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>1</td>
<td>0.6%</td>
</tr>
<tr>
<td>Black</td>
<td>19</td>
<td>10%</td>
</tr>
<tr>
<td>Brown</td>
<td>2</td>
<td>1.1%</td>
</tr>
<tr>
<td>White</td>
<td>165</td>
<td>88%</td>
</tr>
<tr>
<td>Total</td>
<td>N=187</td>
<td>100%</td>
</tr>
</tbody>
</table>
5.6.4 Marital status

The marital status of respondents is presented in figure 5.2. The majority of respondents were married (65%) or single (19%). A significant percentage was divorced (9%). The percentage of respondents who fell into the “living together”, “separated” and “widowed” categories, were significantly smaller than the rest, as illustrated in figure 5.2. Descriptive statistics are provided in table 5.6.

Figure 5.2
Marital status of respondents (n = 187)
Table 5.6

Descriptive statistics on the marital status of the sample (n=187)

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequencies</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>36</td>
<td>19%</td>
</tr>
<tr>
<td>Married</td>
<td>122</td>
<td>65%</td>
</tr>
<tr>
<td>Living together</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>Divorced</td>
<td>17</td>
<td>9%</td>
</tr>
<tr>
<td>Separated</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Widowed</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>Total:</td>
<td>N=187</td>
<td>100%</td>
</tr>
</tbody>
</table>

5.6.5 Highest completed qualification

The respondents consisted of four groups based on their level of education: group 1 consisted of respondents with a national diploma or bachelor's degree (M+3); group 2 consisted of respondents with a B Tech degree or B honours degree (M+4), group 3 consisted of respondents with a Master's degree (M+5); and group 4 those in possession of a doctoral degree. Respondents mostly had either a master's degree (37%) or doctoral degree (30%). A somewhat smaller percentage (27%) had a B Tech or Honours degree. Since only 6% had only a national diploma, it could be concluded that the sample group was on average a highly qualified group of female academics. These findings are graphically represented in figure 5.3 and descriptive statistics are provided in table 5.7.
Figure 5.3
Highest qualification (n = 187)

Table 5.7
Highest qualification of the sample (n = 187)

<table>
<thead>
<tr>
<th>Highest qualification</th>
<th>Frequencies</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Diploma / B Degree (M+3)</td>
<td>11</td>
<td>6%</td>
</tr>
<tr>
<td>B Tech Degree / B Honours Degree (M+4)</td>
<td>51</td>
<td>27%</td>
</tr>
<tr>
<td>Masters Degree (M+5)</td>
<td>69</td>
<td>37%</td>
</tr>
<tr>
<td>Doctoral Degree (M+6)</td>
<td>56</td>
<td>30%</td>
</tr>
<tr>
<td>Total:</td>
<td>N=187</td>
<td>100%</td>
</tr>
</tbody>
</table>
5.6.6 Current job title

The sample represented a broad range of different jobs in the academic sphere, represented in figure 5.4. The descriptive statistics are provided in table 5.8. The majority of respondents were lecturers or researchers (41%), senior lecturers (23%) or junior lecturers, junior researchers or research assistants (12%).

Figure 5.4
Descriptive information on the current job title of the respondents
Table 5.8

Current job title of the sample

<table>
<thead>
<tr>
<th>Current job title</th>
<th>Frequencies</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior lecturer/ researcher/ research assistant</td>
<td>22</td>
<td>12%</td>
</tr>
<tr>
<td>Lecturer</td>
<td>76</td>
<td>41%</td>
</tr>
<tr>
<td>Senior lecturer</td>
<td>43</td>
<td>23%</td>
</tr>
<tr>
<td>Principal lecturer</td>
<td>5</td>
<td>3%</td>
</tr>
<tr>
<td>Associate professor</td>
<td>6</td>
<td>3%</td>
</tr>
<tr>
<td>Professor</td>
<td>10</td>
<td>6%</td>
</tr>
<tr>
<td>Academic Section Head</td>
<td>8</td>
<td>4%</td>
</tr>
<tr>
<td>Head of an Academic Department</td>
<td>11</td>
<td>6%</td>
</tr>
<tr>
<td>Dean of an Academic Faculty</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Education Consultant</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Total:</td>
<td>N=187</td>
<td>100%</td>
</tr>
</tbody>
</table>

5.6.7 Campus of employment

The participants were employed on a number of different campuses, including a geographical area from Gauteng to Mpumalanga and Limpopo (figure 5.5). The majority of respondents were employed at Unisa in Pretoria (greater Tshwane) (55%). The respondents from TUT were dispersed geographically, but almost half (22% of the 45% respondents representing TUT) were employed at the Pretoria West Campus of TUT. Descriptive statistics are provided in table 5.9.
Table 5.9

Campus representation of the sample (n=187)

<table>
<thead>
<tr>
<th>Campus employment</th>
<th>Frequencies</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unisa (total institution)</td>
<td>103</td>
<td>55.1%</td>
</tr>
<tr>
<td>TUT (total institution)</td>
<td>84</td>
<td>44.9%</td>
</tr>
<tr>
<td>Total</td>
<td>N=187</td>
<td>100%</td>
</tr>
</tbody>
</table>

In summary, the profile of the group can be described as follows:

Most of the respondents were from the white or black population group. The percentages representing Unisa and TUT were fairly similar, but with a slightly higher representation from Unisa. The average age was 42 years, with a standard deviation of 10. In terms of marital status, the married group was the largest (65%), but a significant proportion of the sample group was single (19%).
Most of the respondents had at least an M+4 qualification, with 27% being in possession of a masters degree (M+5). Lecturers and senior lecturers represented the bulk of the sample in terms of job title. The average years of work experience as an academic were 9.5 years.

5.7 HYPOTHESIS FORMULATION

The above discussion leads to the following hypothesis formulation:

H0: There is a significant relationship between BO (as represented by the constructs Ex, Cy and RPE), WE (as represented by the constructs Vi, De and Ab) and SOC (as represented by the constructs Co, Ma and Me) among female academic staff members at two tertiary institutions in South Africa.

H1: There is no significant relationship between BO (as represented by the constructs Ex, Cy and PE), WE (as represented by the constructs Vi, De and Ab) and SOC (as represented by the constructs Co, Ma and Me) among female academic staff members at two tertiary institutions in South Africa.

5.8 CHAPTER SUMMARY

This chapter introduced the empirical phase of the research study. The population sample, the measuring battery, data collection and data analysis were explained. Sufficient evidence was provided from the existing literature to prove the applicability of the three measuring instruments in terms of the three constructs (BO, WE and SOC) to be measured in this study. In the concluding sections of the chapter, a hypothesis was formulated for the study. The results and the psychometric analysis will be presented in the next chapter.
CHAPTER 6

RESULTS

6.1 INTRODUCTION

This chapter reports the results of the study, arrived at through analysis of the data. The reliability and validity of the measures are reported beginning with the results of the Maslach burnout inventory (MBI), Utrecht work engagement scale (UWES), and finally, the sense of coherence questionnaire (SOC).

The results of group differences in burnout (BO), work engagement (WE) and sense of coherence (SOC) are reported specifically for the age, years of experience as an academic, population group, marital status and highest level of completed qualification.

The results of the hypotheses tested are reported after the analysis of the groups. The results of the analyses were used to examine the hypotheses that there is a statistically and practically significant relationship between BO, WE and SOC. The results of the Pearson’s product moment correlation, used to assess the relationship between the constructs are then reported.

This is followed by a discussion of the results of the multiple regression procedure used to determine the extent to which it is possible to predict BO from WE and SOC. The chapter concludes with an analysis of the biographical group differences on the BO, WE and SOC of the target group.
6.2 RELIABILITY

Estimates of the internal consistency for the total scores and subdimensions of the three questionnaires were obtained as Cronbach alphas.

6.2.1 Reliability of the MBI

The MBI was used to determine the levels of BO in the sample, as explained in chapter 5. The following calculations (set out in secs. 6.2.1.1 to 6.2.1.4) were performed on the data generated with this questionnaire:

6.2.1.1 Reporting of results

A Cronbach alpha for the total OB score was calculated. Cronbach's alpha values for each of the subdimensions, namely Ex, Cy and RPE, were also calculated to facilitate a deeper understanding of the manifestation of BO in the sample.

Table 6.1

*Scale reliabilities (Cronbach's alpha), means and standard deviations of the total scale and subdimensions of the MBI (n=187)*

<table>
<thead>
<tr>
<th>Scale</th>
<th>N of items</th>
<th>M</th>
<th>SD</th>
<th>Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total MBI</td>
<td>16</td>
<td>36,79</td>
<td>15,96</td>
<td>0,89</td>
</tr>
<tr>
<td>Ex</td>
<td>5</td>
<td>14,74</td>
<td>7,57</td>
<td>0,90</td>
</tr>
<tr>
<td>Cy</td>
<td>5</td>
<td>13,33</td>
<td>7,36</td>
<td>0,81</td>
</tr>
<tr>
<td>RPE</td>
<td>6</td>
<td>8,72</td>
<td>5,34</td>
<td>0,68</td>
</tr>
</tbody>
</table>
6.2.1.2 Analysis of results

A Cronbach alpha coefficient of 0.7 or more is considered to indicate a reliable scale (Nunally & Bernstein, 1994; Pallant, 2001).

The Cronbach alpha coefficient for the MBI scale at a total level was found to be 0.87 with a mean of 36.79 and a standard deviation of 15.93 (table 6.1). The Cronbach alpha coefficients for the subdimensions of the MBI were also satisfactory. The Cronbach alpha for the Ex and Cy scores were high, with the values at 0.90 and 0.81 respectively. RPE was slightly lower than the 0.7 cut-off point.

Although the RPE subdimension just missed the cut-off point of 0.70, it was extremely close, with a value of 0.68. A Cronbach alpha coefficient of 0.7 or more is considered to indicate a reliable scale (Pallant, 2001). In total, the reliability scores of the MBI were thus well within the range considered acceptable.

Regarding the interpretation of the mean scores for the MBI, the guidelines on the interpretation as established by Maslach and Leiter (1997), are provided in section. 5.3.2.4. When the values in table 6.1 are interpreted according to these guidelines, the respondents scored average for Ex, high on Cy and above average on RPE. The score for RPE is just below 9, which would be classified as a high score.

There is sufficient evidence to indicate that certain elements of BO studied, were indeed present in the target group of female academics.

6.2.1.3 Interpretation of results

Many South African studies measure “professional efficacy” when relevant studies are compared. In this study these questions were reversed scored to measure “Reduced Professional Efficacy (RPE)”, in line with Maslach and
Leiter's (1997) guidelines. This enabled the researcher to calculate a total score for BO.

In her research on a sample of pharmacists in South Africa, Basson (2002) reported Cronbach alpha coefficients varying from 0.67 to 0.89 for the MBI. These are similar to the values calculated for this study.

A number of comparisons between various South African and international studies were drawn. The results are presented in table 6.2 (Barkhuizen et al., 2004; Jackson, 2004; Sieberhagen & Rothmann, 2004). The reliability indicators (\(\infty\)) are only provided where available.
<table>
<thead>
<tr>
<th>Item</th>
<th>Mean score</th>
<th>Ex (E)</th>
<th>Cy (Cy)</th>
<th>RPE (PE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female academics (North West Province, SA)</td>
<td>8.72</td>
<td>0.68</td>
<td>0.76</td>
<td>29.07</td>
</tr>
<tr>
<td>Teachers (North West Province, SA)</td>
<td>13.33</td>
<td>0.81</td>
<td>5.74</td>
<td>10.49</td>
</tr>
<tr>
<td>Engineers/ scientists (Internat.)</td>
<td>14.74</td>
<td>0.90</td>
<td>14.86</td>
<td>27.79</td>
</tr>
<tr>
<td>Higher education sector (Internat.)</td>
<td>19.17</td>
<td>0.81</td>
<td>8.04</td>
<td>15.94</td>
</tr>
<tr>
<td>Police officers (Internat.)</td>
<td>17.55</td>
<td>Not calculated</td>
<td>12.48</td>
<td>15.94</td>
</tr>
<tr>
<td>Academy staff (SA)</td>
<td>13.19</td>
<td>Not calculated</td>
<td>9.94</td>
<td>18.62</td>
</tr>
<tr>
<td>Student leaders (SA)</td>
<td>12.97</td>
<td>Not calculated</td>
<td>7.24</td>
<td>18.62</td>
</tr>
<tr>
<td>Table 6.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparison of the scores of the MBI between the respondents and various other occupational groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The reliability scores for this study vary between 0.68 and 0.87, which is well within the guideline of 0.7. Based on this result, the scale was considered to be a reliable measure for examining the current sample. Furthermore, the scores are similar to other international and South African studies.

Golembiewski and Munzenrider (1988) proposed a phase model of burnout, in which cynicism (depersonalisation in the original MBI) initiates the burnout process. The high score on Cy refers to the interpersonal dimension of BO, but also indicates a negative, callous and detached response to various aspects of the job. The Phase Model maintains that depersonalisation is first experienced because a certain degree of professional detachment is often functional in dealing with others in a more "objective" manner (Golembiewski et al., 1996; Golembiewski & Munzenrider, 1988). Detachment becomes depersonalisation, impairing one's ability to develop personal relationships (Basson, 2002). As a result, sense of PE decreases and work stress may surpass one's ability to cope. This refers to a process of negative self-evaluation, in which feelings of competence, productivity and achievement at work, start to suffer. Since the score for RPE of the female academics showed an increased tendency, it is noteworthy that their self-appraisal, in terms of their own ability to cope with the demands of the job, indicated negative signs.

Based on the empirical evidence, it would seem that female academics might use this state of professional detachment in order to cope with the demands of their jobs. It is possible that they use a certain degree of "detachment" or cynicism to cope with the demands of dealing with large groups of students and the interpersonal demands being made upon them. The particularly high degree of cynicism present, could be an indication that the next phase in which the development of personal relationships is impaired, may be a problem in this population of female academics. The inability to develop interpersonal relationships may lead to impaired coping, became social support is not optimally utilised when interpersonal relationships are strained.
Because exhaustion levels are average, but there are strong indications of increased cynicism and moderate indications of a RPE, of concern that the signs of burnout may also be ignored in these academics or simply regarded as fatigue, tiredness or decreased energy levels. The results of this study compare well with the indicators for level four of the progressive phases in the burnout model designed by Golembiewski and Munzenrider (1988).

In the literature study, it was established that Cy develops as a result of job demands. Interpersonal demands and reduced professional efficacy however, are associated with the absence of job resources. Both job demands and an absence of job resources thus manifest as possible contributors to burnout in female academics.

6.2.1.4 Conclusion

The questionnaire was found to be reliable for the population used in this study. In light of the evidence in favour of the MBI, it was decided to use this questionnaire to measure BO and its three subdimensions in the sample of female academics.

6.2.2 Reliability of the UWES

As explained in chapter 5, the UWES was used to determine the levels of WE in this sample. The following calculations (secs. 6.2.2.1 to 6.2.2.4) were performed on the results of the UWES:

6.2.2.1 Reporting of results

A Cronbach’s alpha for the total UWES score was calculated as well as Cronbach’s alpha values for each of the subdimensions, namely Vi, De and Ab.
Table 6.3
Scale reliabilities (Cronbach’s alpha), means and standard deviations of the total scale and subdimensions of the UWES (n=187)

<table>
<thead>
<tr>
<th>Scale</th>
<th>N of items</th>
<th>M</th>
<th>SD</th>
<th>Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total UWES</td>
<td>16</td>
<td>4,11</td>
<td>0,98</td>
<td>0,87</td>
</tr>
<tr>
<td>Vi</td>
<td>5</td>
<td>4,18</td>
<td>1,0</td>
<td>0,64</td>
</tr>
<tr>
<td>De</td>
<td>5</td>
<td>4,12</td>
<td>1,2</td>
<td>0,83</td>
</tr>
<tr>
<td>Ab</td>
<td>6</td>
<td>4,19</td>
<td>1,03</td>
<td>0,75</td>
</tr>
</tbody>
</table>

6.2.2.2. Analysis of results

In the current study, Cronbach’s alpha coefficient for the UWES scale at a total level was found to be 0,82 with a mean of 4,11 and a standard deviation of 0,98. The mean scores for De and Ab were also above the cut-off point of 0,7. Although the score for Vi is a little lower at 0,64, this is only a marginal difference.

Men (N= 5 450) score significantly higher than women on De and Ab (N= 4 066), whereas no gender differences in levels of Vi seem to exist. Schaufeli and Bakker (2003) report a mean score for men on De and Ab of 4,02 and 3,65 respectively, while the corresponding mean values for women are 3,90 and 3,48. Hence the gender differences reported on De and Ab are 0,12 and 0,17 respectively- a minor difference. The total-score on the UWES for men is 3,89 as opposed to 3,77 for women; a difference of only 0,12. Since mean levels of engagement do not differ much between men and woman, it was decided not to compute gender-specific norm scores. Because the female academics in this study scored in the region of 4 on all the UWES scales, fairly positive WE results
were suggested. These scores can be considered to be marginally above average.

Viljoen (2004) calculated only a total UWES score for employees working in a Government Organisation in South Africa. The mean score was 3.85 and a standard deviation of 1.36 was calculated. She argues that scores in the region of three are considered average. Again, compared to this finding, the female academics show a marginally positive score for WE.

6.2.2.3 Interpretation of results

Comparative studies are provided in table 6.4, in order to facilitate the interpretation of the mean scores for the UWES.
<table>
<thead>
<tr>
<th>Item</th>
<th>Female academics (Dutch database)</th>
<th>Managers (Dutch database)</th>
<th>Physicians (Dutch database)</th>
<th>Police officers (international)</th>
<th>Student leaders (South Africa)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean score</td>
<td>~</td>
<td>Mean score</td>
<td>~</td>
<td>Mean score</td>
</tr>
<tr>
<td>Total score</td>
<td>4.1</td>
<td>0.87</td>
<td>4.22</td>
<td>Not available</td>
<td>3.10</td>
</tr>
<tr>
<td>VI (V)</td>
<td>4.02</td>
<td>0.64</td>
<td>4.29</td>
<td>0.81-0.9</td>
<td>3.04</td>
</tr>
<tr>
<td>De (D)</td>
<td>4.12</td>
<td>0.83</td>
<td>4.26</td>
<td>0.88-0.95</td>
<td>3.29</td>
</tr>
<tr>
<td>Ab (A)</td>
<td>4.19</td>
<td>0.75</td>
<td>3.98</td>
<td>0.7-0.88</td>
<td>2.96</td>
</tr>
</tbody>
</table>
When considering the individual subdimensions presented by the theory, De and Ab show high reliability values, while Vi has a cut-off point of just below the 0.7 mark. Hence, the reliability of the total WE score is extremely high. The UWES is consequently considered to be a reliable measure for examining the current sample (Pallant, 2001).

In terms of the manifestation of WE in the sample of female academics, the value for the total UWES was 4.1, Vi was 4.02, De was 4.12 and Ab was 4.19. These scores imply that a fairly high score was obtained on the total score, as well as the three subdimensions of the UWES. The target group is in general energetic, mentally resilient, strongly involved in their jobs, enthusiastic, proud, inspired and happily engrossed in their jobs. These scores, compared to the scores of a group of Dutch managers, are fairly high, with the exception of absorption, which was slightly lower. The manifestation of WE in female academics, however, was a little lower than the scores for physicians in the Dutch data base. The female academics' scores were notably higher than the scores for the international police force.

(Schaufeli et al., 2001) note that WE and specifically “Vi” are characterised by mental resilience (even in the face of difficulties) and the willingness to invest effort in one’s work. The fact that these women are engaged in their jobs, does not mean that they find it easy. It does, however, imply that even in the face of difficulties experienced, they are mentally resilient enough to show above average scores of WE.
6.2.2.4 Conclusion

Pertaining to the reliability of the UWES, sufficient evidence was found to decide to retain this questionnaire to measure WE and its three subdimensions in the sample of female academics.

6.2.3 Reliability of the SOC questionnaire

The SOC questionnaire was used to determine the levels of SOC in the sample, as explained in the methodology chapter. In order to make a decision on the reliability of the SOC, the following calculations were performed on the data generated with this questionnaire:

6.2.3.1 Reporting of results

Cronbach’s alpha for the total SOC score was calculated. Cronbach’s alpha values for each of the subdimensions, namely Co, Ma and Me were also calculated to promote a better improved understanding of the manifestation of SOC in the sample.

Table 6.5

Scale reliabilities (Cronbach’s alpha), means and standard deviations of the total scale and subdimensions of the SOC (n=187)

<table>
<thead>
<tr>
<th>Scale</th>
<th>N of items</th>
<th>M</th>
<th>SD</th>
<th>Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total SOC</td>
<td>29</td>
<td>128.22</td>
<td>15.36</td>
<td>0.90</td>
</tr>
<tr>
<td>Co</td>
<td>11</td>
<td>46.43</td>
<td>8.55</td>
<td>0.65</td>
</tr>
<tr>
<td>Ma</td>
<td>10</td>
<td>47.61</td>
<td>8.5</td>
<td>0.51</td>
</tr>
<tr>
<td>Me</td>
<td>8</td>
<td>40.10</td>
<td>7.65</td>
<td>0.83</td>
</tr>
</tbody>
</table>
6.2.3.2 Analysis of results

The alpha coefficient for the Co subdimension of the SOC was found to be 0.65; with a mean of 46.43 and a standard deviation of 8.55. The Ma subdimension was found to have an alpha coefficient of 0.51, with a mean of 47.61 and a standard deviation of 8.5. The Me subdimension obtained an alpha coefficient of 0.83, with a mean of 40.10 and a standard deviation of 7.65.

Regarding the mean scores for the SOC, the following has been established in the literature: The highest possible score that can be achieved on the SOC, is 203 (for the total score). Strümpfer and Wissing (1998) found 137 to be the South African estimate of the mean for the SOC scale. The mean values for SOC and the SOC subdimensions compare favourably with those reported by Ortlepp and Friedman (2001).

6.2.3.3 Interpretation of results

The SOC is characterized by a consistently high level of Cronbach's alpha as indicated in 26 studies, ranging from 0.84 to 0.93 (Antonovsky, 1987). Antonovsky (1987) also calculated that the entire spectrum of focus on the test-retest reliability produced a reliability coefficient between 0.41 and 0.97. This study found the Cronbach's alpha coefficient for the total SOC scale, to be 0.90, with a mean of 128.22 and a standard deviation of 15.36.

Rothmann (2000a) reported an alpha coefficient of 0.89 for the SOC in a South African study. The values calculated for this sample are similar to the Cronbach's alpha values reported by Basson (2002). She calculated Cronbach's alpha coefficients varying from 0.73 to 0.85 for the SOC in a sample of pharmacists in South Africa. This average inter-item correlation coefficients fall within the range recommended by Clark and Watson (1995). The alpha coefficients obtained in the present study were thus considered acceptable for further statistical analysis.
A comparison between the scores for female academics and various South African and international studies is provided in table 6.6. Since the total value for Cronbach’s alpha was above 0.7, the scale was considered to be a reliable measure for examining the current sample (Pallant, 2001). To enable the reader to compare the current results with previous studies, a selection of the results of existing studies are provided in table 6.6. (Coetzee & Cilliers, 2001; Herbst, 2006; Redelinghuys & Rothmann, 2004; Van Jaarsveld, 2005).

The scores for working mothers (Herbst, 2006) could be of particular importance, because the sample also consisted of females only. When the scores of the working mothers are considered, the Me component is also fairly low (similar to the female academics). When the scores of these two working “female groups” are compared with, say, the sample of engineers and scientists (Van Jaarsveld, 2005), the Me component shows a somewhat reduced tendency. This needs to be investigated in future studies.
Table 6.6

Comparison of the scores of the SOC between the respondents and various other occupational groups

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Total score</th>
<th>Co</th>
<th>Ma</th>
<th>Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female academics</td>
<td></td>
<td>128.22</td>
<td>46.43</td>
<td>47.61</td>
<td>40.10</td>
</tr>
<tr>
<td>Engineers/scientists</td>
<td>Mean</td>
<td>140.48</td>
<td>46.84</td>
<td>50.29</td>
<td>43.35</td>
</tr>
<tr>
<td>Middle managers in semigovernmental organisation (South Africa)</td>
<td>Mean</td>
<td>156.74</td>
<td>54.43</td>
<td>55.08</td>
<td>47.29</td>
</tr>
<tr>
<td>Working mothers (South African sample)</td>
<td>Mean</td>
<td>134.26</td>
<td>44.41</td>
<td>48.46</td>
<td>41.39</td>
</tr>
<tr>
<td></td>
<td>g</td>
<td>0.91</td>
<td>0.78</td>
<td>0.80</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>g</td>
<td>0.89</td>
<td>0.82</td>
<td>0.77</td>
<td>0.78</td>
</tr>
</tbody>
</table>

In terms of the total score for the SOC, the target group scored 128.22, which is lower than the estimate of the mean value for the SOC (137), as calculated by
Strümpfer and Wissing (1998). The total score provides an indication of the respondents’ overall SOC. A high score for the total SOC thus indicates that the individual comprehends the demands set before her, believes that she is able to manage them and can find meaning in her life. Because the overall score is somewhat lower than the mean calculated by Strümpfer and Wissing (1998), one would expect the females in this group to possibly feel that they are indeed capable of managing the demands set before them, and more importantly, they could have difficulty finding meaning in their lives.

Participants scored lower on the manageability and meaningfulness subdimensions, than, say a group of scientists and engineers tested in South Africa. A slightly higher score was achieved for the comprehensibility scale, which could indicate that participants do indeed understand their work situation and the demands made on them, but feel that they are not able to manage their work situation. They also have difficulty finding meaning in their current situation.

Antonovsky (1987) argues that high comprehensibility, combined with low manageability, leads to a highly unstable situation and a strong desire for change.

6.2.3.4 Conclusion

Since the total value for Cronbach’s alpha value is above 0.7, the scale was considered to be a reliable measure for examining the current sample (Pallant, 2001). The values calculated for this sample (on the various subdimensions) are similar in magnitude to the Cronbach alpha values reported by Basson (2002), Herbst (2006) and Van Jaarsveld (2005) in various samples in South Africa. The average inter-item correlation coefficients fall within the range recommended by Clark and Watson (1995). The alpha coefficients for the various subdimensions obtained in the present study were thus considered acceptable for further psychometric analysis.
6.3 VALIDITY

The validity of the three questionnaires, namely the MBI, UWES and SOC, were investigated with various statistical techniques.

6.3.1 Factor analysis

The factor analysis will next be reported.

6.3.1.1 Factor analysis of the MBI

The factor structure of the MBI is presented in this section.

6.3.1.1.1 Reporting of results

Table 6.7 presents the total variance for the overall scale of the MBI (before extraction), table 6.8 indicates those data after extraction, while table 6.9 depicts the pattern matrix for the three-factor solution to the MBI.
Table 6.7

Total variance explained for the overall scale of the MBI before extraction (excluding factors with eigenvalues lower than 1)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial eigenvalues</th>
<th>Extraction sums of squared loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage of Variance</td>
</tr>
<tr>
<td>1</td>
<td>5.774</td>
<td>36.089</td>
</tr>
<tr>
<td>2</td>
<td>2.341</td>
<td>14.631</td>
</tr>
<tr>
<td>3</td>
<td>1.283</td>
<td>8.018</td>
</tr>
<tr>
<td>4</td>
<td>1.045</td>
<td>6.533</td>
</tr>
</tbody>
</table>

The three-factor solution explained a total of 50.32% of the variance illustrated in table 6.7.

Table 6.8

Total variance explained for the overall scale of the MBI after extraction (Excluding factors with eigenvalues lower than 1)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial eigenvalues</th>
<th>Extraction sums of squared loadings</th>
<th>Rotation sums of squared loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage of variance</td>
<td>Cumulative percentage</td>
</tr>
<tr>
<td>1</td>
<td>5.774</td>
<td>36.089</td>
<td>36.089</td>
</tr>
<tr>
<td>2</td>
<td>2.341</td>
<td>14.631</td>
<td>50.720</td>
</tr>
<tr>
<td>3</td>
<td>1.283</td>
<td>8.018</td>
<td>58.738</td>
</tr>
<tr>
<td>4</td>
<td>1.045</td>
<td>6.533</td>
<td>65.271</td>
</tr>
</tbody>
</table>

Extraction method: principal axis factoring

*a* When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.
Table 6.9

Pattern matrix for the three-factor solution of the MBI

<table>
<thead>
<tr>
<th>Item numbers</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>0.926</td>
<td>-0.049</td>
<td>0.094</td>
</tr>
<tr>
<td>1.1</td>
<td>0.876</td>
<td>0.019</td>
<td>0.052</td>
</tr>
<tr>
<td>1.6</td>
<td>0.713</td>
<td>-0.019</td>
<td>-0.192</td>
</tr>
<tr>
<td>1.3</td>
<td>0.699</td>
<td>0.028</td>
<td>-0.77</td>
</tr>
<tr>
<td>1.4</td>
<td>0.643</td>
<td>0.032</td>
<td>-0.098</td>
</tr>
<tr>
<td>1.13</td>
<td>0.283</td>
<td>0.079</td>
<td>-0.042</td>
</tr>
<tr>
<td>1.11</td>
<td>0.158</td>
<td>0.723</td>
<td>-0.004</td>
</tr>
<tr>
<td>1.10</td>
<td>-0.079</td>
<td>0.658</td>
<td>0.152</td>
</tr>
<tr>
<td>1.12</td>
<td>-0.127</td>
<td>0.507</td>
<td>-0.419</td>
</tr>
<tr>
<td>1.5</td>
<td>-0.030</td>
<td>0.307</td>
<td>-0.084</td>
</tr>
<tr>
<td>1.16</td>
<td>0.126</td>
<td>0.307</td>
<td>-0.003</td>
</tr>
<tr>
<td>1.15</td>
<td>0.120</td>
<td>-0.077</td>
<td>-0.771</td>
</tr>
<tr>
<td>1.9</td>
<td>0.198</td>
<td>-0.053</td>
<td>-0.757</td>
</tr>
<tr>
<td>1.8</td>
<td>0.193</td>
<td>-0.021</td>
<td>-0.633</td>
</tr>
<tr>
<td>1.14</td>
<td>0.297</td>
<td>-0.065</td>
<td>-0.581</td>
</tr>
<tr>
<td>1.7</td>
<td>-0.174</td>
<td>0.252</td>
<td>-0.543</td>
</tr>
</tbody>
</table>

6.3.1.1.2 Analysis of results

The initial eigenvalues were inspected to determine the number of factors to use for the factor analysis. Initial eigenvalues with a total value higher than 1.0 indicate a strong extraction (Pallant, 2001). All factors with eigenvalues below 1.0 were considered insignificant. These are not reported. Four factors were found to have eigenvalues (Kaiser criterion) exceeding 1.0. This four-factor model accounts for 54.06% of the total variance.
Table 6.9 shows the rotated pattern matrix, which indicates a clearer distribution among the three factors. In this extraction, factor loadings greater than 0.3 were considered to be sufficient to assume a strong relationship between a variable and a factor (Pallant, 2001). There were no items with factor loadings less than 0.3. Therefore all items were retained for further analysis. Factor 1 corresponds with the Ex subdimension of the MBI and accounts for the most variance (4.5%) after rotation of the factors. The second factor accounted for 1.9% of the total variance and corresponds with the RPE subdimension. Factor 3 accounts for 4.1% of the total variance and corresponds with the Cy subdimension. A number of items do not correspond with the original subdimensions as defined by Maslach and Leiter (1997).

After the factor analysis was performed, a score was calculated for each subdimension by adding together all the items comprising each subdimension to obtain a total score for each. The results of the principal axis factor analysis support the three-factor solution found in previous studies, therefore supporting the validity of the scale.

Principal axis factor analysis with a direct oblimin rotation was used to investigate whether the factor structures of the three questionnaire could be replicated according to theoretical analysis. Prior to performing the factor analysis, the suitability of the data for factor analysis was assessed. The correlation matrices of each of the three questionnaires revealed a number of coefficients of 0.3 and above. The Kaiser-Mayer-Olkin value of each questionnaires exceeded the recommended value of 0.6 (Pallant, 2001) (MBI = 0.84; UWES = 0.93; OLQ = 0.81). Bartlett’s test of sphericity was statistically significant (p=0.000) and the sample size was greater than the recommended 150 respondents (n=187) (Pallant, 2001). The data were therefore considered suitable for a factor analysis.
6.3.1.1.3 Interpretation of results

By graphing the eigenvalues, the relative importance of each factor becomes apparent (Field, 2005). Cattel (1977) argues that the cut-off point for selecting factors should be at the point of inflexion of this curve. Inspecting Catell’s scree test revealed that the graph levelled off (reached the point of inflexion) at the third factor (see Figure 6.1).

Figure 6.1
Scree plot for the overall scale of the MBI

Taking into account that the first three factors explain more variance than the remaining factors, and that Maslach and Leiter’s (1997) model on which the MBI was based, identifies three dimensions of BO, it was decided to retain three factors (Ex, Cy and RPE) for further investigation. It is recommended that the structure of the MBI be reassessed in future studies, to account for the items that did not correspond with the three identified factors.
6.3.1.4 Conclusion

Considering all the evidence provided by the statistical instruments used, the MBI is considered to be a valid questionnaire in terms of this research and was consequently used to determine BO, as well as the subdimensions of Ex, Cy and RPE levels in the sample of female academics.

6.3.1.2 Factor analysis of the UWES

The factor structure of the UWES is presented in this section.

6.3.1.2.1 Reporting of results

The total variance for the overall scale of the UWES (before extraction) is provided in table format (table 6.10); table 6.11 summarises these data after extraction, while table 6.12 illustrates the pattern matrix for the three-factor solution to the MBI.

Table 6.10

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial eigen values</th>
<th>Extraction sums of squared loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>7,33</td>
<td>45,79</td>
</tr>
<tr>
<td>2</td>
<td>1,54</td>
<td>9,64</td>
</tr>
<tr>
<td>3</td>
<td>1,04</td>
<td>6,48</td>
</tr>
</tbody>
</table>

195
Table 6.11

Total variance explained for the overall scale of the UWES after extraction
(Excluding factors with eigenvalues lower than 1)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial eigenvalues</th>
<th>Extraction sums of squared loadings</th>
<th>Rotation sums of squared loadings[a]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage of variance</td>
<td>Cumulative percentage</td>
</tr>
<tr>
<td>1</td>
<td>7,327</td>
<td>45,792</td>
<td>45,792</td>
</tr>
<tr>
<td>2</td>
<td>1,542</td>
<td>9,636</td>
<td>55,428</td>
</tr>
<tr>
<td>3</td>
<td>1,036</td>
<td>6,475</td>
<td>61,903</td>
</tr>
</tbody>
</table>

Extraction method: principal axis factoring

[a] When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Examining the factor matrix after the three factors were extracted, did not reveal a simple structure. Items loaded on more than one factor. The majority of the items, however, did load strongly on the first factor.
Table 6.12

Pattern matrix for the four-factor solution of the UWES

<table>
<thead>
<tr>
<th>Item numbers</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 2,5</td>
<td>0.863</td>
<td>0.023</td>
<td>0.009</td>
</tr>
<tr>
<td>Question 2,7</td>
<td>0.832</td>
<td>0.061</td>
<td>-0.114</td>
</tr>
<tr>
<td>Question 2,8</td>
<td>0.776</td>
<td>0.039</td>
<td>-0.036</td>
</tr>
<tr>
<td>Question 2,2</td>
<td>0.770</td>
<td>-0.034</td>
<td>-0.179</td>
</tr>
<tr>
<td>Question 2,1</td>
<td>0.703</td>
<td>-0.082</td>
<td>-0.106</td>
</tr>
<tr>
<td>Question 2,4</td>
<td>0.651</td>
<td>-0.023</td>
<td>0.190</td>
</tr>
<tr>
<td>Question 2,9</td>
<td>0.583</td>
<td>0.095</td>
<td>-0.150</td>
</tr>
<tr>
<td>Question 2,3</td>
<td>0.375</td>
<td>0.087</td>
<td>-0.076</td>
</tr>
<tr>
<td>Question 2,13</td>
<td>0.321</td>
<td>0.219</td>
<td>-0.254</td>
</tr>
<tr>
<td>Question 2,16</td>
<td>0.092</td>
<td>0.722</td>
<td>0.146</td>
</tr>
<tr>
<td>Question 2,14</td>
<td>0.372</td>
<td>0.453</td>
<td>-0.281</td>
</tr>
<tr>
<td>Question 2,6</td>
<td>0.235</td>
<td>0.266</td>
<td>-0.228</td>
</tr>
<tr>
<td>Question 2,17</td>
<td>-0.036</td>
<td>0.251</td>
<td>-0.061</td>
</tr>
<tr>
<td>Question 2,11</td>
<td>0.215</td>
<td>0.110</td>
<td>-0.647</td>
</tr>
<tr>
<td>Question 2,10</td>
<td>0.268</td>
<td>-0.124</td>
<td>-0.646</td>
</tr>
<tr>
<td>Question 2,12</td>
<td>-0.087</td>
<td>0.329</td>
<td>-0.608</td>
</tr>
</tbody>
</table>

6.3.1.2.2 Analysis of results

Three factors were found to have eigenvalues (Kaiser criterion) exceeding 1.0, although the third factor only just made the cut according to this criterion. This three-factor model accounts for 61.9% of the total variance. The extremely strong loading on the first factor could indicate the possibility of a single factor only. The UWES model is based on three components of WE, namely Vi, De and Ab. The initial findings supported the existence of three factors (Schaufeli & Bakker, 2003).
Table 6.12 indicates the rotated pattern matrix. Since there were no items with factor loadings less than 0.3 on all factors, all items were retained for further analysis. Three clear factors emerged. Although three factors emerge as suggested by the theory, these items did not correspond perfectly to the items defined by Schaufeli and Bakker (2003) as belonging to each of the questionnaire subdimensions. Factor 1 had the most items loading on the scale and accounted for the most variance (6%) after rotation of the factors. The second factor which also had a number of strong items loading on the factor accounted for 3% of the total variance. Factor 3 accounted for 4% of the variance.

6.3.1.2.3 Interpretation of results

Inspecting Catell’s scree test revealed that the graph levelled off at the third factor (see figure 6.2). However, the graph also showed a very decline on the first factor, indicating the possibility of a single factor only. Since the UWES model is based on three components of WE, the initial findings supported the existence of three factors.
Naudé and Rothmann (2003) noted that other studies utilising the UWES, for example, studies in Spain and the Netherlands, confirmed the three-factor structure of WE. However, the results of a principal axis factor analysis by Schaufeli and Bakker (2003) could not support the three-factor theory suggested in the theory.

The result of Naudé and Rothmann's (2003) study was a two-factor model, with two factors emerging, namely Vi/De and Ab.
6.3.1.2.4 Conclusion

The evidence provided by the statistical techniques used on the UWES, showed that the UWES can be considered a valid questionnaire in terms of this research and will consequently be used to determine the WE levels. It was decided to retain all three factors, namely Vi, De and Ab.

6.3.1.3 Factor analysis of the SOC questionnaire

The factor structure of the SOC questionnaire is presented in this section.

6.3.1.3.1 Reporting of results

Nine factors were found to have eigenvalues (Kaiser criterion) exceeding 1.0. This nine-factor model accounted for 46.93% of the total variance. The inspection of Catell’s scree test revealed that the graph levelled off at the third factor (see figure 6.3). Taking into account that in his SOC model, Antonovsky (1987) identified three components of the SOC, it was decided to retain three factors for further investigation.
Table 6.13

*Total variance explained for the overall scale of the SOC before extraction (excluding factors with eigenvalues lower than 1)*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial eigenvalues</th>
<th>Extraction sums of squared loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage of variance</td>
</tr>
<tr>
<td>1</td>
<td>6,567</td>
<td>22,646</td>
</tr>
<tr>
<td>2</td>
<td>2,319</td>
<td>7,997</td>
</tr>
<tr>
<td>3</td>
<td>1,735</td>
<td>5,982</td>
</tr>
<tr>
<td>4</td>
<td>1,593</td>
<td>5,493</td>
</tr>
<tr>
<td>5</td>
<td>1,410</td>
<td>4,864</td>
</tr>
<tr>
<td>6</td>
<td>1,313</td>
<td>4,528</td>
</tr>
<tr>
<td>7</td>
<td>1,169</td>
<td>4,031</td>
</tr>
<tr>
<td>8</td>
<td>1,097</td>
<td>3,782</td>
</tr>
<tr>
<td>9</td>
<td>1,000</td>
<td>3,450</td>
</tr>
</tbody>
</table>
Table 6.14

*Total variance explained for the overall scale of the SOC after extraction (excluding factors with eigenvalues lower than 1)*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial eigenvalues</th>
<th>Extraction sums of squared loadings</th>
<th>Rotation sums of squared loadings <em>(a)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage of variance</td>
<td>Cumulative percentage</td>
</tr>
<tr>
<td>1</td>
<td>6,567</td>
<td>22,646</td>
<td>22,646</td>
</tr>
<tr>
<td>2</td>
<td>2,319</td>
<td>7,997</td>
<td>30,643</td>
</tr>
<tr>
<td>3</td>
<td>1,735</td>
<td>5,982</td>
<td>36,625</td>
</tr>
<tr>
<td>4</td>
<td>1,593</td>
<td>5,493</td>
<td>42,119</td>
</tr>
<tr>
<td>5</td>
<td>1,410</td>
<td>4,864</td>
<td>46,982</td>
</tr>
<tr>
<td>6</td>
<td>1,313</td>
<td>4,528</td>
<td>51,510</td>
</tr>
<tr>
<td>7</td>
<td>1,169</td>
<td>4,031</td>
<td>55,542</td>
</tr>
<tr>
<td>8</td>
<td>1,097</td>
<td>3,782</td>
<td>59,323</td>
</tr>
<tr>
<td>9</td>
<td>1,000</td>
<td>3,450</td>
<td>62,773</td>
</tr>
</tbody>
</table>

Extraction method: principal axis factoring

*(a)* When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Four items had communalities after extraction that were below 0.2 (items 3.2, 3.3, 3.10 and 3.17), which indicates that the items seemed to be well defined by the factors. However, it is recommended that future studies consider reassessing these items. The three-factor solution explained a total of 30.17% of the variance.
6.3.1.3.2 Analysis of results

Table 6.8 indicates the rotated pattern matrix which indicated a clearer distribution between the three factors. Three items had factor loadings of less than 0.3 (items 3.3, 3.13 and 3.10). Factor 1 corresponded with the Co subdimension of the SOC and accounted for the most variance (4.4%) after rotation of the factors. The second factor accounted for 3.8% of the total variance and corresponded to the Me subdimension. Factor 3 accounted for 3% of the total variance and corresponded to Ma subdimension. A number of items did not correspond to the original subdimensions defined by Antonovsky (1987), and it is recommended that the structure of the SOC be reassessed in future studies.
### Table 6.15

**Pattern matrix for the four-factor solution of the SOC**

<table>
<thead>
<tr>
<th>Item numbers</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 3.19</td>
<td>0.696</td>
<td>0.054</td>
<td>0.004</td>
</tr>
<tr>
<td>Question 3.24</td>
<td>0.597</td>
<td>-0.059</td>
<td>0.143</td>
</tr>
<tr>
<td>Question 3.29</td>
<td>0.562</td>
<td>0.018</td>
<td>0.014</td>
</tr>
<tr>
<td>Question 3.18</td>
<td>0.524</td>
<td>-0.059</td>
<td>-0.037</td>
</tr>
<tr>
<td>Question 3.21</td>
<td>0.524</td>
<td>0.128</td>
<td>0.281</td>
</tr>
<tr>
<td>Question 3.28</td>
<td>0.445</td>
<td>-0.244</td>
<td>0.230</td>
</tr>
<tr>
<td>Question 3.12</td>
<td>0.436</td>
<td>-0.204</td>
<td>-0.001</td>
</tr>
<tr>
<td>Question 3.26</td>
<td>0.431</td>
<td>-0.149</td>
<td>-0.008</td>
</tr>
<tr>
<td>Question 3.15</td>
<td>0.420</td>
<td>-0.150</td>
<td>-0.046</td>
</tr>
<tr>
<td>Question 3.2</td>
<td>0.306</td>
<td>0.075</td>
<td>-0.001</td>
</tr>
<tr>
<td>Question 3.17</td>
<td>0.274</td>
<td>0.240</td>
<td>0.093</td>
</tr>
<tr>
<td>Question 3.3</td>
<td>0.188</td>
<td>-0.127</td>
<td>-0.028</td>
</tr>
<tr>
<td>Question 3.22</td>
<td>0.318</td>
<td>-0.635</td>
<td>-0.094</td>
</tr>
<tr>
<td>Question 3.11</td>
<td>-0.040</td>
<td>-0.612</td>
<td>0.195</td>
</tr>
<tr>
<td>Question 3.14</td>
<td>0.209</td>
<td>-0.594</td>
<td>0.060</td>
</tr>
<tr>
<td>Question 3.7</td>
<td>0.061</td>
<td>-0.586</td>
<td>0.175</td>
</tr>
<tr>
<td>Question 3.27</td>
<td>0.020</td>
<td>-0.471</td>
<td>-0.052</td>
</tr>
<tr>
<td>Question 3.16</td>
<td>0.085</td>
<td>-0.470</td>
<td>0.211</td>
</tr>
<tr>
<td>Question 3.23</td>
<td>0.027</td>
<td>-0.423</td>
<td>0.098</td>
</tr>
<tr>
<td>Question 3.20</td>
<td>-0.174</td>
<td>-0.392</td>
<td>-0.048</td>
</tr>
<tr>
<td>Question 3.8</td>
<td>0.229</td>
<td>-0.355</td>
<td>0.155</td>
</tr>
<tr>
<td>Question 3.1</td>
<td>0.061</td>
<td>-0.334</td>
<td>0.253</td>
</tr>
<tr>
<td>Question 3.13</td>
<td>0.075</td>
<td>-0.195</td>
<td>-0.096</td>
</tr>
<tr>
<td>Question 3.6</td>
<td>-0.041</td>
<td>0.108</td>
<td>0.810</td>
</tr>
<tr>
<td>Question 3.5</td>
<td>-0.101</td>
<td>-0.039</td>
<td>0.679</td>
</tr>
<tr>
<td>Question 3.25</td>
<td>0.111</td>
<td>-0.136</td>
<td>0.426</td>
</tr>
<tr>
<td>Question 3.9</td>
<td>0.235</td>
<td>-0.156</td>
<td>0.329</td>
</tr>
<tr>
<td>Question 3.4</td>
<td>0.123</td>
<td>-0.249</td>
<td>0.303</td>
</tr>
<tr>
<td>Question 3.10</td>
<td>0.070</td>
<td>0.001</td>
<td>0.091</td>
</tr>
</tbody>
</table>

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In order to obtain a total score for each construct, all the relevant items were added together after the factor analysis was performed. The results of the principal axis factor analysis support the three-factor solution found in previous studies, therefore supporting the validity of the scale.

6.3.1.3.3 Interpretation of results

The graphing of the eigenvalues clarifies the relative importance of each factor (see figure 6.3) (Field, 2005). Cattel (1977) argues that the cut-off point for selecting factors should be at the point of inflexion of this curve. Inspecting Catell’s scree test revealed that the graph levelled off (reached the point of inflexion) at the third factor.

Considering that the first three factors explained more variance than the remaining factors and that Antonovsky’s model on which the SOC was based, identified three dimensions, namely Co, Me and Ma, it was decided to retain these three factors for further investigation (Antonovsky, 1987).

To account for the items that did not correspond with the three identified factors, it is recommended that the structure of the SOC be reassessed in future studies.
6.3.1.3.4 Conclusion

Considering all the evidence provided by the factor analysis, the SOC is considered a valid questionnaire in terms of this research and will consequently be used to determine the total SOC levels, as well as the subdimensions in the sample of female academics.
6.3.2 Confirmatory factor analysis

After the exploratory analysis, a confirmatory factor analysis was also performed on the MBI-GS, UWES and SOC. The results are reported in this subsection of chapter 6.

6.3.2.1 Confirmatory factor analysis of the MBI

The data pertaining to the confirmatory factor analysis of the MBI are presented here.

6.3.2.1.1 Reporting of results

The information on the proposed model for the MBI is presented in table 6.16.

Table 6.16
Basic model information

<table>
<thead>
<tr>
<th>MBI</th>
<th>Proposed Model</th>
<th>Null Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2</td>
<td>280,911</td>
<td>400,270987</td>
</tr>
<tr>
<td>Df</td>
<td>101</td>
<td>104</td>
</tr>
<tr>
<td>N</td>
<td>187</td>
<td>187</td>
</tr>
<tr>
<td>X2(crit)</td>
<td>83,882</td>
<td></td>
</tr>
</tbody>
</table>

The goodness-of-fit results are indicated in table 6.17.
Table 6.17

Goodness-of-fit information for three confirmatory models

<table>
<thead>
<tr>
<th></th>
<th>Total MBI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root mean square error of approximation (RMSEA)</td>
<td>0.098</td>
</tr>
<tr>
<td>Hoelter index</td>
<td>56.541</td>
</tr>
<tr>
<td>Bentler bonett index or normed fit index (NFI)</td>
<td>0.298</td>
</tr>
<tr>
<td>Tucker Lewis index or non-normed fit index (NNFI)</td>
<td>0.375</td>
</tr>
</tbody>
</table>

These results represent the fit between the theoretical model and the empirical reality. The theoretical model of BO, as described by Maslach and Leiter (1997) in chapter 2, including the subdimensions Ex, Cy and RPE, is used as a reference. The results of all four measures, namely the Root mean square error of approximation (RMSEA), the Hoelter index, the Bentler Bonett index or normed fit index (NFI) and the Tucker Lewis index or non-normed Fit Index (NNFI), are summarised in table 6.17. The criteria used for the interpretation of these measures are discussed in chapter 5.

6.3.2.1.2 Analysis of results

The RMSEA presents moderate support for the MBI model. The Hoelter index, Bentler Bonett index, and the Tucker Lewis index do not indicate a goodness-of-fit for the MBI model.

6.3.2.1.3 Interpretation of results

In confirmatory factor analysis, specific hypotheses about structure and relations between the latent variables (underlying the data), are tested. The latent BO
variables were identified as Ex, Cy and RPE (Maslach & Leiter, 1997). A thorough confirmatory factor analysis of the MBI, in which four different statistical measures were used, provided moderate support for the MBI model, as described in the literature by Maslach and Leiter (1997). This implies that psychometric evidence was found that the MBI did indeed measure Ex, Cy and RPE, as these dimensions are defined in the theory. It is advisable that the goodness-of-fit of this questionnaire should be revised in future studies because three of the instruments failed to provide any statistical evidence.

6.3.2.1.4 Conclusion

After consideration of all the information collected in the confirmatory factor analysis, it was decided to retain the MBI, as a valid measure of BO, with its proposed factor structure, in the sample group.

6.3.2.2 Confirmatory factor analysis of the UWES

Data pertaining to the confirmatory factor analysis of the UWES are presented here.

6.3.2.2.1 Reporting of results

The statistical information gathered for the UWES is provided in table 6.18.
Table 6.18

Basic model information

<table>
<thead>
<tr>
<th>Total UWES</th>
<th>Proposed model</th>
<th>Null model</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2</td>
<td>359,769</td>
<td>761,661</td>
</tr>
<tr>
<td>Df</td>
<td>101</td>
<td>104</td>
</tr>
<tr>
<td>N</td>
<td>187</td>
<td>187</td>
</tr>
<tr>
<td>X2(crit)</td>
<td>65,715</td>
<td></td>
</tr>
</tbody>
</table>

The goodness-of-fit results are presented in table 6.19 (below). These results represent the fit between the theoretical model and the empirical reality. The results of all four measures, namely the RMSEA, the Hoelter index, the Bentler Bonett index or NFI and the Tucker Lewis index or NNFI, are presented.

Table 6.19

Goodness-of-fit information for three confirmatory models

<table>
<thead>
<tr>
<th></th>
<th>Total UWES</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMSEA</td>
<td>0,117</td>
</tr>
<tr>
<td>Hoelter index</td>
<td>34,975</td>
</tr>
<tr>
<td>Bentler Bonett index or NFI</td>
<td>0,528</td>
</tr>
<tr>
<td>Tucker Lewis index or NNFI</td>
<td>0,595</td>
</tr>
</tbody>
</table>
6.3.2.2.2 Analysis of results

The RMSEA, Hoelter index, Bentler Bonett index and the Tucker Lewis index, all fail to indicate a goodness-of-fit for the UWES model (Schaufli & Bakker, 2003). All goodness-of-fit indicators for the UWES were found to be poor.

6.3.2.2.3 Interpretation of results

The confirmatory factor analysis investigated the structure and relationship between the latent variables of WE as hypothesised in the literature, namely Vi, De and Ab (Schaufeli & Bakker, 2003) and the results of this study.

The implications of the poor goodness-of-fit results are that the four statistical techniques used could not confirm the goodness-of-fit between the postulated model and the default model, as proposed in the literature. Because the UWES is a fairly new instrument (the most recent of the three instruments used in this research), the results of the confirmatory factor analysis is not unexpected. It is advisable that research on the factor structure of the model used to develop the UWES (Schaufeli & Bakker, 2003), should be continued.

For the purpose of this research, caution will be exercised in drawing to conclusions based on the results of the factor analysis. The lack of proof for the goodness-of-fit will be considered in all further interpretations.

6.3.2.2.4 Conclusion

In light of the results provided by the factor analysis (the eigenvalues and the scree plot), as well as the strength of the theoretical model, a decision was made to retain the UWES with all three of its subdimensions, as described in the literature. As explained, caution will be exercised in making interpretations.
6.3.2.3 Confirmatory factor analysis of the SOC

The results pertaining to the confirmatory factor analysis of the SOC questionnaire are presented in the following subsections.

6.3.2.3.1 Reporting of results

The results of the proposed model for the SOC (Antonovsky, 1987) are summarised in table 6.20.

Table 6.20

<table>
<thead>
<tr>
<th>Total SOC</th>
<th>Proposed Model</th>
<th>Null Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2</td>
<td>861,586</td>
<td>1041,13</td>
</tr>
<tr>
<td>Df</td>
<td>374</td>
<td>377</td>
</tr>
<tr>
<td>N</td>
<td>187</td>
<td>187</td>
</tr>
<tr>
<td>X2(crit)</td>
<td>91,630</td>
<td></td>
</tr>
</tbody>
</table>

The goodness-of-fit results for the SOC are presented in Table 6.21 below. As explained, these results represent the fit between the theoretical model and the empirical reality. The results of all four measures, namely the RMSEA, the Hoelter index, the Bentler Bonett index or NFI and the Tucker Lewis Index or NNFI are summarised.
Table 6.21

Goodness-of-fit information for three confirmatory models

<table>
<thead>
<tr>
<th></th>
<th>Total SOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMSEA</td>
<td>0.084</td>
</tr>
<tr>
<td>Hoelter index</td>
<td>20.781</td>
</tr>
<tr>
<td>Bentler Bonett index or NFI</td>
<td>0.172</td>
</tr>
<tr>
<td>Tucker Lewis index or NNFI</td>
<td>0.260</td>
</tr>
</tbody>
</table>

6.3.2.3.2 Analysis of results

The RMSEA presents moderate support for the SOC model (Antonosky, 1987). The Hoelter index, Bentler Bonett index, as well as the Tucker Lewis index, failed to provide proof of goodness-of-fit for the SOC model.

6.3.2.3.3 Interpretation of results

Four indicators were used in the investigation of the fit between Antonovsky's proposed model (1987) and the empirical reality. The analysis resulted in some statistical indication of goodness-of-fit for the SOC. The existence of the three subdimensions proposed by Antonovsky (1987), namely Co, Me and Ma, was correlated with the empirical evidence. Since support was only found in one of the four measures (the RMSEA), it is consequently advised that research be continued on the factor structure of the instrument.
6.3.2.3.4 Conclusion

After careful consideration of the data collected in the confirmatory factor analysis, it was decided to use the SOC with its proposed factor structure (Co, Me and Ma) as a valid measure of BO in the sample group.

6.4 THE RELATIONSHIP BETWEEN BURNOUT, WORK ENGAGEMENT AND SENSE OF COHERENCE

The relationship between the various constructs in this study was analysed in terms of the hypothesis of this research project, as formulated in section par. 5.7.

6.4.1 Reporting of results

Table 6.22 provides a summary of the correlation analysis results. The relationship between the total scores for the MBI (BO), UWES (WE) and SOC questionnaire (SOC) is highlighted in red.
Table 6.22

Correlation between MBI, UWES and SOC total scores and subdimensions

<table>
<thead>
<tr>
<th></th>
<th>WE</th>
<th>Vi</th>
<th>De</th>
<th>Ab</th>
<th>SOC</th>
<th>Co</th>
<th>Ma</th>
<th>Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>BO</td>
<td>R</td>
<td>-0.72</td>
<td>-0.68</td>
<td>-0.75</td>
<td>-0.53</td>
<td>-0.48</td>
<td>-0.36</td>
<td>-0.29</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Ex</td>
<td>R</td>
<td>-0.49</td>
<td>-0.50</td>
<td>-0.50</td>
<td>-0.32</td>
<td>-0.41</td>
<td>-0.30</td>
<td>-0.28</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Cy</td>
<td>R</td>
<td>-0.66</td>
<td>-0.57</td>
<td>-0.70</td>
<td>-0.51</td>
<td>-0.41</td>
<td>-0.29</td>
<td>-0.22</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.002</td>
</tr>
<tr>
<td>RPE</td>
<td>R</td>
<td>-0.55</td>
<td>-0.54</td>
<td>-0.56</td>
<td>-0.43</td>
<td>-0.30</td>
<td>-0.25</td>
<td>-0.17</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.022</td>
</tr>
<tr>
<td>WE</td>
<td>R</td>
<td>1.00</td>
<td>0.89</td>
<td>0.94</td>
<td>0.91</td>
<td>0.52</td>
<td>0.33</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Vi</td>
<td>R</td>
<td>1.00</td>
<td>0.78</td>
<td>0.71</td>
<td>0.46</td>
<td>0.30</td>
<td>0.32</td>
<td>0.52</td>
</tr>
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<td></td>
<td>p-value</td>
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<tr>
<td>De</td>
<td>R</td>
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<td>0.52</td>
<td>0.33</td>
<td>0.37</td>
<td>0.58</td>
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</tr>
<tr>
<td>Ab</td>
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<td>0.29</td>
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<tr>
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<td>p-value</td>
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</tbody>
</table>

6.4.2 Analysis of results

Strong support was found for the hypothesis. On the basis of Pearson’s correlation matrix, significant relationships between all of the total scores and subdimensions of the MBI, UWES, and SOC were found.

The correlations illustrated in figure 6.4 (p. 216) were significant in terms of the total scores. The lowest correlation was between SOC and BO, which fell just marginally below the 0.5 value indicating a strong effect. BC was also found to have a strong negative correlation with WE (p<0.001). Another aspect of the
hypothesis, namely that BO would be negatively correlated with a strong SOC, also received strong statistical support, because all the scales and subdimensions of the MBI and the SOC were negatively correlated at the 99% confidence interval. Testing whether WE would be positively correlated with a SOC also received strong support since all the scales and subdimensions of the UWES and the SOC were found to be positively correlated with each other at the 99% confidence interval.
Figure 6.4
The relationship between burnout, work engagement and sense of coherence

Key for the correlation strength illustrated in figures 6.4 to figure 6.9

<table>
<thead>
<tr>
<th>Correlation</th>
<th>R-value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R &gt; 0.3</td>
<td></td>
<td>Practically significant effect (medium)</td>
</tr>
<tr>
<td>r &gt; 0.5</td>
<td></td>
<td>Practically significant effect (large)</td>
</tr>
<tr>
<td>r &gt; 0.7</td>
<td></td>
<td>Practically significant effect (very strong)</td>
</tr>
</tbody>
</table>
From the above information it is evident that a significant practically important relationship does indeed exist between the different components. There is an inverse (negative) relationship between SOC and BO. The higher the level of SOC, the lower the level of BO will be. The opposite will then automatically also apply, namely that a low SOC is associated with a high level of BO. The behavioural implications of these correlations are assessed in the following section.

6.4.3 Interpretation of results

Based on the evidence collected from the empirical study, the relationship between BO, WE and SOC was represented graphically in figure 6.4. A full explanation in terms of the significance of these correlations is provided in chapter 5 (section 5.5.4).

6.4.3.1 Sense of coherence and burnout

The total SOC is significantly inversely related to the total BO score- hence, the stronger the SOC of the female academic, the lower the BO level experienced will be. However, a female academic with a weak SOC will be more vulnerable to the development of BO. This correlation implies that the female academic who is confident that her internal and external environments are structured, predictable and explicable, who perceives that resources are available to meet the job demands and views these demands as challenges worthy of investment and engagement, is less likely to become exhausted and feel overextended. The female academic with a high SOC is not likely to easily perceive a crisis in her relationship with work and people at work.

Conversely, if the female academic is unable to see the world as structured, predictable and explicable (low SOC) this is associated with a high level of BO. A low SOC implies that the female academic is vulnerable to the experience of a
loss of energy, depletion, debilitation and fatigue. Psychologically, a loss of feeling and concern, trust, interest and spirit will be experienced. These feelings make the female academic prone to feeling exhausted, cynical and ineffective in her job.

6.4.3.2 Sense of coherence and work engagement

The implication of the correlation analysis is that SOC will also moderate the levels of WE, but in a positive direction. The higher the level of SOC, the higher the level of WE is expected to be. Behaviourally, this implies that when the female academic understands the demands of her job, feels that she is able to manage the demands set before her and is able to find meaning in her work-life, she will feel vigorous, full of energy, dedicated to doing a great job and have the ability to become totally absorbed in the tasks she is busy with.

A low SOC would thus imply that the female academic will not score highly on WE. Female academics with a low SOC will not be able to become happily engrossed in their work, forget about the passing of time, nor find pleasure in their daily job.

Since all the correlations are practically significant, strong interaction between the various constructs exist. It is clear from the relationship that SOC will moderate the level of BO and WE in a negative and in a positive direction, respectively.

6.4.3.3 Burnout and work engagement

The relationship between BO and WE has an extremely strong negative correlation. This confirms that female academics who score high on BO will score low on WE, and vice versa. The female academic who experiences BO symptoms such as a loss of energy, depletion, debilitation, fatigue, concern, trust and interest, will not exhibit vigour, dedication or engrossment in her job.
Conversely, the female academic who experiences high levels of WE, and is consequently full of energy, feels dedicated to her job and has the ability to become totally absorbed in her work, will therefore not feel totally exhausted, without energy, chronically fatigued, cynical and inefficient in her professional life.

It is noteworthy that the correlation between the two concepts (although extremely strong), however, is not absolute, confirming the theoretical model of Schaufeli and Bakker (2003) that BO and WE are negatively correlated, but are not exact opposites. It is theoretically possible for an academic to feel burnt-out, but still experience the vigour, dedication and absorption that characterises WE. For is for example it is possible that feelings of BO are experienced when lecturing to a large group, but that the female academic can still become totally engrossed in another aspect of the job, for example research. This is because WE is scientifically defined as resilience, despite the difficulties experienced. Resilience is thus a vital factor in the manifestation of WE.

In order to explore the nature of the correlations that exist between the subdimensions of the various constructs, these correlations are interpreted in more depth. Graphical representations of all the significant correlations (r>0.3) are also provided in the figures below.
• Significant correlations including subdimensions of sense of coherence and burnout

Figure 6.5

Significant correlations between the subdimensions of sense of coherence and burnout
• Practically significant correlations with sense of coherence, with a medium strength effect (lines indicated in blue)

a  Sense of coherence and exhaustion

A practically significant correlation (medium effect) exists between the total SOC score and Ex. Hence the high SOC academic will not easily become fatigued, nor worry unnecessarily. The high SOC enables her to perceive stressors as benign. She is not likely to suffer from sleep disturbances, disillusionment or disappointment. This does not mean that she will not become tired, but it will be a satisfying tiredness of a job well done.

A low SOC score is indicative of exactly the opposite, where the respondent will easily become exhausted. Ex includes physical exhaustion as characterised by low energy, chronic fatigue, weakness and a wide variety of physical and psychosomatic complaints, emotional exhaustion, involving feelings of helplessness, hopelessness and entrapment, as well as mental exhaustion, referring to the development of negative attitudes towards one’s self, one’s work and life itself. These results mirror the findings of Feldt (1997) in psychiatric nurses. He determined that nurses with a strong SOC and manageable work load are much less likely to experience Ex.

b  Sense of coherence and cynicism

Statistically the SOC correlates negatively (medium effect) with the Cy subdimension of the BO. In this sample of female academics, the level of Cy was particularly high. Hence, correlations with Cy were carefully interpreted.

From the negative correlations one may deduce that the high SOC academic will not experience cynical, detached attitudes towards work, students and
colleagues. In this sample group, the SOC was not high enough to act as a buffer against the disillusionment and a feeling of indifference towards the work that the academic once felt passionate about. The academic job would probably be experienced as stressful and threatening. Since Cy is often a coping response to job overload, it should be that in this sample, the job overload is simply too high and the SOC not strong enough to act as a protector against the development of Cy.

A low SOC is associated with a high Cy score, which could be indicative of an increase in negative, cynical and insensitive attitudes, say, towards colleagues and students, in which case they could be labelled in a derogatory way and treated accordingly. When people feel cynical, they adopt a cold, distant attitude towards work and colleagues. Involvement is minimised in an attempt to protect the self against exhaustion and disappointment. A high score in this dimension represents a failure to develop and maintain a professional attitude of detached concern. Cynical academics are less motivated, put in less effort, are less patient with students and are less optimistic about the future. The low SOC academic who presents with a high Cy score, is vulnerable to feelings of resentment and isolation.

Cynicism does not only reflect indifference or a distant attitude towards people at work but also indicates distancing from the work itself. The female academic might therefore feel negative, callous and detached towards various different aspects of the job (e.g. the administrative duties involved).

c. Sense of coherence and reduced professional efficacy

A practically significant negative correlation (medium effect) exists between the total SOC score and the feeling of RPE. Because the high SOC female academic will evaluate stressful situations as less threatening and believe that she is competent and able to satisfy essential elements of job performance. She will
identify new challenges in her research and academic work and welcome them as potential sources of self-development and growth.

A low SOC academic, however, will believe that she failed to achieve her work objectives, accompanied by feelings of ineffectiveness and poor professional self-esteem. This relates to feelings of a lack of competence, productivity and achievement at work. A high RPE refers to a feeling of being unable to meet students' needs and to satisfy essential elements of job performance. The female academic may start to experience a growing sense of inadequacy and new projects (e.g. a new research project or the development of a new qualification) will be too much to cope with.

d  Comprehensibility and burnout

The Co dimension correlates statistically negatively (medium effect) with the total BO score. A high Co indicates that an individual senses life as ordered and consistent. This interpretation acts as protection against the development of BO. When the female academic perceives the world as making cognitive sense, she is not likely to develop feelings indicative of the total BO score, including Ex, depletion, Cy, detachment and RPE in her job. Cognitively, she will evaluate her job as challenging and believe that the resources are at her disposal to achieve success. She will therefore invest her effort and time in her academic work.

The low Co individual is vulnerable to the development of BO. The female academic who is unable to make cognitive sense of her work environment is also likely to perceive the job resources as inadequate to meet the demands made of her. Gmelch et al. (1984) reported that some of the most troublesome stressors for academics include inadequate financial support for research and striving for publication. The low Co female academic will thus be overwhelmed by this lack of job resources and start to resist going to work, experience a sense of failure and eventually develop poor job-related self-esteem. Feelings of being
exhausted, drained, used up, devoid of joy and a general sense of futility, manifest in these academics.

\textit{e Comprehensibility and exhaustion}

Co correlates negatively (statistically significant; medium effect) with Ex. Co refers to the cognitive dimension of SOC. Female academics with a high Co, are less likely to experience symptoms of mental exhaustion. Although they also become tired, this differs from the drained, “burnt-out” tiredness of Ex. It can be described as a feeling of being “tired but satisfied”.

The female academic with a low Co score who is unable to make cognitive sense of her environment, is much more prone to the development of Ex. Symptoms of mental Ex that will manifest in the female academic include negativity, rigid thinking patterns, stereotyping, intellectualisation, poor concentration, forgetfulness and a high incidence of mistakes.

\textit{f Meaningfulness and exhaustion}

The Me dimension shows negative statistical correlations (medium effect) with Ex. Meaningfulness refers to an individual’s emotional assessment of situations as coherent and worthy of investment. This dimension represents the motivational element of SOC, were the female academic is full of energy and resilience and welcomes new challenges. She will be motivated to attempt challenges in the form of, say new research projects or new teaching and learning techniques.

A low score on Me is associated with feelings of helplessness, hopelessness and entrapment. New challenges are simply new burdens. Since there is a strong emotional element involved in Me, emotional Ex is likely to occur in the female academic with a low Me score. Anxiety, tearfulness and a depressed mood will
manifest. Sudden outbursts of anger, frustration, feelings of paranoia, oversensitivity and a negative self-concept are symptomatic of this state.

\textit{g} \quad \textit{Meaningfulness and reduced professional efficacy}

The Me dimension shows negative statistical correlations (medium effect) with RPE. The person who scores high on Me feels positive and welcomes challenges at an emotional level. These challenges are assessed and evaluated as worthy of energy and time investment. Consequently, she will adjust her job performance and productivity accordingly, which in turn will contribute to a positive self-evaluation.

The academic with a low Me score, however, will feel that she is not achieving her work objectives, accompanied by feelings of ineffectiveness and poor professional self-esteem. She will evaluate herself as incompetent, unproductive and will not value her achievements at work. RPE refers to a feeling of, say being unable to meet students' needs, cope with administrative duties and achieve research objectives. She will experience a growing sense of inadequacy and new projects will seem overwhelming to her. Absenteeism and eventual turnover are the typical result.

- \textit{Practically significant correlations with a strong effect (lines indicated in green, figure 6.5).}

\textit{a} \quad \textit{Meaningfulness and burnout}

The Me dimension shows extremely strong negative statistical correlations (strong effect) with the total BO score. This implies that the female academic who feels that her life makes sense at an emotional, rather than at a cognitive level, is not likely to suffer from the negative symptoms of the total BO dimension. When the female feels that she is involved in decision making and takes responsibility
for the decisions that are being made, she will be motivated to "give" of herself and invest energy in her job. She is less likely to feel exhausted, overextended or to perceive a crisis in her relationship with work and people at work. Hence, a high SOC will protect the academic against the experience of Ex, Cy and RPE.

A low Me creates a vulnerability in the female academic for the development of Ex, Cy and RPE, because emotionally, life will not make sense to her, nor will she have the strength to view new tasks and assignments as an opportunity for personal growth. The already overburdened female will distance herself from her work, colleagues and students. A general sense of helplessness, hopelessness and futility sets in as a result.

b Meaningfulness and cynicism

The Me dimension shows extremely strong negative statistical correlations (strong effect) with the Cy score. This dimension represents the motivational element of SOC, which means that a high Me score will be indicative of an individual who finds meaning in her life and values life's challenges. The high Me female academic is not likely to suffer a cynical, detached attitude towards work, students and colleagues. She is successful in creating and maintaining a professional attitude of "detached empathy and concern" towards students. She will therefore not experience disillusionment, frustration and eventual apathy towards her academic work.

A low score on Me is associated with a feeling of total indifference towards the work the female academic might once have felt passionate about. The world is experienced as devoid of meaning. As a result, Cy increases and symptoms such as decreased empathy with others, withdrawal, irritability, hostility, suspicion and a weakened level of impulse control are observed. The low Me academic will adopt a cold, distant attitude towards work and colleagues. Cynicism is often a coping response to job overload. Hence there is a failure to
develop and maintain a professional attitude of detached concern towards students, colleagues and other stakeholders.

- **Significant correlations including subdimensions of SOC and WE**

Figure 6.6

*Significant relationships between the subdimensions of sense of coherence and work engagement*
Practically significant correlations with a medium strength effect (lines indicated in blue):

a  Sense of coherence and vigour

The SOC dimension shows a significant positive statistical correlation (medium effect) with the Vi score. This implies that the female academic will be bursting with energy and mental resilience while working, and will also invest a lot of effort in her work. The high Vi academic will have the mental strength to welcome new challenges and persist even when she experiences the difficulties of, say, a lack of funds for research, increasing class sizes and administrative red tape. These females are optimistic and trust themselves enough to show initiative in their jobs.

Conversely, a low SOC score is associated with low levels of energy, resilience, effort investment and persistence in the academic job. The academic will become easily fatigued and her perception of her job, and new projects will be negative. These come to be seen as burdens that she would much rather do without.

b  Sense of coherence and dedication

The SOC dimension shows a significant positive statistical correlation (medium effect) with the De score, which means that the female academic with a high total SOC score will also score high on De. These female academics are strongly involved in their academic jobs; and therefore experience a sense of significance, enthusiasm, inspiration, pride and challenge in their academic work. They are able to realise personal and existential goals, thereby maintaining positive “growth spirals” (Jackson, 2004; Schaufeli & Bakker, 2001).

On the other side of the spectrum, a low SOC score is associated with a low De, implying that the academic is unable to find meaning, or purpose in her job.
According to Schaufeli and Bakker (2001, 2004), the respondent low on De experiences a sense of “dis-pleasure” in her job and will try to distance herself from her job, students and colleagues.

c  
Sense of coherence and absorption

The SOC dimension shows a significant positive statistical correlation (medium effect) with the Ab score, which means that the academic will see the world as structured and ordered. She will enjoy working, time will pass quickly and she will find it difficult to detach herself from her work. These individuals experience the optimal work experience known as “flow”.

A low SOC in the female academic is associated with a low Ab. For this academic, time will pass slowly and she will be unable to concentrate on her job and forget everything else. She will not establish a sense of “connection” with her job and will submit passively to the influences of the environment.

d  
Comprehensibility and work engagement

The Co dimension shows a significant positive statistical correlation (medium effect) with the total WE score. This implies that the female academic who perceives her internal and external environments as making cognitive sense, will also experience the enduring, positive, fulfilling, cognitive state of WE, characterised by its three subdimensions, namely Vi, De and Ab. A strong cognitive element presents in both Co and WE.

However a low Co in the female academic is associated with a low total WE. Cognitively, because the female will experience her world as chaotic and disorganised, she will be unable to experience the positive, fulfilling, cognitive state of WE.
The Co dimension shares a significant positive statistical correlation (medium effect) with the De score. This means that the high Co female will be strongly involved in her academic job and experience a sense of significance, enthusiasm, inspiration, pride and challenge. The challenges presented are welcomed, and in her pursuit of these challenges, she will realise personal and existential goals, thereby maintaining positive "growth spirals" (Jackson, 2004; Schaufeli & Bakker, 2001).

According to Schaufeli and Bakker (2001, 2004), the respondent low on Co and De experiences a lack of meaning and purpose in her job. Hence, a sense of futility and "dis-pleasure" in her work develops. She will feel uninspired, distance herself from the job and avoid all challenges such as new projects.

The Ma dimension has a statistically significant positive correlation (medium effect) with the WE score. A high Ma score indicates that the academic believes resources are available to meet the job demands and that she is able to cope with these demands. She feels energetic, skilled and able to cope with difficult situations. She feels she can cope with her workload. This correlates significantly with the total WE experience (including Vi, De and Ab). These females are often able to generate their own positive feedback. They create "rewards" in the form of success, recognition and appreciation through their attitudes and activities. In the absence of, say, promotion opportunities, they will, for example, improve their qualifications or publish research to create their own "positive growth spirals" (Schaufeli, 2004).

A low score on the Ma dimension, where the female academic believes that resources are not adequate and she is unable to cope with job demands, is
positively correlated with a low WE score. Typical of this state is the existence of role underload or overload. Underload refers to a lack of direction, or the individual seldom being called on to exercise her abilities or actualise her potential. In the academic profession, this occurs when opportunities for promotion are not available and boredom and stagnation set in. Overload refers to the individual setting a pace too rapid for demanded development, or never having enough time, energy and resources to do everything. A low Ma means that the female academic will be incapable of experiencing a positive, fulfilling, work-related state of mind, as described by the WE construct.

$g \quad Manageability \ and \ vigour$

The Ma dimension has a statistically significant positive correlation (medium effect) with the Vi score. The academic feels energetic, skilled and capable of managing difficult situations. This is significantly correlated with a high Vi score, characterised by high levels of energy and resilience while working, the willingness to invest effort in her teaching and learning, research and administrative duties. Even when faced with a lack of resources for research, she will dedicate herself to the work task and believe that the organisation provides her with valued job resources. She will be resilient and find creative ways to overcome stumbling blocks, leading to further learning, growth and development.

Conversely, a low Ma score (accompanied by a perception of inadequate resources, role underload and overload) is indicative of a low Vi score. The academic will present with low levels of energy and she will not be resilient, resulting in an increase in mistakes, accidents, a loss of concentration and forgetfulness. The female academic who does not experience her work as manageable, will feel emotionally drained, tired, frustrated and negative towards her work and life in general.
Manageability and dedication

The Ma dimension has a statistically significant positive correlation (medium effect) with the De score, meaning that these academics are completely dedicated and experience a sense of significance, enthusiasm, inspiration, pride and challenge in their work. A strong sense of involvement and passion for the academic profession presents. The academic high on Ma and De will "walk the extra mile" and be committed to her personal and professional goals. As she achieves these goals, positive feedback is generated, creating positive growth spirals.

A low Ma score (accompanied by a perception of inadequate resources, as well as role underload and overload) is indicative of a low De score. Frustration and apathy are the result. The female academic who experiences her workload as unmanageable will be characterised by an indifferent, negative attitude and distance herself from the job in an effort to protect herself. Demerouti et al. (2001) describe this state as "disengagement" with the work.

Manageability and Absorption

The Ma dimension has a statistically significant positive correlation (medium effect) with the Ab score. Because she feels that she can cope with job demands, her behaviour is characterised by fully concentrating on and being happily engrossed in her work. These academics experience, what Langelaan et al. (2006) refer to as, "pleasure" while performing their jobs. According to Schaufeli and Enzman (1998), this is a positive outcome of being able to cope effectively with work stress. Since stressors are perceived as benign and manageable, the academic welcomes the challenge. Time flies and it is difficult for her to leave the tasks that occupy her. These academics have a low tendency to leave the organisation.
A low Ma score (accompanied by a perception of inadequate resources, role underload and overload) is associated with a low Ab score, with low levels of concentration and an inability to forget about time passing. As a result, the female academic will start to feel incompetent at her work (including, teaching and learning, research and administrative duties). She is no longer able to cope effectively with the job demands posed. As her productivity declines, her professional self-esteem will also dwindle.

\[ j \quad \textit{Meaningfulness and Absorption} \]

The Me dimension has a statistically significant positive correlation (medium effect) with the Ab score. A high Me score implies an emotional assessment of situations as coherent and worthy of investment. A high score on Me correlates significantly with the experience of being totally absorbed and involved in the academic work. The academic is motivated to achieve her personal and work goals. This is similar to the state of “flow”, a state of optimal experience, described by Csikszentmihalyi (1990). The academic who thus finds meaning in her efforts to perform a great job, also perceives her existential goals as achievable.

A low Me, low Ab score is indicative of the academic feeling that she is reduced to being an object. The world is experienced as being indifferent to what she does and comes to be seen as a world devoid of meaning. She thus becomes disillusioned and distances herself from the job.

- \textit{Practically significant correlations with a strong effect (lines indicated in green)}:

It is noteworthy that all three of the strong correlations involve the Me dimension. A high Me score implies an emotional conviction that job demands are challenges worthy of investment and engagement. Life has meaning at an
emotional, rather than a cognitive level and challenges are welcomed. The emotional evaluation of life as worthy of energy investment (or not), thus presents strongly in this group of female academics and has a considerable effect on how they behave and perform their jobs.

a \textit{Meaningfulness and work engagement}

The Me dimension shows a statistically significant positive correlation (strong effect) with the WE score. Since WE is described as a persistent and pervasive affective-cognitive state, the architects of this construct acknowledge that the emotional evaluation of situations as meaningful will influence the degree to which a person experiences the positive, fulfilling, work-related state of mind referred to as WE. This includes all three subdimensions of the WE construct, namely vigour, dedication and absorption. This is a general mindset, not focused on any particular object, event, individual or behaviour.

A low Me score is indicative of a situation in which, the female academic is unable to find meaning in her work and therefore does not experience WE. Exhaustion, disillusionment, frustration, distancings and eventual apathy develop towards the academic profession.

b \textit{Meaningfulness and vigour}

The Me dimension has a statistically significant positive correlation (strong effect) with the Vi score. The high correlation between the emotional subdimension (Me) of SOC and the cognitive subdimension Vi of WE is noteworthy. This implies that a positive emotional appraisal of a job being meaningful, will have a positive effect on the female’s cognitive understanding of the situation. The female academic who perceives her job to be meaningful and important, will invest a lot of energy and effort in the job. She will be mentally resilient while working and
persistent even when faced with difficulties such as large student numbers, a lack of funding and the absence of promotion opportunities.

In the opposite situation, where a low Me is presented, the female academic will feel that she is reduced to being an object. When she believes that the institution of higher education or management is indifferent to what she does, her job becomes devoid of meaning. These female academics will become mentally and physically exhausted and go through progressive phases of disillusionment with the academic profession.

c Meaningfulness and dedication

The Me dimension has a statistically significant positive correlation (strong effect) with the De score. The norms and values of these employees correspond with those of the organisation. They are therefore able to find meaning in their work. These female academics are enthusiastic, dedicated and proud of their jobs. They therefore realise their personal and existential goals. This generates positive feedback which, in turn, will have a positive effect on these academics’ emotional appraisal of their job as meaningful.

In the opposite situation, where a low Me presents, the female academic will be unable to find meaning or significance in her job. Her enthusiasm for the academic profession will dwindle and be replaced by frustration and apathy. She will actively try to distance herself from the job, students and colleagues in an effort to protect herself from further disappointment.
- Significant correlations including subdimensions of BO and WE

Figure 6.7

*Significant correlations between the subdimensions of BO and WE*

The extremely strong negative correlation between BO and WE is clear in figure 6.7.
- Practically significant correlations with a medium strength effect (lines indicated in blue):

a. Exhaustion and work engagement

The Ex dimension has a statistically significant and practically negative correlation (medium effect) with the total WE score. Academics scoring high on Ex are likely to shut down and become apathetic towards the job. They will shirk their responsibilities, seeking the path of least resistance. There will be a decline in the quality and quantity of the work they produce. They will thus not experience the positive, fulfilling, work-related state of mind, WE, which is characterised by Vi, De and Ab. According to Blaxter et al., (1998), the academic environment makes academic personnel particularly prone to Ex. Increasing lecturer to student ratios, administrative duties, the pressure to publish and administrative demands may quickly and unexpectedly lead to Ex. Increased psychosomatic complaints, sick absences and turnover are the result of severe Ex.

However, a low Ex score is associated with high WE, a persistent, pervasive affective-cognitive, positive, fulfilling, work-related orientation. The type of Ex that the engaged academic experiences is different from the type of Ex that the burnt-out individual might experience. It can be described as “tired, but satisfied”. Creativity, commitment and optimism characterise the energetic, highly engaged employee.

b. Exhaustion and absorption

The Ex dimension has a statistically significant and practically negative correlation (medium effect) with the Ab score. It is extremely difficult for the academic who feels drained, used up and depleted (high Ex) to concentrate, focus and be completely involved in her work. Increased Ex leads to
procrastination, an increase in mistakes, irritability and an inability to concentrate, creating a negative growth spiral and depleting the academic's ability to enjoy her job.

However, a low Ex score is associated with high feelings of Ab in the female academic. These academics get “carried away”, are challenged by their job and forget about everything else while working. They experience a happy optimal state of work experience.

c Reduced professional efficacy and absorption

The RPE dimension shows a statistically and practically significant negative correlation (medium effect) with the Ab score. RPE implies the tendency to evaluate one’s work negatively. The academic believes that she is incompetent and unable to meet the essential demands of job performance. Behavioural symptoms such as complaining, sick absences and an inability to make decisions present. As this sense of inadequacy grows, the female academic's Ab with the job declines. She will not be able to concentrate on her work and will start to make silly mistakes. In general, she ultimately starts to experience a sense of being overwhelmed by the job demands.

Low RPE means that feelings of PE are intact. The female academic will thus feel able to meet students’ needs and satisfy essential demands of job performance. This is linked to high Ab feelings, characterised by concentrating fully and being happily engrossed in her work, to the extent that time passes quickly and she will have difficulty detaching herself from work. Job satisfaction, organisational commitment and low turnover intention characterise the female academic who presents with low RPE and high Ab scores.
- Practically significant correlations with a strong strength effect (lines indicated in green)

a  Burnout and vigour

The BO dimension shows a statistically and practically significant negative correlation (strong effect) with the Vi score. A high BO score implies that the academic will score low on Vi, and vice versa. The female academic who experiences BO symptoms such as helplessness, hopelessness, powerlessness, a loss of energy, depletion, debilitation, fatigue, concern, low trust and low interest is not expected to feel energetic and vigorous in her job. She will simply not have the mental or physical reserves to invest effort or time in her work.

On the other side of the continuum, a female academic who experiences low levels of BO, will experience high levels of Vi. She will exhibit high levels of energy and mental resilience while working, be willing to invest effort in her work, and persist even in difficult times. A positive organisational attitude, self-efficacy and mental health create a gain spiral, leading to rewards that will energise her afresh and foster continued work performance.

It is noteworthy that the last three correlations with a strong effect all include the RPE subdimension of BO. Hence it is evident that RPE plays a significant role in this target group of female academics.

b  Reduced professional efficacy and work engagement

The RPE dimension shows a statistically and practically significant negative correlation (strong effect) with the WE score. The intense workload that the academic experiences, coupled with the complexity and high demand for
performance creates a vulnerability to evaluate her efforts negatively. Soon the academic believes that she is incapable of achieving her job objectives, her professional self-esteem suffers and she finds it impossible to experience engagement with her work. Negativity diminishes the potential for work to be engaging.

Low RPE means that feelings of PE are present and acceptable. According to Schaufeli and Bakker (2003), self-efficacy breeds WE. The female academic feels capable of meeting students' needs and satisfying essential elements of job performance. This is linked to high WE feelings, characterised by the perception of doing enjoyable work, building expertise, having the capacity to set priorities for day-to-day work, selecting the appropriate strategies to do the work and deciding how best to allocate resources. These decisions are central to being a professional (Buitendag & Van Zyl, 2004; Maslach & Leiter, 1997).

c Reduced professional efficacy and vigour

The RPE dimension shows a statistically and practically significant negative correlation (strong effect) with the Vi score. This means that the female academic who feels that she is ineffective at her job, will not have the energy to invest a lot of time and effort in it. Since this reduces the chance of receiving positive feedback and rewards on the job, a downward spiral is created, leading to the academic becoming tired, feeling used up, drained and doubting her abilities as a professional employee.

Low RPE means that feelings of PE are intact. The female academic will meet students' needs and satisfy essential elements of job performance. These academics can cope effectively with job stress and are bursting with energy. Schaufeli and Bakker (2003) conclude that a typical engaged employee has a sense of energetic and effective connection with her work activities. She therefore sees herself as being able to deal with the demands of the job (low
RPE). These employees are optimistic, trust themselves and show initiative on the job and in their private lives.

d Reduced professional efficacy and dedication

The RPE dimension shows a statistically and practically significant negative correlation (strong effect) with the De score. The female academic with a high RPE score will feel incompetent and as a result she will start to shirk her responsibilities, avoid new challenges, distance herself from the work and become less empathetic with students and co-workers.

Low RPE correlates with high De, which means that the academic will strongly identify with her work, because it is experienced as meaningful, inspiring and challenging. Proactive behaviour and the incentive to learn are typical of these employees.

- Practically significant correlations with an extremely strong effect (lines indicated in red):

The first noticeably strong correlation was found between the total BO and total WE score, discussed in section. 6.4.3. Regarding the subdimension of WE it is obvious that the De subdimension plays a significant role in terms of the correlations presented in this target group.

a Burnout and dedication

The BO dimension shows a statistically and practically significant negative correlation (extremely strong effect) with the De score. Hence a high BO score implies that the academic will score low on De, and vice versa. The female academic who presents with BO symptoms, such as a loss of energy, depletion, debilitation, fatigue, concern, trust, interest will not be dedicated to her job.
Motivational symptoms characteristic of BO (Cilliers, 2002) include low levels of intrinsic motivation, idealism, increased disillusionment, disappointment and resignation. This deeply rooted motivational crisis is expressed as a loss of genuine interest in students, indifference and discouragement. The female academic with these feelings will feel that she is insignificant in the profession and the institution of higher education (her employer) and management. A sense of futility and hopelessness will thus develop.

On the other side of the continuum, low levels of BO in female academics are strongly associated with high levels of De, characterised by strong feelings of identification with the academic job, because it is viewed as meaningful, inspiring and challenging. The academic will feel inspired by her work and will enthusiastically look for new challenges, say, in the form of new research projects, developing new curricula or using innovative teaching and learning strategies. A sense of pride in the profession and the realisation of personal goals and existential goals are indicative. She is thus successful in creating positive “growth spirals” (Schaufeli & Bakker, 2003).

b. Cynicism and dedication

The Cy dimension shows a statistically and practically significant negative correlation (an extremely strong effect) with the De score. In Maslach and Leiter (1997), Cy and De are conceptualised as the exact opposites of each other (section 3.2). It is noteworthy that of all the subdimensions of BO and WE, Cy and De were the only ones with a noticeably strong negative correlation, confirming to a certain extent Maslach and Leiter’s (1997) view on at least one of the subdimensions of BO and WE. High Cy scores means that the female academic is likely to experience disillusionment and cynicism towards her work. A feeling of total indifference towards the work she once felt passionate about is likely to be evident. Cynicism is often a coping response to job overload. Negative attitudes, a loss of empathy, coldness, oversensitivity and feelings of
paranoia (e.g. that management are out to "get" her) manifests. These academics therefore minimise their involvement with students and colleagues in an attempt to protect themselves against further exhaustion and disappointment. There are no signs of the positive commitment, creativity, inspiration or complete dedication and involvement in the academic career, which would be characteristic of De.

On the other side of the continuum, low levels of Cy in female academics are strongly associated with high levels of De. These academics are fully committed to the tertiary education institution that employs them. They work hard at attaining their professional goals, feel that the organisation trusts them with valuable resources and accept responsibility to use these in the best possible way.

6.4.4 Conclusion

When integrating the correlations between SOC, BO and WE, it is interesting that the emotional component of the SOC (Me) plays a significant role in moderating the experience of BO (figure 6.8). It is evident from this research that when female academics are unable to make sense of their world at an emotional level (low Me), they become vulnerable to the development of high levels of Ex, Cy and RPE.

Because the entire sample used in this study was female, it is possible that the emotional component of the SOC (Me) fulfils a more significant role than it might in a mixed sample, comprising males and females or only males.
From the empirical investigation it is evident that a Me, Cy and De triangle is specifically strongly manifested in the correlations. In figure 6.9, an effort was made to represent this relationship graphically.
The strong correlation illustrating the interaction between the Me subdimension of SOC (representing the emotional dimension), Cy (BO) and De (WE) in this target group of female academics is extracted and highlighted.

In terms of the hypothesis of this study, as based on the empirical evidence, one may conclude that there is strong support for the hypothesis. A strong, practically significant relationship between Bo, WE and SOC, has been empirically proven.

6.5 REGRESSION

A regression analysis was performed on the data. On the basis of the literature review and evidence collected in previous studies, regarding the relationship between BO and SOC and the effect of SOC on BO, a judgement decision was made to perform a regression analysis on BO.
6.5.1 Reporting of results

The results of the regression analysis are presented in tables 6.23 and 6.24.

**Table 6.23**

*Model summary of regression equation to predict BO*

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R square</th>
<th>Std. Error of the estimate</th>
<th>Anova F-value</th>
<th>Anova p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictors: (Constant), De, Vi, Me, Ab</td>
<td>0.781(d)</td>
<td>0.610</td>
<td>0.602</td>
<td>10.07</td>
<td>71.2</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Table 6.24**

*Regression coefficients of the regression equation to predict BO*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised coefficients</th>
<th>Standardised coefficients</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Std. error</td>
<td>Beta</td>
<td>T</td>
</tr>
<tr>
<td>(Constant)</td>
<td>86.827</td>
<td>4.309</td>
<td></td>
<td></td>
<td>20.151</td>
</tr>
<tr>
<td>De</td>
<td>-1.567</td>
<td>0.231</td>
<td>-0.593</td>
<td>-6.778</td>
<td>0.000</td>
</tr>
<tr>
<td>Vi</td>
<td>-0.859</td>
<td>0.249</td>
<td>-0.269</td>
<td>-3.455</td>
<td>0.001</td>
</tr>
<tr>
<td>Me</td>
<td>-0.317</td>
<td>0.120</td>
<td>-0.152</td>
<td>-2.643</td>
<td>0.009</td>
</tr>
<tr>
<td>Ab</td>
<td>0.486</td>
<td>0.193</td>
<td>0.187</td>
<td>2.514</td>
<td>0.013</td>
</tr>
</tbody>
</table>
6.5.2 Analysis of results

Table 6.23 shows that that 60% of BO can be explained by SOC and WE. Three of the UWES subdimensions and one of the SOC subdimensions were found to be significant predictors of BO. The De ($\beta=0.59; t=6.78; p=0.000$), Vi ($\beta=0.27; t=3.46; p=0.001$), Ab ($\beta=0.19; t=2.5; p=0.013$) and Me ($\beta=0.15; t=2.64; p=0.009$) subdimensions together accounted for 60% of the variance in BO. The remaining subdimensions did not contribute significantly to the BO model.

6.5.3 Interpretation of results

The empirical research of this study proved that WE and SOC explain 60% of the variance in BO in female academics.

Three of the UWES subdimensions and one of the SOC subdimensions were found to be significant predictors of BO. The De, Vi, Ab and Me subdimensions together accounted for 60% of the variance in BO. The remaining subdimensions did not contribute significantly to the BO model.

Again the Me dimension of SOC proved to play a vital role in the avoidance of BO in this target group. The academic who presents with a high Me, will emotionally assess her work situation as coherent. Hence she views her academic job situation as making sense and being ordered and predictable. From the regression analysis it is noteworthy that this “emotional assessment” of the female academic plays a significant role in the development of BO.

If she fails to make sense of her life at an emotional level (low Me), her motivation dwindles. She starts to appraise all new challenges in her work merely as new burdens to be avoided at all cost. This academic feels that she is being objectified by management and the tertiary education institution that employs her is indifferent to her personal and career goals. The academic in this frame of
mind experiences her world as devoid of meaning and becomes vulnerable to the development of BO. The emotional symptoms of BO include feelings of helplessness, hopelessness, anxiety, tearfulness and a depressed mood. Sudden outbursts of temper, anger, frustration, paranoia, feeling that her peers are out to “get” her, oversensitivity and undefined fears and tension, all present in this female academic (Belcastro & Hayes, 1984; Cilliers, 2002; Freudenberger, 1982).

The three subdimensions of WE, namely Vi, De and Ab all contribute significantly to the development of BO. The female academic scoring high on these dimensions will be highly involved, energetic, inspired, creative, able to adjust to changing environments, empathetic and happily immersed in her job. She will be confident that she can do her job well and will create her own recognition and rewards. She will not present with psychosomatic complaints or neurotic thoughts. Hence the female academic who scores highly on Vi, De and Ab is indicative of a person that is not vulnerable to the development of BO. Vi, De and Ab will act as a buffer against the development of negative symptoms of BO. These academics are able to cope effectively with difficult situations and perceive potential stressors as benign.

Low levels of Vi, De and Ab are indicative of a person who is likely to manifest with the negative BO symptoms, including physical symptoms (headaches, fatigue, lowered resistance, sleeplessness), cognitive symptoms (rigidity in thinking, intellectualisation, forgetfulness), emotional symptoms (oversensitivity, frustration, aggressiveness) and behavioural symptoms (complaining, absenteeism, misuse of alcohol and drugs) to mention but a few (Cedoline, 1982; Maslach & Leiter, 1997; Shirom et al., 2005). The regression equation is graphically represented in figure 6.10.

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6.5.4 Conclusion

The WE, De, Vi, Ab, and Me (SOC subdimension) together accounted for 60% of the variance in BO. The remaining subdimensions did not contribute significantly to the BO model.
6.6 THE EFFECT OF DIFFERENT BIOGRAPHICAL VARIABLES

The effect of biographical variables on the manifestation of BO, WE and SOC in the sample of female academics is explored in the following section.

6.6.1 Age

In this section the effect of differences in age on the BO, WE and SOC is explored.

6.6.1.1 Reporting of results

A summary of the results of Pearson’s correlation matrix for the number of years employed is provided below in table 6.25.
Table 6.25

*Pearson’s correlation matrix for age on the total scale and subdimensions of the MBI, UWES and SOC*

<table>
<thead>
<tr>
<th>Scales</th>
<th>Exact age</th>
<th>Pearson</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BO</td>
<td>0.054</td>
<td>0.054</td>
<td>0.464</td>
</tr>
<tr>
<td>Ex</td>
<td>0.113</td>
<td>0.113</td>
<td>0.125</td>
</tr>
<tr>
<td>Cy</td>
<td>0.072</td>
<td>0.072</td>
<td>0.326</td>
</tr>
<tr>
<td>RPE</td>
<td>-0.098</td>
<td>-0.098</td>
<td>0.182</td>
</tr>
<tr>
<td>WE</td>
<td>0.132</td>
<td>0.132</td>
<td>0.071</td>
</tr>
<tr>
<td>Vi</td>
<td>0.159</td>
<td>0.159</td>
<td>0.030</td>
</tr>
<tr>
<td>De</td>
<td>0.054</td>
<td>0.054</td>
<td>0.461</td>
</tr>
<tr>
<td>Ab</td>
<td>0.195</td>
<td>0.195</td>
<td>0.007</td>
</tr>
<tr>
<td>SOC</td>
<td>0.113</td>
<td>0.113</td>
<td>0.124</td>
</tr>
<tr>
<td>Co</td>
<td>0.182</td>
<td>0.182</td>
<td>0.012</td>
</tr>
<tr>
<td>Ma</td>
<td>0.050</td>
<td>0.050</td>
<td>0.499</td>
</tr>
<tr>
<td>Me</td>
<td>0.036</td>
<td>0.036</td>
<td>0.621</td>
</tr>
</tbody>
</table>

6.6.1.2 Analysis of results

No significant relationship was found between age and the total scores of MBI (r=0.05, p=0.64), UWES (r=0.13, p=0.07) or SOC (r=0.11, p=0.12). However,
differences were found between age and two of the UWES subdimensions, namely Vi (r=0.16, p=0.03) and Ab (r=0.2, p=0.007), as well as between age and one of the subdimensions of the SOC, namely Co (r=0.18, p=0.012). Scabufeli and Bakker (2003) calculated correlation coefficients as follows: total UWES r=0.14; Vi r=0.05; De r=0.14 and Ab r=0.17.

6.6.1.3 Interpretation of results

These correlations are all positive, which indicates that the greater the score on one variable, the greater the score on the other variable will be. The implications are that the older the female academic is, the higher her scores on Co, Vi and Ab will be. It should be noted that although these correlations are significant, the size of the r-value (size of the correlation) is small. According to the "effect size criteria", r=0.1 to 0.29 is considered a small effect (see chapter five for a detailed explanation).

Labour market trends indicate that older workers play an increasingly crucial role in the workforce today (Eichar, Norland, Brady & Fortinsky, 1991; Theodore & Lloyd, 2000). The work orientation of older female academics is thus of theoretical and practical interest. Clark, Oswald and Warr (1996) reported higher levels of job satisfaction in workers over 40 and suggest that this is because of increased coping capacity, greater stability and ego strength which comes with age. Theodore and Lloyd (2000) found that as workers age, they become more inwardly focused and invest their efforts in the enjoyment of the process, the quality of the experience and emotional connectedness. Schaufeli (2004) also observed a weak positive relationship between WE and an increase in age. Oshagbemi (1997) found that women tend to be slightly more satisfied with their academic careers after the age of 45, than their male colleagues.

Because the effect sizes are small, caution has to be exercised when making any interpretations on the basis of the results of this study. In the light of this, one
would expect that the older the female academic is, the more vigorous, energetic and resilient she will be while working. Her willingness to invest effort in her work, and to persist even when she finds it difficult, will increase with age. There is a positive relationship between being an older female academic and being absorbed, fully concentrated and happily engrossed in her work. Regarding her score on the SOC sub-dimension Co, her Co score will be higher with increased age. This implies that her understanding of the internal and external environments as ordered and consistent, will be better than those of younger female academics. It is arguable that in the turbulent higher education environment in South Africa, it is critical for the academic to have the ability to make cognitive sense of the environment.

6.6.1.4 Conclusion

No practically significant correlation could be found between any of the BO subdimensions and age. There is a small correlation (thus some indication) that age is positively correlated with Vi, Ab (WE subdimensions) and Co (SOC subdimension). However, caution should be exercised when interpreting this, because the correlations are weak.

6.6.2 Number of years employed

This section explores the effect of differences in the number of years employed on the BO, WE and SOC.

6.6.2.1 Reporting of results

A summary of the results of Pearson’s correlation matrix for the number of years employed is provided below in table 6.26.
## Table 6.26

*Pearson’s correlation matrix for number of years employed on the total scale and subdimensions of the MBI, UWES and SOC*

<table>
<thead>
<tr>
<th>Scales</th>
<th>Exact age</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BO</td>
<td>Pearson</td>
<td>0.100</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.172</td>
</tr>
<tr>
<td>Ex</td>
<td>Pearson</td>
<td>0.127</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.084</td>
</tr>
<tr>
<td>Cy</td>
<td>Pearson</td>
<td>0.137</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.062</td>
</tr>
<tr>
<td>RPE</td>
<td>Pearson</td>
<td>-0.068</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.353</td>
</tr>
<tr>
<td>WE</td>
<td>Pearson</td>
<td>0.033</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.653</td>
</tr>
<tr>
<td>Vi</td>
<td>Pearson</td>
<td>0.055</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.454</td>
</tr>
<tr>
<td>De</td>
<td>Pearson</td>
<td>-0.020</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.789</td>
</tr>
<tr>
<td>Ab</td>
<td>Pearson</td>
<td>0.092</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.211</td>
</tr>
<tr>
<td>SOC</td>
<td>Pearson</td>
<td>0.117</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.110</td>
</tr>
<tr>
<td>Co</td>
<td>Pearson</td>
<td>0.202</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.005</td>
</tr>
<tr>
<td>Ma</td>
<td>Pearson</td>
<td>0.031</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.672</td>
</tr>
<tr>
<td>Me</td>
<td>Pearson</td>
<td>0.046</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.528</td>
</tr>
</tbody>
</table>

### 6.6.2.2 Analysis of results

The relationship between number of years employed as a continuous variable and the total scores, as well as the subdimensions of the MBI, UWES and SOC,
was examined using Pearson’s product-moment correlation coefficient. No significant effect was found between number of years employed and the total scales of MBI (r=0.1, p=0.17), UWES (r=0.03, p=0.65) or SOC (r=0.12, p=0.11). The analysis, however, revealed that employment (experience) did have an influence (effect) on one of the subdimensions of the SOC, namely Co (r=0.20, p=0.005).

6.6.2.3 Interpretation of results

A statistically significant correlation was found between the years of employment and one of the subdimensions of the SOC, namely Co. This correlation is positive and therefore an indication that the more years of experience a female academic has, the higher her Co score is likely to be. As the female academic becomes more experienced in her work, she will improve in her ability to perceive her internal and external environments as making cognitive sense.

Hickson and Oshagbemi (1999) studied the effect of age and work experience on the satisfaction of academics (male and female) with teaching and research. The surprising result of their research was that the number of years’ experience had a different effect on academic teaching staff from academic research staff. The job satisfaction for academic teaching staff declined with increased years of service, while the job satisfaction of the academic research staff increased with years of experience.

The correlation value of 0.2 obtained in this study, however, is still considered small- hence the need for careful interpretations.

6.6.2.4 Conclusion

Only one small correlation could be found, namely that the more years of experience the academic has, the greater her Co score will be.

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6.6.3 Population Groups

This section explores the differences between the BO, WE and SOC, for the different population groups.

6.6.3.1 Reporting of results

The results of the analysis into differences in the manifestation of the BO, WE and SOC for different population groups are presented in table 6.27.

Table 6.27

*Population group: means and standard deviations on the total scale and subdimensions of the UWES, MBI and SOC (n = 187)*

<table>
<thead>
<tr>
<th></th>
<th>T-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BO</td>
<td>0.280</td>
<td>0.597</td>
</tr>
<tr>
<td>Ex</td>
<td>0.419</td>
<td>0.518</td>
</tr>
<tr>
<td>Cy</td>
<td>0.076</td>
<td>0.783</td>
</tr>
<tr>
<td>RPE</td>
<td>0.326</td>
<td>0.569</td>
</tr>
<tr>
<td>WE</td>
<td>2.809</td>
<td>0.095</td>
</tr>
<tr>
<td>Vi</td>
<td>2.952</td>
<td>0.087</td>
</tr>
<tr>
<td>De</td>
<td>1.365</td>
<td>0.244</td>
</tr>
<tr>
<td>Ab</td>
<td>0.604</td>
<td>0.438</td>
</tr>
<tr>
<td>SOC</td>
<td>0.042</td>
<td>0.838</td>
</tr>
<tr>
<td>Co</td>
<td>0.047</td>
<td>0.828</td>
</tr>
<tr>
<td>Ma</td>
<td>0.567</td>
<td>0.452</td>
</tr>
<tr>
<td>Me</td>
<td>0.388</td>
<td>0.534</td>
</tr>
</tbody>
</table>

6.6.3.2 Analysis of results

An independent samples t-test was conducted to compare the differences in the mean scores between black and white female academics on the total scales and subdimensions of the MBI, UWES and SOC. Owing to the statistically
insignificant number of respondents in the brown and Asian groups, these groups were excluded from the analysis.

Table 6.27 indicates that none of the p-values is smaller than 0.05. Hence there are no significant differences on any of the total scales or subdimensions between the two population groups.

6.6.3.3 Interpretation of results

Since no significant differences could be found on any of the total scores or subdimensions of the MBI, UWES and SOC, it is accepted that the female academics from different population groups do not exhibit specific BO, WE or SOC patterns that differ from the other groups. The results of this study can thus be generalised across the various population groups.

6.6.3.4 Conclusion

The female academics from the different population groups in South Africa show similar patterns in the manifestation of BO, WE and SOC scores.

6.6.4 Marital status

This section looks at the differences in the BO, WE and SOC levels for varying marital status, provided in Table 6.28.

6.6.4.1 Reporting of results

A summary of the results of the one-way analysis of variance (Anova) for BO, WE and SOC across different marital status is provided.
<table>
<thead>
<tr>
<th>Marital status group</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>F-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>39,49</td>
<td>14,85</td>
<td>2,746</td>
<td>0,067</td>
</tr>
<tr>
<td>Relationship</td>
<td>35,08</td>
<td>15,30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced etc.</td>
<td>42,59</td>
<td>19,87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>15,63</td>
<td>7,20</td>
<td>1,992</td>
<td>0,139</td>
</tr>
<tr>
<td>Relationship</td>
<td>14,08</td>
<td>7,20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced etc.</td>
<td>17,27</td>
<td>9,69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>14,74</td>
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<td>6,32</td>
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<td>5,01</td>
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<td>6,78</td>
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<td>7,91</td>
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<td>8,97</td>
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<td>-----</td>
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<tr>
<td>Ma</td>
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<td>43,45</td>
<td>7,64</td>
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<tr>
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<td>38,00</td>
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6.6.4.2 Analysis of results

Groups with different marital status were compared for differences in BO, WE and a SOC using a one-way analysis of variance (Anova). The respondents were divided into three groups on the basis of their relationship status: group 1 consisted of single respondents (n=35), group 2 of respondents in a permanent relationship, that is, either married, living together or engaged (n=130), and group 3 respondents who were divorced, widowed or separated (n=22). The means of the groups were compared on the scores of the total scale and subdimensions of the MBI, UWES and SOC.

There was a statistically significant difference between the three groups at the p<0,05 level on the SOC total scale [F(2,184)=4,90; p=0,01], as well as on Co [F(2,184)=3,62; p=0,03] and Ma [F(2,184)=4,15; p=0,02]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for the divorced/separated/widowed group (M=125,86; SD=20,85) was significantly different from the group consisting of females in a relationship (M=137,08; SD=19,24) on the SOC total scale. On the Co subdimension, the relationship group (M=47,52; SD=8,18) was found to be significantly different from the mean scores for single respondents (M=43,66; SD=0,99). On the Ma subdimension, those in a relationship (M=46,34; SD=7,13) were found to be significantly different from the divorced/separated/widowed group (M=43,45; SD=7,64). No significant differences were evident on the total scale or subdimensions of the MBI and the UWES between the three groups.
6.6.4.3 Interpretation of results

It was found that respondents in group 2, who were all in a permanent relationship (married, living together or engaged to be married), scored significantly higher on the total SOC scale, and on the subdimensions of Co and Ma, than the other two groups. The score for the female academics in a permanent relationship compares extremely well with the scores of other samples in South Africa and internationally. Female academics in a permanent relationship will perceive their internal and external environments as making cognitive sense in being structured, predictable and explicable. They are also likely to believe that resources are available to meet the job demands and view these demands as challenges as worthy of investment and engagement. The females in a permanent relationship are more likely to feel energetic, skilled and able to cope with difficult situations, than females in the single, divorced, separated and widowed groups.

6.6.4.4 Conclusion

It would seem that being in a permanent relationship may indicate higher levels of SOC, Co and Ma.

6.6.5 Level of education

The influence of a female academic's level of education on the BO, WE and SOC levels is explored in this section.

6.6.5.1 Reporting of results

A summary of the results of the one-way analysis of variance (Anova) for BO, WE and SOC, across different levels of education, is provided in table 6.29.
Table 6.29

Level of education: means and standard deviations on the total scale and subdimensions of the UWES, MBI and SOC (n = 187)

<table>
<thead>
<tr>
<th>Marital status group</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>F-value</th>
<th>p-value</th>
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<td>15,66</td>
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<td>7,94</td>
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<td>5,69</td>
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<td>Marital status group</td>
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<td>26.56</td>
<td>6.91</td>
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<td></td>
</tr>
</tbody>
</table>

SOC
| National diploma/B degree | 139.18 | 17.02 | 1.595 | 0.192 |
| B Tech degree/B honours  | 131.08 | 16.30 |       |       |
| Master's degree (M+5)    | 132.24 | 20.78 |       |       |
| Doctoral degree (M+6)    | 138.14 | 22.08 |       |       |

Co
| National diploma/B degree | 47.73  | 7.21  | 1.856 | 0.139 |
| B Tech degree/B honours  | 44.18  | 7.08  |       |       |
| Master's degree (M+5)    | 46.56  | 10.05 |       |       |
| Doctoral degree (M+6)    | 47.96  | 7.67  |       |       |

Ma
| National diploma/B degree | 48.73  | 7.14  | 0.657 | 0.579 |
| B Tech degree/B honours  | 47.31  | 6.55  |       |       |
| Master's degree (M+5)    | 46.74  | 6.98  |       |       |
| Doctoral degree (M+6)    | 48.74  | 11.47 |       |       |

Me
| National diploma/B degree | 42.73  | 7.13  | 1.636 | 0.183 |
| B Tech degree/B honours  | 39.59  | 6.38  |       |       |
| Master's degree (M+5)    | 38.94  | 8.06  |       |       |
| Doctoral degree (M+6)    | 41.44  | 8.09  |       |       |

6.6.5.2 Analysis of results

There was a statistically significant difference between the four groups at the p<0.05 level on the Vi subdimension of the UWES [F(3,183)=2.96; p=0.03]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for respondents with a master's degree (M=19.14; SD=4.79) was significantly different from respondents with a doctoral degree (M=21.65; SD=5.37).

6.6.5.3 Interpretation of results

There was only one statistically significant result for the analysis of level of education, namely for the Vi subdimension of the UWES. The implication of this
result is that a female academic who has completed her doctoral degree is significantly more energetic, resilient while working, willing to invest time in her work and able to persist in her work, even in the face of difficulty.

No significant difference was found on any of the remaining scales of the UWES or the total scale or subdimensions of the MBI and the SOC, between any of the four groups.

6.6.5.4 Conclusion

It is expected that female academics with a doctoral degree will show high levels of energy and resilience.

6.6.6 Synthesis of the biographical variables

A short synthesis of the significant findings in terms of the biographical variables will be provided in this section.

6.6.6.1 Reporting of results

The significant findings in terms of the various demographical variables, BO, WE and SOC will be illustrated below. Table 6.30 provides a synthesis of the main findings.
Table 6.30

The most significant correlations between various biographical variables and the dimensions of BO, WE and SOC

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Marital status</th>
<th>Highest qualification</th>
<th>Years employed</th>
</tr>
</thead>
</table>
| Vi (WE subdimension) | + $r=0.16$  
|                   | $P=0.03$      | + $r=0.034$  
|                  |                | $f=2.963$          |                |
| Ab (WE subdimension) | + $r=0.2$  
|                   | $p=0.007$      |                      |                |
| Total SOC        | + $r=0.18$  
|                  | $p=0.005$      | + $r=0.20$  
|                  |                | $f=4.903$          | $p=0.008$      |
| Co (SOC subdimension) | + $r=0.18$  
|                   | $p=0.005$      | + $r=0.20$  
|                  |                | $f=3.620$          | $p=0.029$      |
| Ma (SOC subdimension) | + $r=0.18$  
|                   | $p=0.005$      | + $r=0.20$  
|                  |                | $f=4.148$          | $p=0.017$      |

No significant differences were found between BO (or any of its subdimensions) and any of the demographical variables.

6.6.6.2 Analysis of results

In terms of the manifestation of Vi, age and the level of completed qualification will thus have a positive effect. On the WE dimension of Ab, age, is also
expected to have a positive effect. This implies that the older the female academic is, the higher her Ab level is expected to be.

Regarding the total SOC score, it was found that the female academic’s marital status has important implications. The respondents in a permanent relationship scored higher in the total SOC score Co and Ma, than the respondents from other groups. The Co dimension of the SOC shows different patterns of manifestation for age, marital status and years employed. The older the employee, whether she is in a permanent relationship and the number of years’ experience is associated with higher levels of SOC. Lastly, the Ma dimension of the SOC is positively related to being in a permanent relationship. Female academics who are married, living together or engaged, score higher on Ma than females who are single, divorced, separated or widowed. The values calculated for marital status are significant, indicating that this biographical variable may play a significant role in the manifestation of the total SOC, Co and Ma.

6.6.6.3 Interpretation of results

Because two biographical variables (age and having a doctoral degree) correlated significantly with some of the WE dimensions, these correlations are represented graphically in figure 6.11. These correlations were all positive.
Figure 6.11

The WE dimensions and various biographical variables

Figure 6.12, depicts the most significant correlations between the dimensions of the SOC and various demographical variables. Significant correlations were found with age, marital status, and number of years employed. All of the correlations were in a positive direction.
6.6.6.4 Conclusion

The different manifestation patterns of Vi and Ab, as well as total SOC, differ according to certain biographical variables, namely age, marital status, highest completed qualification and years experience.

6.7 INTEGRATION OF THE RESULTS

This section integrates the significant findings of the empirical study (chapters 5 and 6) with the findings of the literature study (chapters 2, 3 and 4).
Schaufeli (2004) offers a comprehensive definition of BO, namely that it is a persistent, negative, work-related state of mind in "normal" individuals that is primarily characterised by Ex, which is accompanied by distress, a sense of reduced competence, decreased motivation and the development of dysfunctional attitudes at work.

On the basis of the BO model of Maslach and Jackson (1986) and the results of the empirical study, it was determined that the sample manifested with average levels of Ex, coupled with strong indications of increased Cy and moderate indications for an increase in their sense of RPE. Hence the typical female academic will experience average levels of physical, emotional and mental Ex, associated with average feelings of being tired, drained and "used up".

In the literature study it was established that Cy is believed to develop as a result of unreasonable job and interpersonal demands. RPE is thought to develop as a result of the absence of the necessary job resources. It is deduced that both unreasonably high job demands and an absence of job resources manifested as possible contributors to BO in female academics.

The typical female academic in this study presented with high levels of Cy, implying negative, detached feelings towards, say, students, colleagues and work in general. This tendency is a "red flag" signal that should not be ignored by health professionals and the management of tertiary institutions in South Africa. In the phase model of BO, proposed by Golembiewski and Munzenrider (1988), Cy (depersonalisation in the original MBI) initiates the BO process. The female academic's high score on Cy in this study points to the interpersonal dimension of BO, and also indicates a negative, callous and detached response to various other aspects of the job. The phase model maintains that depersonalisation is first experienced because a certain degree of professional detachment is often functional in dealing with others more objectively (Golembiewski & Munzenrider, 1988; Golembiewski et al., 1996). It is believed that because of rising class sizes
and an increase in the need of students for personal guidance, contact and communication, female academics are relying heavily on this state of “professional detachment”, in order to protect themselves from feelings of depletion. Detachment becomes depersonalisation or Cy, impairing the ability to develop personal relationships (Basson, 2002). The particularly high degree of Cy present, is an indication that the next phase, in which the development of personal relationships is impaired, may be a problem in this target group of female academics. The inability to develop and maintain interpersonal relationships could lead to impaired coping, because social support from colleagues, friends and family members is not optimally utilised when interpersonal relationships are strained.

This is an indication that female academics will probably develop more advanced stages of BO.

Since the score for RPE of the female academics shows a somewhat increased tendency, it is noteworthy that their self-appraisal in terms of their own ability to cope with the demands of their jobs shows negative signs. Because the sense of PE is reduced, self-evaluation becomes more negative and feelings of competence, productivity and achievement at work dwindle.

A factor of concern is that BO in its earlier stages is often overlooked or mistaken for simple fatigue or decreased energy levels. Because Ex levels for this sample are average, it is possible that the signs of BO that are manifested (Cy and RPE), may also be overlooked or ignored by management in these tertiary education institutions.

In terms of the manifestation of WE in the sample of female academics, measured against the norms provided by Schaufeli and Bakker (2003), the scores for total WE, Vi, De and Ab were all just above average, indicating a positive trend. Female academics are thus generally fairly energetic, mentally
resilient, strongly involved in their jobs, enthusiastic, proud, inspired and happily engrossed in their work. Compared with a group of Dutch managers, these scores were fairly high, with the exception of Ab, which was marginally lower. The manifestation of WE in female academics, however, was slightly lower than the scores for physicians in the Dutch data base. The female academics’ scores were notably higher than the scores for the international police force.

Schaufeli and Bakker (2001) note that WE, and specifically “Vi”, are characterised by mental resilience and the willingness to invest effort in one’s work, even in the face of difficulty. This may explain why WE is manifested in the female academics studied, even though there are definite signs of BO (increased Cy and RPE) in the target group. The female academics invest effort in their work, even though difficulties are experienced in performing of these duties. These difficulties include decreasing resources to get the work done, as well as increasing demands by faculty, students and parents. These demands often take the form of rising lecturer-student ratios, increased demand for research outputs, exhausting interpersonal relationships with vast numbers of students and ever-increasing administrative duties. The role of mergers, unilateral changes in work conditions and the resultant lack of promotional opportunities, may also have a negative effect on the emotional wellness of the target group.

On the strength of these results, it is clear that there is not a perfectly negative correlation between BO and WE (or their respective subdimensions). The conviction of Schaufeli and Bakker (2001) that BO and WE should be measured independently as separate but related constructs is confirmed in this target group.

Since this study was conducted from a salutogenic paradigm, it is noteworthy that, from a positive psychological point of view, BO is redefined as an erosion of WE with the job (Maslach & Leiter, 1997). What started out as important, meaningful, and challenging work, becomes unpleasant, unfulfilling and
meaningless. Energy turns into Ex, involvement turns into Cy and efficacy turns into RPE. Institutions of higher education in South Africa are faced with this challenging scenario. From a preventive point of view, the danger exists that, if BO symptoms are not managed effectively and contained, academic work that may be viewed as important, meaningful and challenging, may soon become unpleasant to the females in this study. They may start to experience it as unfulfilling and meaningless. In the empirical study, it was established that, in this sample, involvement turned into Cy, with the associated negative symptoms.

Strümpfer (1990) conceptualises SOC as a habitual pattern of appraisal, which encompasses perception, memory, information processing and affect. In terms of SOC, the central construct of salutogenesis is portrayed in the dynamic feeling of trust that

- stimuli from the internal and external environments are structured, predictable and explainable
- resources are available to meet the demands of the stimuli
- demands are viewed as challenges worthy of being pursued and invested in (Antonovsky, 1987; Du Toit, 2002)

In terms of the total score for the SOC, the target group scored at 128.22, which is lower than the estimate of the mean value for the SOC (137), as calculated by Strümpfer and Wissing (1998). When compared to another all-female South African sample, consisting of working mothers (Herbst, 2006), the score was also lower than the 134.26 scored by the working mothers. Antorovsky (1991) found significantly lower scores in females than in males in nine studies and 11 other studies- the females had lower scores than the males, but not significantly so. Johnson (1992) confirms these findings and concurs that females generally score lower than males on SOC. Hence the scores calculated for the females in this study show a similar trend to what was found in other international and local studies.
Regarding the subdimensions, participants scored lower on the Ma and Me subdimensions than, say, a group of scientists and engineers tested in South Africa. A slightly higher score was achieved for the Co scale, which might indicate that the female academics do indeed understand their work situation and the demands placed on them, but feel that they are unable to manage their work situation. They also have difficulty understanding the meaning in their current situation. It is interesting to note that the working mothers showed a similar pattern, namely lower scores on Me.

An effective load balance, that is an under- or overload balance in life experience, provides the Ma component. In underload, refers to when there is not enough direction the individual is seldom called on to exercise his or her abilities or actualise his or her potential. Overload refers to the individual setting a pace too rapid for demanded development, never having enough time and energy to do everything or not having enough resources to do everything. The question is thus whether the female academics perceive the resources at their disposal as being adequate to meet the demands posed by the stimuli (Antonovsky, 1987; De Wet, 1998). On the basis of the empirical evidence from the MBI, the answer is probably “no”, which in turn has a negative effect on the Ma component of SOC.

Me can be described as an individual’s emotional assessment of situations as coherent and worthy of investment (Cloete & Stuart, 2003). It refers to the extent to which the individual feels that life also makes sense at an emotional rather than a cognitive level (Coetzee & Rothmann, 2004). This dimension represents the motivational element of SOC (Basson, 2002; Eriksson & Lindström, 2005). Since the Me score showed a decreased tendency, it confirmed that female academics struggle to make sense of their lives at an emotional level.

Considering the eight possible types of combinations that emerge when the Co, Ma and Me are dichotomised, Antonovsky (1987) claims to be able to predict possible future behaviour. He argues that high Co, combined with low Ma, leads
to a strong desire to change and is therefore highly unstable. The centrality of Me is seen in considering the two final types: If the respondents are high on Co, thus knowing the rules of the game and believing that the resources are at their disposal to play successfully, but without caring (type 5), they eventually start to fall behind in their understanding and lose their command of resources.

Antonovsky (1987) concludes that the three components of the SOC are of unequal centrality. The motivational component of Me seems crucial. Without it, being high on Co or Ma is likely to be temporary. The outcome predicted by Antonovsky in such a situation, is that the person might experience pressure to move away from her current situation. He includes the possibility that the person might experience pressure to move down from her current situation, because she continues to lose command of resources.

Strong support was found for the existence of a significant relationship between BO, WE and SOC in female academics. The empirical study revealed significant relationships between the scales and subdimensions of the MBI, UWES, and SOC. BO and WE, as well as BO and SOC, are negatively correlated. SOC, however, was positively correlated with the experience of WE. The implication is that a strong SOC will indeed act as a buffer against the development of the pathogenic state of BO. However, the converse is also true, in that a female academic with a low SOC will be vulnerable to the development of BO (Ex, Cy and a feeling of RPE). A strong SOC will help employees to understand stressors and regard them as manageable and meaningful. Hence, a strong SOC will moderate the effects of job stressors on Ex and contribute to the perception of professional efficacy of employees (Ortlepp, 1998; Steyn et al., 2004).

Testing whether WE would be positively correlated with a SOC, also received strong support because all the scales and subdimensions of the UWES and the SOC were found to be positively correlated with one another. A female academic
with a SOC will thus be much more likely to experience WE. This implies feelings of energy, resilience, persistence, enthusiasm and inspiration.

From the empirical results, the strength of the correlation between the Me component of the SOC and the BO dimension, Cy, draws attention. This is of particular significance for this study because the as the population group scored extremely high on the Cy dimension of BO. The question invariably arises whether it has to do with the respondents failing to find meaning in their jobs. As previously explained, respondents with high Cy levels can be expected to “depersonalise” relationships with care recipients and colleagues. The result of such a process is that the female academic starts to experience a breakdown in her relationship with her students and work colleagues. She starts to “expect the worse” from these relationships and, in an effort to protect herself from further emotional Ex, tries to reduce personal contact between herself, students and colleagues to the bare minimum. Van Emmerik (2002) found that assistance from colleagues and a supportive departmental climate, together with practical assistance, reduced Ex in academics.

Barkhuizen and Rothmann (2004) also noted the increased levels of Ex and Cy in their study of BO in academics in a Higher education institution in South Africa. They attribute this trend to a decrease in resources, including unfair rewards, poor management, poor social support and a lack of participation, which in turn contributes to the experience of a reduction in PE.

The result of this isolation is that the female academic is unfortunately also cut off from emotional or other support that might be forthcoming from these interpersonal relationships. This in itself has the potential to form a “negative spiral”, in that the loss of meaning leads to Cy and isolation, which in itself might then contribute to a loss of a sense of meaning.

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From the above it is evident that there is a strong negative correlation between SOC and WE. Again, the SOC construct "Me" plays a central role. Strong negative relationships between Me (SOC) and the total WE, as well as the WE constructs Vi and De, are observed. It is evident that being able to find meaning in their jobs plays a crucial role in the female academic's ability to achieve WE (specifically being Vi and De). Although slightly less pronounced, significant relationships between all three SOC dimensions and all three WE dimensions are present. Antonovsky (1987) was convinced that a person with a high SOC will be more likely to define stimuli as nonstressors and to define the stress attributed to stimuli perceived as stressors as benign or irrelevant. Another possible explanation might be that a strong SOC has an influence at an earlier point- namely, that it changes the stress appraisal in the first place (Levert et al., 2000; Semmer, 1996).

A strong negative correlation was found between the total scores for BO and WE. Cy reflects indifference or a distant attitude towards work. It refers more to the work itself, rather than to personal relationships at work. It is seen as a negative, callous or detached response to various aspects of the job. It is specifically used for jobs in which there is not constant interpersonal interaction between the burnt-out employee and his or her subject (recipient), as would, for example, be the case with a nurse and her patient. Another extremely strong negative correlation that was manifested, was the negative relationship between Cy and De. Since the female academics in this target group scored noticeably high on Cy, the obvious conclusion is that their De to the academic job they are performing currently would be on the decline.

However, it is noteworthy that the correlation between the two concepts (although extremely strong) is not absolute, confirming the theoretical model of Schaufeli and Bakker (2003), that BO and WE are negatively correlated, but are not the exact opposites of each other. It is theoretically possible for an academic to feel burnt out, but still experience the Vi, De and Ab that characterise WE. For
example, it is possible that feelings of BO are experienced when lecturing to a large group, but the academic may still become totally engrossed in another aspect of her job, for example, research. The reason for this is that WE is defined as mental resilience and the willingness to invest effort in one's work, even in the face of difficulty. Resilience is thus a vital aspect of the manifestation of WE.

A regression analysis was performed on the data. On the basis of the literature review, a judgement decision was made to perform a regression analysis on BO. The De, Vi and Ab (WE) and Me (SOC) subdimensions together accounted for 60% of the variance in BO. The remaining subdimensions did not contribute significantly to the BO model.

The implication of this finding is that the De, Vi and Ab subdimensions of WE, as well as the Me subdimension of SOC, can predict 60% of the variance in BO levels in female academics. The Co and Ma subdimensions of the SOC did not feature significantly in predicting the occurrence of BO. From these results one may infer that the Me subdimension of the SOC plays a key role in moderating BO levels. It is noteworthy that the emotional element of SOC (Me) again plays a significant role. As Feldt (1997) explains, a strong SOC person is more likely to define a stressor as a welcome challenge and feel confident that he or she can handle it.

An exploration of the manifestation of BO, WE and SOC across the different biographic groups revealed a number of factors. The objective of the empirical study was to determine the nature of the relationship between these constructs. These conclusions are summarised below.

There is a positive relationship between the age of the female academic and her scores on the Vi, Ab and Co subdimensions. Vi and Ab are subdimensions of the WE construct, and Co is often seen as the core dimension of SOC. This implies
that the older the female academic, the higher her scores on Vi, Ab and Co are expected to be.

Schaufeli (2004) reported a weak positive relationship of WE with age. Wissing and Van Eeden (1997; 2002) also observed clear indications that older employees score higher on various indexes of psychological well-being. This is in accordance with the trends identified in the literature review. Antonovsky and Sagy (1985) hypothesised that, because of the development of her total personality, a strong SOC develops by the age of 30 and the older a person is, the stronger her SOC can be expected to be.

A significant positive relationship was found to exist between the employees’ years of employment as academics and the Co subdimension of SOC. This means that the longer the female is employed as an academic, the more she is expected to understand the demands of the job at a cognitive (rather than an emotional) level. Hence the long-service academic is expected to have a better cognitive understanding of the demands of the academic profession.

No significant differences could be found between the different population groups on BO, WE or SOC. This is interesting, because in the USA, Maslach (1982) found that black professionals are much less likely to suffer from burnout, because of a more supportive family and friendship network. Future research is required to investigate the reason for this difference between the South African and USA results.

Female academics in a permanent relationship (married, living together or engaged to be married) scored significantly higher on the total SOC scale, as well as on the subdimensions of Co and Ma. It would seem that the support experienced from being in a permanent relationship has a positive effect on the female’s cognitive evaluation of the job (Co), as well as on the way in which she
perceives the load balance experienced (Ma). Being in a permanent relationship may moderate the effect of stress-inducing factors experienced in work life.

Regarding the highest level of completed qualifications, significant differences were found on one of the dimensions of WE, namely the Vi dimension. Academics with a doctoral degree scored significantly higher than respondents with a master’s degree. Since academics with a doctoral degree are typically employed on the senior lecturer and higher organisational level, this could also imply that being in the possession of a doctoral degree and being employed on a higher organisational level, may be associated with higher levels of Vi. Tytherleigh (2003) argues that the levels of occupational stress reported by women working in higher education are contingent on job-related factors, such as seniority. Evidence from the existing literature indicates that SOC increases with educational level (Johnson, 1992), but not significantly so. This is not surprising, because knowledge is a type of resistance resource, albeit predicated on numerous antecedent social conditions.

This concludes the integration of the empirical findings with the literature study.

6.8 CHAPTER SUMMARY

This chapter gave an overview of the statistical results calculated. The statistical results confirm the hypothesis. It was confirmed that there is a significant relationship between BO, WE and SOC. BO is indeed negatively related to SOC and WE positively related to SOC in the females comprising this target group. WE and BO correlated negatively with each other. The chapter also integrated the empirical findings with the literature review.
CHAPTER 7

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

The final steps (7, 8 and 9 of the methodology) described in the research process (par 1.7.2) will conclude this chapter, as well as the research project. The various findings will be integrated. The conclusions will be substantiated from the findings of the literature review and the empirical study. Suggestions to be implemented by individuals, groups and organisations will be offered and the limitations of the research acknowledged.

7.2 CONCLUSIONS

Step 7 in the research process entails the conclusions drawn from the research. This study investigated the manifestation and nature of the relationship between BO, WE and SOC in female academics at two tertiary institutions in South Africa. The main aim of the study was to integrate existing knowledge of BO, WE and SOC, and to add a new dimension and perspective to the existing knowledge in the salutogenic paradigm, regarding the manifestation and relationship of these constructs among female academics.

In terms of the literature review, the aim was to provide a contextual background perspective on and support for the empirical aims.
7.2.1 Conclusions from the literature review

The general aim of this research was to determine the manifestation of BO, WE and SOC levels and examine the relationship between these constructs in female academics at two tertiary education institutions in South Africa. To facilitate the achievement of this aim, various specific aims were formulated for the literature review.

The aims of the literature review dealt with the manifestation of BO, WE and SOC in the existing literature and an investigation into the relationship between these concepts. A literature review needs to provide support for the empirical aims. Specific attention was paid to factors relevant to the target group. The method used to achieve this aim was to undertake a literature review on BO (chapter 2), WE (chapter 3) and SOC (chapter 4), as well as a study of the relationships between the different constructs (the synthesis following chapter 4).

7.2.1.1 Specific aims of the literature study

In terms of the literature review, the scientific aims were to provide support for the empirical aims, and in particular

- to explore, analyse, evaluate and describe the BO construct and its relationship with female academics at tertiary institutions
- to explore, analyse, evaluate and describe the WE construct and its relationship with female academics at tertiary institutions
- to explore, analyse, evaluate and describe the SOC construct and its relationship with female academics at tertiary institutions
- to explore, analyse, evaluate and postulate a theoretical relationship between BO, WE and SOC
• to make suggestions on how BO can be avoided and WE of female academics can be facilitated through management strategies, industrial and organisational interventions and self-management techniques

These aims were systematically addressed as follows:

_Aim 1: to explore, analyse, evaluate and describe the BO construct and its relationship with female academics at tertiary institutions_

In the literature review, BO was conceptualised as a multidimensional syndrome across a variety of professions and occupations. The original dimensions of BO are emotional exhaustion, depersonalisation and reduced personal accomplishment. These dimensions were revised and renamed to facilitate the measurement of BO across a wide spectrum of jobs. The revised constructs are Ex, Cy and RPE. Research findings to date support the notion that the BO dimensions are differentially related to job demands and resources at work. Ex develops in reaction to job demands, including interpersonal demands, and leads to Cy. RPE is positively influenced by the presence or absence of resources and largely develops parallel to both other dimensions.

In chapter 2, the negative effects of BO, including increased staff turnover, absenteeism, tardiness, reduced productivity and an increase in work-related accidents, were reviewed. Specific attention was paid to prolonged educator stress, resulting in withdrawal behaviour and loss of idealism, including physically or psychologically leaving the work setting as a result of unattractive working or supervisory conditions. In the light of student unrest, intimidation and the physical and emotional trauma suffered, it is concluded that work conditions are currently more challenging than before. The result is that the person often becomes cynical and starts to develop a cold, distant attitude towards students, management and colleagues.
Close encounters between care provider and recipient play a central role in the development of BO. Contact with people can be extremely stressful. In the context of the female academic, this poses a potential risk factor. The demanding nature of interpersonal relationships with various students, rising class sizes and an ever-increasing lecturer-student ratio can be highly stressful and play a significant role in the development of BO.

A vital characteristic of the BO syndrome is the shift in the individual’s view of other people, from positive and caring to negative, uncaring, cynical and derogatory. The academic may begin to develop a low opinion of students’ capabilities and their worth as human beings. In the context of this study, the danger exists that students may be regarded as lazy, unintelligent, dishonest and immoral. The BO syndrome is seen as going beyond physical fatigue from overwork because the crux of the problem lies in the disturbing from students that arises in response to the overload.

Much of the occupational literature reports data on males only. Consequently, gender issues are not adequately addressed and results reported are inconsistent and confusing. The high susceptibility of female academics was clear in this study. Factors such as role ambiguity, role overload and an absence of support systems were highlighted. Finally, possible coping mechanisms were discussed. These included coping at individual, group and organisational level.

Because BO is often defined only by its symptoms, many helping professionals do not recognise the problem until BO has reached an advanced state, and then it is often not correctly diagnosed. The result is that BO is often mistaken for simple fatigue, low energy levels or boredom. It is only when BO has reached an advanced stage where symptoms are more prominent that it is correctly diagnosed.

The first aim of the literature study was thus achieved.
Aim 2: To explore, analyse, evaluate and describe the WE construct and its relationship with female academics at tertiary institutions

WE is conceptualised as a positive fulfilling work-related state of mind characterised by Vi, De and Ab. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour. Vi is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties. De refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride and challenge. Ab is characterised by being fully focused on and happily engrossed in one’s work, whereby time passes quickly and one has difficulty detaching oneself from the work.

A conceptual model for WE, including the energetic and the motivational processes was provided. The aetiology of WE was studied and a profile of an engaged employee sketched. Demographic factors relating specifically to the manifestation of female academics were scrutinised, followed by a discussion of the positive effects that an engaged employee may have at individual, group and organisational level. Finally, ways in which WE can be promoted in organisations were identified.

The second aim of the literature study was thus achieved.

Aim 3: To explore, analyse, evaluate and describe the SOC construct and its relationship with female academics at tertiary institutions

In chapter 4, the SOC was defined as a global orientation that expresses the extent to which one has a pervasive and enduring, albeit dynamic feeling of
confidence that the stimuli that derive from one’s internal and external environments are structured, predictable and explicable. A person with a strong SOC is also more likely to believe that the resources are available to meet the demands posed by these stimuli and to view these demands as challenges worthy of investment and engagement. A person with a strong SOC is thus more likely to define stimuli as nonstressors and the stress associated with these stressors as benign or irrelevant. Someone with a strong SOC is expected to understand the challenges that life presents and tends to believe that all will work out for the best. The implication of these findings is that SOC can act as a buffer against the experience of prolonged stress resulting in BO.

The motivational component of Me is crucial. Without it, being high on Co or manageability is likely to be temporary. Me is an individual’s emotional assessment of situations as coherent and worthy of investment. It refers to the extent to which the individual feels that life also makes sense at an emotional, rather than a cognitive level.

An effective load balance, that is, an underload-overload balance in life experience, provides the manageability component. In underload, there is not enough direction or the individual is seldom called on to exercise his or her abilities or actualise his or her potential. Overload refers to the individual setting a pace too rapid for demanded development, never having enough time and energy to do everything or not having enough resources to do everything.

A conceptual model of the construct, explaining the relationship between generalised resistance resources and generalised resistance resources—resistance deficits was provided in chapter 4. The causational factors (aetiology) were studied and a profile of an employee with a high SOC compiled. The discussion of the demographic factors relating to the SCC construct again centred around the target population in this study, namely female academics.
The consequences of a high SOC were studied as well as the possibility for developing a SOC in employees.

Hence the third aim of the literature study was deemed to have been achieved.

**Aim 4: To explore, analyse, evaluate and postulate a theoretical relationship between BO, WE and SOC.**

The relationship between the three constructs was studied in a broad range of different national and international research outcomes. In the literature review, WE was defined as the assumed antipode of BO. Because this study was conducted from a positive psychological point of view, it is noteworthy that, in the literature review, BO was redefined as the erosion of engagement with the job. Engaged employees have a sense of energetic and effective connection with their work activities and are able to deal with the demands of their jobs. As WE erodes, work that started out as important, meaningful, and challenging, becomes unpleasant, unfulfilling and meaningless. Energy turns into Ex, involvement into Cy and efficacy into ineffectiveness.

Institutions of higher education in South Africa are faced with the challenging scenario that academic work that is normally regarded as important, meaningful and challenging may become unpleasant to this target group. Hence, if BO levels are not contained, the target group may start to experience their academic jobs as unfulfilling and meaningless. In the literature review it was established that the academic environment makes employees particularly prone to Ex. In terms of the present study, the energy that was initially experienced by female academics, might thus turn into Ex fairly easily. Another aggravating factor is that female academics may experience more role conflict trying to balance the responsibilities of home, family and work, than their male counterparts.
In terms of SOC, it was determined that a person with a strong SOC is likely to see stressful situations as less threatening, which will contribute to lower levels of BO. Consequently, higher levels of SOC are associated with lower levels of BO (specifically, emotional Ex). It was also established that Me and Ma are strong indicators of active WE, specifically the De dimension.

The conclusion of this section of the literature review was that a theoretical relationship does indeed exist between BO, WE and SOC. A negative relationship exists between BO and both the WE and SOC constructs, while a positive relationship is observed between SOC and WE.

The fourth aim of the literature study was thus achieved.

Hence the four specific aims of the literature review are judged to have been achieved by this study. This finalises the conclusions in terms of the literature review.

**7.2.2 Conclusions from the empirical study**

The empirical study mainly aimed at determining the manifestation of BO, WE and SOC in the current target group as well as exploring the nature of the relationship between these constructs.

**7.2.2.1 Specific aims of the empirical study**

- to quantitatively determine whether the sample under investigation experiences significant levels of BO
- to quantitatively determine whether the sample under investigation experiences significant levels of WE
- to quantitatively determine whether the sample under investigation experiences significant levels of SOC

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to quantitatively determine if there is a meaningful relationship between BO, WE and SOC in female academics at two tertiary institutions in South Africa and to explore the nature of this relationship

• to quantitatively explore the influence of biographical variables on BO, WE and SOC in female academics at two tertiary institutions in South Africa

• to make recommendations on the basis of the empirical results on how BO can be avoided and the WE of female academics can be facilitated, through management strategies, industrial and organisational interventions as well as through self-management techniques

Aim 1: to quantitatively determine whether the sample under investigation is experiencing significant levels of BO

A high degree of BO was reflected in high scores on the total BO score, including the Ex, Cy and RPE subdimensions.

The levels of the Ex dimension of BO in the female academics were average; the Cy dimension was particularly high, and for the RPE dimension, the target group presented with average to high scores. Hence there is sufficient evidence to indicate that the experience of BO is indeed present in the target group of female academics studied. Because Cy develops as a result of job demands, interpersonal demands and RPE in particular are associated with the absence of job resources. Both factors thus manifest as possible contributors to BO in female academics.

The phase model of BO poses that Cy is initially experienced because a certain degree of professional detachment is functional in dealing with others more objectively.

The particularly high degree of Cy present is an indication that the next phase in which the development of personal relationships is impaired, poses a real threat
in this population of female academics. The inability to develop interpersonal relationships could lead to impaired coping because social support is not optimally utilised when interpersonal relationships are strained.

Hence, the first aim for the empirical study was achieved.

**Aim 2: to quantitatively determine whether the sample under investigation is experiencing significant levels of WE**

A high degree of WE is reflected in high scores on the total WE score, including the Vi, De and Ab subdimensions.

A fairly high score was obtained on the total WE score as well as on all the subdimensions of the UWES. Female academics are thus generally energetic, mentally resilient, strongly involved in their jobs, enthusiastic, proud, inspired and happily engrossed in their work.

In the literature review, it was established that WE, and “Vi” specifically, are characterised by mental resilience and the willingness to invest effort in one’s work, even in the face of difficulty. This could explain why WE was manifested in the female academics who were studied, even though there were definite signs of BO in the target group. Effort is invested in the academic work, even though difficulties are experienced in the fulfilment of these duties. These difficulties include decreasing resources to get the work done, as well as increasing demands by faculty, students and parents. These demands often take the form of rising lecturer-student ratios, an increased demand for research outputs, exhausting interpersonal relationships with vast numbers of students and ever-increasing administrative duties. The role of mergers and unilateral changes in work conditions could also have a negative effect on the emotional wellness of the target group.
The second aim of the empirical study was thus achieved.

*Aim 3: to quantitatively determine whether the sample under investigation is experiencing significant levels of SOC*

A high SOC is reflected in high scores on the total SOC score, including Co, Ma and Me subdimensions.

In terms of the total score for the SOC, the target group scored lower than the estimate of the mean value for the SOC. Participants scored lower on the Ma and Me subdimensions, for example, than the group of scientists and engineers tested in South Africa. A slightly higher score was achieved for the Co scale, which could indicate that participants do indeed understand their work situation and the demands placed on them.

The fairly low Ma score means that the female academics did not find their workload easy to manage. The low score for the Me subdimension indicates that it was difficult for the females in this target group to find personal and existential meaning in their work.

The third aim was consequently, deemed to have been achieved.

*Aim 4: to quantitatively determine whether there is a meaningful relationship between BO, WE and SOC in female academics at two tertiary institutions in South Africa and to explore the nature of these relationships*

Strong support was found for this notion. Significant correlations between BO, WE and a SOC in terms of Pearson’s correlation matrix revealed significant relationships between all of the scales and subdimensions of the MBI, UWES, and SOC. A relationship between the different constructs was confirmed. BO and WE were negatively correlated, as were BO and a SOC. SOC, however, was
positively correlated with WE. All the correlations found were significant at the 99% confidence interval. BO was also found to have a strong negative correlation with WE.

All the subdimensions of the MBI and the SOC were negatively correlated at the 99% confidence interval, meaning that a strong SOC will indeed act as a buffer against the development of the pathogenic state of BO. The converse is also true, in that a female academic with a poor SOC will be vulnerable to the development of BO (Ex, Cy and a feeling of RPE). WE was positively correlated with SOC because all the subdimensions of the UWES and the SOC were found to be positively correlated with one another at the 99% confidence interval. A female academic with a strong SOC will be more likely to experience WE, which implies feelings of energy, resilience, persistence, enthusiasm and inspiration.

The hypothesis stating that there is a significant relationship between BO, WE and SOC among female academic staff members at two tertiary institutions in South Africa thus received strong statistical support.

Hence the fourth aim is judged to have been achieved.

**Aim 5: to quantitatively explore the influence of biographical variables on BO, WE and SOC in female academics at two tertiary institutions in South Africa**

A number of conclusions were drawn on the strength of the statistical analysis and comparisons between the different demographical groups on their BO, WE and SOC total scores and respective subdimensions. The aim was to determine the nature of the relationship between these constructs. These conclusions are summarised as follows:
There was a positive relationship between the age of the female academic and her scores on the Vi, Ab and Co subdimensions. Vi and Ab are subdimensions of the WE construct, and Co is often regarded as the core dimension of SOC.

A strong SOC may help employees to understand stressors, and to regard them as manageable and meaningful. SOC therefore moderates the effects of job stressors on Ex. SOC will also contribute to the sense of PE of employees.

A significant positive relationship also exists between the employees’ years of employment as an academic and the Co subdimensions of SOC.

No significant difference was found between the different population groups on BO, WE or SOC.

Female academics in a permanent relationship (married, living together or engaged to be married) scored significantly higher on the total SOC scale, as well as on the subdimensions of Co and Ma.

Regarding the highest level of completed qualification, significant differences were found on the Vi subdimension of WE. Academics with a doctoral degree scored significantly higher than respondents with a master’s degree. Evidence from the existing literature proves that SOC increases with educational level (Johnson, 1992), but not significantly so. This is not surprising because knowledge is a type of resistance resource, albeit predicated on numerous antecedent social conditions.

Hence the fifth aim of the empirical study was deemed to have been achieved.
7.2.3 Specific aim integrating the literature review and the empirical study

Aim: to make suggestions on the basis of theoretical review and the empirical study on how BO can be avoided and the WE of female academics can be facilitated, through self-management strategies, industrial and organisational interventions and management techniques.

It is suggested that each female academic becomes sensitive to the early signs and symptoms of BO. Symptoms such as fatigue, tiredness, low energy levels and boredom should be heeded. It is strongly advisable not to wait for a crisis to present before action is taken. An intra-personal effort to manage the environmental and internal demands and conflicts through self-assessment and monitoring, awareness of the problem, accepting responsibility for the problem, achieving cognitive clarity and actively developing coping strategies is strongly advised. This will enable the female academic to build positive self-esteem and foster feelings of being in control of her own mental well-being.

Coping strategies include generating positive feedback, goal setting, cognitive techniques (e.g. positive framing), relaxation techniques (e.g. an exercise regime or practising yoga), meditation and biofeedback. In the literature review, it was established that, compared with men, women report less use of effective strategies and greater use of “selective ignoring”, a form of coping found to exacerbate rather than alleviate stress. Hence it is suggested that female academics deal with BO by taking direct action, rather than relying only on distraction and relaxation. Female academics may also derive huge benefits from using adaptive coping strategies such as meticulously planning their work activities, actively collecting information and setting priorities for themselves.

It is suggested that the female academic become actively involved in the pursuit of learning. Workshops teaching skills such as priority setting, time management, communication and stress management will benefit the positive work experience
of the academic. She should seek variety in her job, a sense of meaning and success, flow experiences and self-actualisation. In this pursuit, feelings of guilt borne out of various other role obligations, such as that of mother, spouse, life partner or citizen, should be avoided.

Since the empirical study proved that Cy is particularly to relevant this target group, the importance of group interaction and support should not be underestimated. It is strongly suggested that female academics use the social support systems available to them, which could comprise one or more of the following: emotional support (admiration, respect, liking); affirmation or appraisal (acknowledgement of the appropriate behaviour of another); and aid (direct giving of material information or service).

The husband or life partner and other family members are valuable sources of support, especially in the current stressful academic context. Friends (male or female) who challenge the individual to do her best can also contribute to personal growth and self-actualisation. In stressful times, friends with similar values and views can be extremely supportive in helping the individual to interpret the organisational reality.

It is noteworthy that the nature of the academic job complicates social support from colleagues, because by its very nature, it is an independent and autonomous job. Hence the importance of strengthening social support, also in an organisational context, cannot be ignored or underestimated by management. It is therefore suggested that social support systems endeavour to provide the following:

- emotional support from colleagues through active listening (listening without giving advice or making judgements)- this could be in the form of campus support groups
• technical appreciation in the form of acknowledgement for a good piece of work by management and colleagues
• challenges, because an absence of challenging job assignments can lead to stagnation and boredom in the female academic
• collaboration between different researchers, as well as with administration, to create an academic environment more conducive to the needs and values of females

Because she is employed by an institution of higher education in South Africa, it is recommended that the academic learns how to become a “good bureaucrat”. In other words, the administrative duties of the academic job should be accepted, so as not to contribute to a feeling of helplessness in the female academic. Administrative functions in tertiary institutions also need to create a greater sensitivity to women’s issues and needs.

It is strongly suggested that female academics change their client orientation to a more balanced relationship between themselves and their students. The female academic needs to develop and maintain a balanced client orientation of detached concern. In the academic context, developing an attitude of detached concern towards students could be an effective strategy for coping with the interpersonal demands of the job. The challenge lies in maintaining the right balance- in other words, a relationship with just the right amount of interpersonal involvement.

Organisational strategies include different organisational development interventions in order to promote organisational health and optimal performance. Considering the profoundly negative impact of BO, it is strongly suggested that institutions of higher education develop and implement employee assistance programmes and wellness programmes to prevent BO in their academic employees and facilitate the experience of WE. These programmes should include the following:
• The institutions of higher education’s mission and strategic plans should address the health and well-being of employees, with a special focus on female academic employees. A written policy statement about employee health and the importance of employee well-being is essential. Organisational resources should be committed to the wellness plan.

• Staff meetings could also act as an effective organisational buffer against BO and tedium if they afford staff opportunities to express themselves, influence the organisation’s policies, exert some control over their work and give them a greater sense of commitment to the organisation. There should be a balance between the time allocated to discussing students’ problems (e.g. pass rates) and the time allocated for staff to confer about staff wellness and effective methods for coping with job-related stress.

• In order to address role ambiguity and role conflict, it is suggested that management provide the female academic with a clear job description. The job description should be compiled through participative decision-making processes, and the tasks of the female academic should be redesigned accordingly.

• Management need to acknowledge the role overload that many female academics have to cope with, for example, being a spouse, mother, primary caregiver for elderly parents and sick children, academic, researcher, counsellor, lifelong student and responsible citizen should be acknowledged. Flexibility in the structuring of the job could be a powerful tool for combating the role conflict that female academics continuously face.

• Open lines of communication with faculty and administrators and sufficient administrative support would relieve the female academic of some of the bureaucratic pressures, thus reducing work stress.
• Allowing for and encouraging professional development through mentoring, coaching and networking will nurture a sense of accomplishment and contribute to a fully developed professional identity in the academic.

• The development of training programmes in which academics are taught how to depersonalise incidents, is strongly suggested. Strong and reliable behaviour management techniques should be an integral part of such a programme. Tertiary institutions should dedicate adequate resources and training facilities to this training.

• The creation of professional forums with strong peer-support from other academics, through the creation of a supportive climate, in both professional and personal issues, is strongly recommended.

• Management, represented by, say, heads of department and deans of faculty, should accept responsibility for effective performance feedback. A natural consequence of performance feedback is an equitable reward system, celebrating staff and giving promotions to female academic staff, equitable to those given to their male colleagues.

From a positive psychological and preventive point of view, the focus should be on interventions that will contribute to a situation of a “good fit” between the female and her academic job in the tertiary institution. These interventions address the factors that contribute to the experience of WE. The following organisational strategies are recommended to foster the experience of WE in this target group:

• A workload strategy should be formulated that includes appropriate objectives for being more resilient, having uninterrupted time, improved time management and reducing the workload.
• Feelings of choice and control among academics should be nurtured. An action plan should be formulated to increase the autonomy experienced, sharing the leadership or revising the functioning of the work team.

• A strong recognition and reward strategy should be designed and implemented. An action plan to address the problems of low compensation, a lack of acknowledgement or arid undesirable job assignments should form the core of such a strategy.

• In order to create a sense of community, effective conflict resolution, improved communication and creating a sense of unity are essential. Effective staff meetings could address many of these issues.

• Principles of fairness, respect and justice should be practiced in the workplace. Appropriate objectives for taking action will include promoting respect, valuing diversity and ensuring equity.

• It is strongly suggested that the tertiary institution promote an organisational culture that rewards desirable values such as maintaining integrity, behaving ethically and adding meaning to one's work life.

Although SOC has been defined as a relatively stable dispositional orientation, job stress could impact negatively on a female academic's SOC. However, a number of self-management techniques are proposed for the female academic, in order to facilitate the development of a strong SOC and prevent the development of BO. These actions include taking regular rest periods, engaging in positive interactions with other people and knowing oneself well enough to judge when too many demands are being made on one.

It was concluded that SOC is not “fixed in stone”, but remains relatively flexible in adulthood. There is always hope in adult life. SOC is not rigidly fixed and may
strengthen along with appropriate environmental factors. It is suggested that work organisations consider this when designing wellness programmes. Well-being in the workplace can be enhanced if there is adequate understanding of the ways in which psychosocial work characteristics shape employees' SOC and thus their well-being at work.

The organisation could contribute to the development of employee's SOC by presenting information in a constant, structured and orderly fashion that is completely understood by the employees (Rothmann et al. 2002). It is suggested that the organisation provide the necessary knowledge, skills, materials, instruments and support to improve female academic's perception that their jobs are manageable. Furthermore, by being allowed a degree of independence and freedom of choice to execute the task at hand in their own way, employees will feel that their jobs are meaningful. If employees' SOC is enhanced in the organisation, BO levels will also remain under control.

Management and health and safety officers should pay particular attention to ensuring a good organisational climate, conducive to employees' SOC and well-being. Those who have subordinates should remember that their style of leadership might shape their employees' SOC and well-being at work. In particular, employees need social support, encouragement and advice at work as well as constructive feedback on their achievements.

Because the higher education sector has been characterised by mergers, retrenchments and transfers over the last five years, it is strongly suggested that every effort be made to remove job insecurity, which weakens SOC and hence well-being. It is of utmost importance that employees know what to expect from their organisation. For example, when an organisation is going through a major change, such as a merger and consequent restructuring, giving out information early and maintaining open lines of communication are key factors in reducing employee's uncertainty about their jobs. Management need to consider the
coping resources of employees who face transfers and redeployment. Their SOC (and thus their ability to cope with stressors at work) should be sustained by every possible means. For example, proper training and thorough initiation into the job will help employees to experience their jobs as meaningful, comprehensible and manageable.

Managers and job designers need to consider employees’ own aspirations and their capacity to perform the tasks required of them. High work demands can cause stress in employees with a weak SOC, while they may serve as promoters of well-being among employees with a strong SOC.

The specific aim of the integration of the literature review and the empirical study has thus been achieved.

7.3 LIMITATIONS OF THE RESEARCH

The limitations of the research are discussed with regard to both the literature review and the empirical study.

7.3.1 Limitations of the literature review

In the literature review, the following limitations were evident:

- Studies on the manifestation of BO, WE and SOC, specifically in females, are limited.

- Studies on the relationship between BO, WE and SOC in females are extremely limited.
• Regarding BO, it was difficult to find studies on the MBI-GS subdimensions (Ex, Cy and RPE), although studies relating to the subdimensions of the original MBI (emotional exhaustion, depersonalisation and personal accomplishment) were more plentiful.

• The fact that BO is generally studied exclusively from the pathogenic paradigm exclusively, made it difficult to reconceptualise the construct into the salutogenic paradigm.

• WE, together with its measuring instrument, the UWES, is a recently developed construct, which made it challenging to find information and existing research results (locally and internationally). Compared to the BO and SOC construct, not much research has been conducted on the construct to date.

• The fact that the sample population was exclusively female, also made it difficult to find applicable research results to make comparisons with other studies possible.

7.3.2 Limitations of the empirical study

• No studies could be found on the relationship between BO (using the MBI to measure BO), WE (using the UWES to determine the levels of WE) and SOC (using the SOC).

• The fact that a cross-sectional design was used, was a constraint in terms of solving cause and effect issues. It is recommended that longitudinal research be conducted to investigate these elements in future.
• The relatively small sample size (187 respondents) implies that caution should be exercised when generalising to the general population of female academics in South Africa.

• The sample represented only two tertiary education institutions. The inclusion of other institutions could have added insightful data.

• The fact that the research included female academics exclusively made it impossible to compare scores between male and female academics.

• The study relied exclusively on self-report measures. More objective indicators of personnel behaviour, such as actual turnover, absenteeism and performance appraisals should be included in future studies.

• Only one psychometric instrument was used for each construct. Additional instruments would have provided additional insights.

7.4 RECOMMENDATIONS

Considering these conclusions and limitations, the following recommendations for future research are formulated:

• The manifestation of BO, WE and SOC, in female academics, should be investigated in other tertiary education institutions in South Africa. A larger sample in more institutions would add value to the existing knowledge.

• It is recommended that future studies include organisational measures, indicative of BO, to substantiate the findings, for example, staff turnover, absenteeism, tardiness, reduced productivity and an increase in work-related accidents.
- It is recommended that the structure of the MBI, UWES and SOC be reassessed in future studies to account for the items that did not correspond with the three factors identified according to the factor analysis.

- Future research should focus on the relationship between the three subdimensions of the MBI-GS, specifically investigating the role of an increased Cy on the development of more advanced stages of BO.

- Future research on female populations should pay specific attention to the emotional element, namely Me, of the SOC and concentrate on the effect that this could have on increasing or decreasing BO and WE levels.

- Future research should include male academics in order to make possible comparisons between the experiences of the two groups.

- Research on professional females in other professions would contribute significantly to the salutogenic paradigm.

- It is suggested that future studies investigate the specific biographical details of the respondents in more detail. The care-giving role towards children, elderly parents and extended family members adds considerably to the general workload and role conflict of most females in South Africa. Also, no distinction was made between females who fulfil the role of breadwinner and those who are not the primary breadwinner. It is no longer valid to accept that simply because a female is in a relationship, she does not carry the primary responsibility of providing financially for her dependants. It is recommended that future studies investigate the possible implications of this. It is necessary to investigate the contributing role of these biographical variables in the presentation of BO-WE in the female academic specifically.
• It is advisable that future studies focus on the influence of the rapidly changing tertiary landscape in South Africa. The impact of mergers, retrenchments, redeployment, transfers, changing job demands and working conditions on the female academic needs to receive attention in future research projects.

7.5 CHAPTER SUMMARY

The aim of this research was to determine whether there are significant levels of BO, WE and SOC in female academics at two tertiary institutions in South Africa and to investigate the nature of this relationship. It was concluded that there is indeed a significant relationship between the three concepts. This chapter completes steps 7 to 9 of the research process and concludes the research project.
LIST OF REFERENCES


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BURNOUT, WORK ENGAGEMENT AND SENSE OF COHERENCE IN FEMALE ACADEMIA AT TWO TERTIARY EDUCATION INSTITUTIONS IN SOUTH AFRICA

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ABSTRACT

Burnout, work engagement and sense of coherence were measured in female academia in the tertiary education system in South Africa. A salutogenic paradigm perspective guided the research. 187 Permanently employed female academia at Unisa and Tshwane University of Technology were used. They received a psychometric instrument, compiled from a biographical survey, the Maslach Burnout Inventory, the Utrecht Work Engagement Scale and the Sense of Coherence questionnaire. The findings included average levels of BO, with evidence that the experience of BO is on the increase. The cynicism sub-dimension of BO showed increased levels. The WE scores of the female academics were just above average and the SOC scores were low. This research yielded strong support for the existence of a significant relationship (in terms of correlations and regression) between BO, WE and SOC. It is recommended that university management implement strategies to address these issues and nurture the experience of work engagement. Female academics need to take personal responsibility for their own wellness and act on the initial signs of BO, rather than dismiss it as mere fatigue or lack of energy.

Uitbranding, werksbegeesting en koherensiesin is gemee in vroue akademici in die tersiëre opvoeding stelsel in Suid-Afrika. 'n Salutogeniese paradigma het die navorsing gereg. 187 Permanente vroue akademici verbonde aan Unisa en die Tshwane Universiteit vir Tegnologie is gebruik. Hulle het 'n psigometriere instrument bestaande uit die Maslach Burnout Inventory, die Utrecht Work Engagement Scale en die Sense of Coherence vraeys. Die bevindinge is gemiddelde uitbrandingsvlakke, met tekens van verhoogde tellings aangedui. Die siniese sub-dimensie van uitbranding het verhoogde tellings getoon. Werksbegeesting was net bo gemiddeld en die koherensiesin tellings was laag. Die navorsing het sterk bewys gevind dat die bestaan van 'n beduidende verwantskap (in terme van korrelasies en regressie) tussen uitbranding, werksbegeesting en koherensiesin. Dit word aanbeveel dat universiteitsbestuur strategieë
implementeer om hierdie sake aan te spreek en die beleving van werksbegeesterings aan te moedig. Vroue akademici moet persoonlik verantwoordelikheid aanvaar vir hulle eie gesondheid en optree met die eerste tekens van uibranding, eerder as om dit aft e maak as blote moegheid of gebrek aan energie.

**Key-terms**: BO, WE, SOC, female academic, tertiary institution, MBI, UWES, SOC-questionnaire, salutogenic paradigm

Female academics face numerous challenges in the continuously changing landscape of South African Higher Education. Institutional mergers, increasing job demands, ever increasing class sizes and role conflict contribute to the manifestation of burnout (BO) in this population group. These concepts are operationally defined as follows:

**Burnout**
Maslach and Jackson (1986) originally defined burnout (BO) as a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment that occurs among individuals who do “people work”. Maslach and her colleagues expanded the BO concept beyond the human services (Maslach & Leiter, 1997). BO was consequently redefined as a crisis in one’s relationship with work, not necessarily as a crisis in one’s relationship with people at work. Hence it became necessary to revise and rename the three dimensions to include all jobs. It includes three somewhat more general aspects that do not explicitly refer to ‘people work’ per se, namely Ex (exhaustion), Cy (cynicism) and RPE (reduced professional efficacy) (Maslach et al. 1996). An adapted version of the MBI was developed to measure BO in jobs that are not exclusively human services jobs, namely the MBI-GS. Schaufeli (2004) offers a comprehensive definition of BO, stating that it is a persistent, negative, work-related state of mind in “normal” individuals that is primarily characterised by Ex, which is accompanied by distress, a sense of reduced competence, decreased motivation and the development of dysfunctional attitudes at work.

**Work engagement**
Research on the work engagement (WE) concept has taken two separate, but related paths (Storm, 2002). Maslach and Leiter (1997) describe WE as being characterized by energy,
involvement and efficacy, which are considered the direct opposites of the three BO dimensions, namely Ex, Cy and lack of PE respectively. Focusing on WE, means focusing on the energy, involvement, and effectiveness that employees bring to the job and develop through their jobs. They believe that a focus on WE builds more effective organisations. Schaufeli and Enzman (1998) partly agree with Maslach and Leiter’s (1997) description, but in a different perspective define and operationalise WE in its own right. Schaufeli (2004) consider BO and WE to be opposite concepts that should be measured independently with different instruments.

Schaufeli (2004) has consequently defined WE as a positive, fulfilling, work-related state of mind that is characterized by Vi, De, and Ab. WE does not refer to a momentary and specific state, but rather to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour.

**Sense of coherence**

The shift towards the positive psychological direction, representing a move away from the pathogenic paradigm, towards a more salutogenic paradigm, lead to the development of the salutogenic construct, sense of coherence (SOC) (Redelinghuys & Rothmann, 2004). Antonovsky (1987) and Loye (2000) hold that humans are able to make sense of their reality despite increased complexity. Antonovsky (1987) postulates that it is the particular way in which an individual appraises or understands his/her environment, referred to as SOC, which allows the individual to make sense out of complex environments. SOC is conceptualised as a psychological, global orientation that influences the way in which individuals understand their environments and can therefore give rise to individual differences in behaviour.

Research revealed the presence of three underlying components in the SOC, namely comprehensibility (Co), manageability (Ma) and meaningfulness (Me) (Antonovsky, 1987). SOC is conceptualized as a global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic, feeling of coherence manifesting in three behavioural experiences: (1) The stimuli deriving from one’s internal and external
environments in the course of living are structured, predictable and explicable. This is called Co, where the individual makes sense of the stimuli in the environment. (2) The belief that resources are available to one to meet the demands posed by these stimuli. This is called Ma, where the individual is able to cope with the demands of the environment. (3) The belief that these demands are challenges worthy of investment and WE. This is called Me, where the individual is able to identify emotionally and commit effort in handling these demands (Antonovsky, 1987; Du Toit, 2002; Strümpfer, 1990).

**The relationship between BO, WE and SOC**

According to Schaufeli and Bakker (2001), two dimensions of WE are logically related to BO, namely Vi (Ex) and De (Cy). Vi refers to the activation dimension of well-being, while De refers to identification with work. However, Ab and RPE seem to be less related than the other two dimensions (Rothmann, 2002). According to this framework, BO is characterized by a combination of Ex (low activation) and Cy (low identification), whereas WE is characterized by Vi (high activation) and De (high identification).

The question arises whether a strong SOC can prevent a big threat such as BO (Rothmann, Scholtz, Rothmann & Fourie, 2002). A person with a strong SOC is likely to see stressful situations as less threatening, which could contribute to lower levels of BO (Antonovsky & Sagy, 1985). Felt (1997) found that, as the level of SOC strengthened, the scores of BO (specifically emotional Ex) decreased. Gilbar (1998) also reports that individuals with a strong SOC experience less BO than those with a weak SOC. Levert, Lucas and Ortlepp (2000) found that people in the caring professions, with a strong SOC and a manageable workload, will be far less likely to experience emotional Ex and depersonalization. Levert et al. (2000) reported a significant negative correlation between two components of BO (emotional Ex and depersonalization) and SOC.

**Theoretical integration**

The negative consequences of BO, including a deterioration in the quality of service among many other, have serious consequences for the individual, workgroup (colleagues), learners (or other care recipients), employer organisations and the society as
a whole (Golembiewski, Boudrau, Munzenreider & Luo, 1996, Maslach and Jackson, 1986).

Research in organisational psychology, conducted from a salutogenic paradigm, is limited. Salutogenic functioning refers to those internal driving forces that enable an individual to stay well, succeed and thrive amidst stressful circumstances in life (Rosenbaum, 1990). Aspects such as WE and psychological strengths have not yet received the attention it deserves in academic research (Rothmann, 2002). Psychology, with its emphasis on human suffering, has been criticized for focusing too much on pathology in stead of positive outcomes in the work environment (Diener, Suh, Lucas & Smith, 1999.) Diener, Suh, Lucas & Smith (1999), as well as Schaufeli (2004) report a negative versus positive ratio of journal published articles of 17:1. In their study, Seligman and Csikszentmihalyi (2000) advocate the drive “towards a positive psychology”.

A similar trend is observed concerning research on the female gender. Various researchers identify the need for a more positive approach, focussing on the enhancement of health in studying gender differences (Nelson, Burke and Miche, 2002; Simmons, 2000; Taylor, Klein, Lewis, Grunewald, Gurung and Updegraff, 2000).

Female academia faces numerous challenges in the continuously changing landscape of South African Higher Education. Institutional mergers, increasing job demands, administrative red tape, ever increasing class sizes, student unrest and role conflict inherent in the female role, contribute to the manifestation of BO in this population. No study could be found in South Africa, addressing the relationship between BO, WE and SOC, specifically amongst female academia. Following their study of occupational stress among university teachers, Blix et al. (1994) conclude that future research is needed to determine the reason why female academics experience more stress symptoms than their male colleagues.
The results of this research will contribute towards the growing body of knowledge in positive psychology and towards the salutogenic paradigm. Recommendations for management strategies to facilitate employee wellness in female academics, as well as suggestions for self-management techniques are offered.

Aim and research design
The aim of this research study is to determine the levels of BO, WE and SOC in female academics at two tertiary education institutions in South Africa and to determine whether a relationship exists between the constructs. A quantitative cross-sectional survey design is used, measuring the variables and reporting on the statistical correlation between them (Shaughnessy & Zeichmeister, 1997).

METHOD

Population
The population consisted of the female academics permanently employed at Unisa and TUT, during October and November 2006. There were 652 female academics in permanent employment at UNISA and 338 at TUT during this time period. The total population of 990 female academics were invited to participate. Of the 990 in the population, 190 responded to the request to participate. Of these, 187 questionnaires were usable. The total population that responded was thus 18,9%. Pallant (2001) argues that for this type of research the minimum amount of respondents needed would be 150 (15%). 187 Respondents are thus judged an acceptable response rate.

The biographical variables of the sample were as follows: females, ranging in age from 32 years to 52 years old with an average of 9,5 years work experience. Unisa represented 55% and TUT 45% of the participants. Of the respondents 88% were white, 10% were black and 2% were from the Asian and brown groups. Of the respondents 65% were married, 19% single and 9% divorced. The “living together”, “separated” and “widowed” categories, were significantly smaller. In terms of their highest level of completed qualification: 6% had a National Diploma or B Degree (M+3), 27% a B Tech or Honours
Degree (M+4), 37% a masters degree (M+5) and 30% a doctoral degree. The majority of respondents were lecturers or researchers (41%), senior lecturers (23%) and junior lecturers, researchers or research assistants (12%). Professors (6%) and associate professors (3%) also represented significant groups within the sample.

Measuring instruments
The measuring instrument was compiled from a biographical questionnaire, the Maslach BO Inventory (to measure the levels of BO), the Utrecht WE Scale (to measure the levels of WE) and the SOC Questionnaire (to measure the strength of the SOC) of the participants. The MBI-GS consists of sixteen items that constitute the three sub-dimensions, namely exhaustion (Ex), cynicism (Cy) and a reduced sense of professional efficacy (RPE), which is reversed scored to make the calculation of a total BO score possible. All items are scored on a 7-point frequency rating scale ranging from 0 (never) to 6 (always) (Maslach & Jackson, 1981; Maslach & Jackson, 1986; Maslach & Leiter, 1997). These sub-dimensions are regarded as interrelated, but conceptually distinct. A total BO score is calculated by adding the Ex, Cy and RPE scores. The UWES consists of seventeen items and is scored on a 7-point frequency rating scale, ranging from 0 (never) to 6 (always) (Schaufeli & Bakker, 2003; Schaufeli and Enzman, 1998). Three dimensions of the WE construct, namely vigour (Vi), dedication (De) and absorption (Ab) are measured by the UWES. A total score is calculated by adding the three sub-scores together. The SOC questionnaire consists of 29 Likert type self-rating items (Antonovsky, 1987; Dhaniram & Cilliers, 2003). The three sub-dimensions of SOC are measured independently, namely comprehensibility (Co) (11 items), manageability (Ma) (10 items) and meaningfulness (Me) (8 items) (Antonovsky, 1987). The scores for Co, Ma and Me are added together, to compute a total, overall score for the construct SOC.

Data collection
The instrument were sent electronically to all the participants, via the internal electronic communication network of Unisa and TUT respectively.
Hypothesis and data processing

The above discussion leads to the following hypothesis formulation:
H0: There is a significant relationship between BO (as represented by the constructs Ex, Cy and RPE), WE (as represented by the construct Vi, De and Ab) and SOC (as represented by the constructs Co, Ma and Me) amongst female academic staff members at two tertiary institutions in South Africa.
H1: There is no significant relationship between BO (as represented by the constructs Ex, Cy and PE), WE (as represented by the construct Vi, De and Ab) and SOC (as represented by the constructs Co, Ma and Me) amongst female academic staff members at two tertiary institutions in South Africa.

The statistical analysis was conducted with the SSPS computer package (2001).

RESULTS

Reliability

Cronbach’s alpha were calculated for the sub-dimensions and total scores of the MBI-GS, UWES and SOC-questionnaire respectively. A Cronbach’s alpha of 0,7 or more is an indication of a reliable scale (Nunally & Bernstein, 1994; Pallant, 2001). The Cronbach’s alpha for the MBI were all acceptable (table 1). RPE was just below 0,7, at 0,68. This is however a very small deviation. All the other Cronbach’s alpha were well above the 0,7 point, ranging from 0,8 to 0,9.
TABLE 1
CRONBACH’S ALPHA, MEANS AND STANDARD DEVIATIONS OF THE MBI
(N=187)

<table>
<thead>
<tr>
<th>Scale</th>
<th>N of items</th>
<th>M</th>
<th>SD</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total MBI</td>
<td>16</td>
<td>36,79</td>
<td>15,96</td>
<td>0,89</td>
</tr>
<tr>
<td>Ex</td>
<td>5</td>
<td>14,74</td>
<td>7,57</td>
<td>0,90</td>
</tr>
<tr>
<td>Cy</td>
<td>5</td>
<td>13,33</td>
<td>7,36</td>
<td>0,81</td>
</tr>
<tr>
<td>RPE</td>
<td>6</td>
<td>8,72</td>
<td>5,34</td>
<td>0,68</td>
</tr>
</tbody>
</table>

Regarding the Cronbach’s alpha of the UWES, Vi was slightly below the 0,7 mark. The other dimensions scored from 0,75 to 0,87 (table 2).

TABLE 2
CRONBACH’S ALPHA, MEANS AND STANDARD DEVIATIONS OF THE UWES
(N=187)

<table>
<thead>
<tr>
<th>Scale</th>
<th>N of items</th>
<th>M</th>
<th>SD</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total UWES</td>
<td>16</td>
<td>4,11</td>
<td>0,98</td>
<td>0,87</td>
</tr>
<tr>
<td>Vi</td>
<td>5</td>
<td>4,18</td>
<td>1,0</td>
<td>0,64</td>
</tr>
<tr>
<td>De</td>
<td>5</td>
<td>4,12</td>
<td>1,2</td>
<td>0,83</td>
</tr>
<tr>
<td>Ab</td>
<td>6</td>
<td>4,19</td>
<td>1,03</td>
<td>0,75</td>
</tr>
</tbody>
</table>

The Cronbach’s alpha of the SOC questionnaire, ranged form 0,51 to 0,90. Caution will be exercised when making interpretations regarding the Ma dimension, as the Cronbach alpha is significantly lower than the other scores (table 3).
TABLE 3
CRONBACH’S ALPHA, MEANS AND STANDARD DEVIATIONS OF THE SOC
(N=187)

<table>
<thead>
<tr>
<th>Scale</th>
<th>N of items</th>
<th>M</th>
<th>SD</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total SOC</td>
<td>29</td>
<td>128.22</td>
<td>13.36</td>
<td>0.90</td>
</tr>
<tr>
<td>Co</td>
<td>11</td>
<td>46.43</td>
<td>8.55</td>
<td>0.65</td>
</tr>
<tr>
<td>Ma</td>
<td>10</td>
<td>47.61</td>
<td>8.5</td>
<td>0.51</td>
</tr>
<tr>
<td>Me</td>
<td>8</td>
<td>40.10</td>
<td>7.65</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Based on these results it was decided to retain all three constructs, with their respective sub-dimensions.

Validity
The validity of the three psychometric instruments, namely the MBI, UWES and SOC, were investigated with various statistical techniques. Exploratory, as well as confirmatory factor analysis were performed. To examine the validity of the MBI, UWES, and SOC-questionnaires an exploratory factor analysis method was used to test each of the three scales individually, to confirm the validity of the factor structure of each of the scales within the sample. The factor structure of the MBI is investigated in this section. Table 4 presents the data collected with the MBI after extraction for the three-factor solution to the MBI.
TABLE 4
TOTAL VARIANCE EXPLAINED FOR THE OVERALL SCALE OF THE MBI
AFTER EXTRACTION (EXCLUDING FACTORS WITH EIGEN VALUES <1)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial Eigen values</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage of Variance</td>
<td>Cumulative percentage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percentage of Variance</td>
<td>Cumulative percentage</td>
</tr>
<tr>
<td>1</td>
<td>5,774</td>
<td>36,089</td>
<td>5,397</td>
</tr>
<tr>
<td>2</td>
<td>2,341</td>
<td>14,631</td>
<td>1,846</td>
</tr>
<tr>
<td>3</td>
<td>1,283</td>
<td>8,018</td>
<td>58,738</td>
</tr>
<tr>
<td>4</td>
<td>1,045</td>
<td>6,533</td>
<td>65,271</td>
</tr>
</tbody>
</table>

A rotated pattern matrix which indicates a clearer distribution amongst the three factors, was performed. In this extraction, factor loadings greater than 0.3 were considered as sufficient to assume a strong relationship between a variable and a factor (Pallant, 2001). There were no items with factor loadings less than 0.3. Therefore all items were retained for further analysis. Factor 1 corresponds with the Ex subscale of the MBI and accounts for the most variance (4.5 percent) after rotation of the factors. The second factor accounted for 1.9 percent of the total variance and corresponds with the RPE subscale. Factor 3 accounted for 4.1 percent of the total variance and corresponds with the Cy subscale. A number of items did not correspond with the original sub-dimensions as defined by Maslach and Leiter (1997).

After the factor analysis was performed, a score was calculated for each subscale by adding together all the items comprising each subscale to obtain a total score for each. The results of the principal axis factor analysis support the three factor solution found in previous studies, therefore supporting the validity of the scale.

Principal axis factor analysis with a direct oblimin rotation was used to investigate whether the factor structures of the three instruments could be replicated according to theoretical analysis. Prior to performing the factor analysis, the suitability of the data for
factor analysis was assessed. The correlation matrices of each of the three instruments revealed a number of coefficients of 0.3 and above. The Kaiser-Mayer-Olkin value of each instrument exceeded the recommended value of 0.6 (Pallant, 2001) (MBI = 0.84; UWES = 0.93; OLQ = 0.81). The Bartlett’s Test of Sphericity was statistically significant (p=0.000) and the sample size was greater than the recommended 150 respondents (n=187) (Pallant, 2001). The data was therefore considered suitable for a factor analysis.

The factor structure of the UWES is presented in this section. Table 5 presents the data after extraction for the three factor solution to the UWES.

**TABLE 5**

**TOTAL VARIANCE EXPLAINED FOR THE OVERALL SCALE OF THE UWES AFTER EXTRACTION (EXCLUDING FACTORS WITH EIGEN VALUES <1)**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial Eigen values</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage of Variance</td>
<td>Cumulative percentage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percentage of Variance</td>
<td>Cumulative percentage</td>
</tr>
<tr>
<td>1</td>
<td>7,327</td>
<td>45,792</td>
<td>45,792</td>
</tr>
<tr>
<td>2</td>
<td>1,542</td>
<td>9,636</td>
<td>55,428</td>
</tr>
<tr>
<td>3</td>
<td>1,036</td>
<td>6,475</td>
<td>61,903</td>
</tr>
</tbody>
</table>

A rotated pattern matrix was performed on the UWES. There were no items with factor loadings less than 0.3 on all factors, therefore all items were retained for further analysis. Three clear factors emerge. Although three factors emerge as suggested by the theory, these items do not correspond perfectly to the items defined by Schaufeli and Bakker (2003) as belonging to each of the questionnaire sub-dimensions. Factor 1 has the most items loading on the scale and accounts for the most variance (6 percent) after rotation of the factors. The second factor which also has a number of strong items loading on the
factor accounted for 3 percent of the total variance. Factor 3 accounts for the 4 percent of the variance.

The factor structure of the SOC questionnaire is presented in this section. Table 6 presents the data after extraction for the three factor solution to the UWES.

**TABLE 6**

TOTAL VARIANCE EXPLAINED FOR THE OVERALL SCALE OF THE SOC AFTER EXTRACTION (EXCLUDING FACTORS WITH EIGEN VALUES <1)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial Eigen values</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percentage of Variance</td>
<td>Cumulative percentage</td>
</tr>
<tr>
<td>1</td>
<td>6,567</td>
<td>22,646</td>
<td>22,646</td>
</tr>
<tr>
<td>2</td>
<td>2,319</td>
<td>7,997</td>
<td>30,643</td>
</tr>
<tr>
<td>3</td>
<td>1,735</td>
<td>5,982</td>
<td>36,625</td>
</tr>
<tr>
<td>4</td>
<td>1,593</td>
<td>5,493</td>
<td>42,119</td>
</tr>
<tr>
<td>5</td>
<td>1,410</td>
<td>4,864</td>
<td>46,982</td>
</tr>
<tr>
<td>6</td>
<td>1,313</td>
<td>4,528</td>
<td>51,510</td>
</tr>
<tr>
<td>7</td>
<td>1,169</td>
<td>4,031</td>
<td>55,542</td>
</tr>
<tr>
<td>8</td>
<td>1,097</td>
<td>3,782</td>
<td>59,323</td>
</tr>
<tr>
<td>9</td>
<td>1,000</td>
<td>3,450</td>
<td>62,773</td>
</tr>
</tbody>
</table>

A rotated pattern matrix was performed and indicated that three items have factor loadings less than 0.3 (item 3.3, 3.13, 3.10). Factor 1 corresponds with the Co subscale of the SOC and accounts for the most variance (4.4 percent) after rotation of the factors. The second factor accounted for 3.8 percent of the total variance and corresponds with the Me subscale. Factor 3 accounts for 3 percent of the total variance and corresponds with the
Ma subscale. A number of items did not correspond with the three sub-dimensions identified by Antonovsky (1987).

After the exploratory analysis, a confirmatory factor analysis was also performed on the MBI-GS, the UWES and the SOC. Confirmatory factor analysis (CFA) seeks to determine if the number of factors and the loadings of measured (indicator) variables on them, conform to what is expected on the basis of pre-established theory [link](http://www2.chass.ncsu.edu/garson/pa765/factor.htm) (accessed 11/11/2007). The Root Mean Square Error of Approximation (RMSEA), Hoelter Index, Bentler Bonett Index, as well as the Tucker Lewis Index were used to determine the goodness-of-fit. The Root Mean Square Error of Approximation (RMSEA) presented moderate support for the MBI model. The Hoelter Index, Bentler Bonett Index, as well as the Tucker Lewis Index, did not indicate a goodness of fit for the MBI model. All goodness of fit indicators for the UWES was found to be poor. The Root Mean Square Error of Approximation (RMSEA) presented moderate support for the SOC model (Antonosky, 1987). The Hoelter Index, Bentler Bonett Index, as well as the Tucker Lewis Index, failed to provide proof of goodness of fit for the SOC model.

**Correlation analysis**

Table 7 provides a summary of the correlation analysis results. The relationship between the total scores for the MBI (BO), UWES (WE) and SOC questionnaire (SOC), are highlighted in red.
### TABLE 7

CORRELATION BETWEEN MBI, UWES AND SOC

<table>
<thead>
<tr>
<th></th>
<th>WE</th>
<th>Vi</th>
<th>De</th>
<th>Ab</th>
<th>SOC</th>
<th>Co</th>
<th>Ma</th>
<th>Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>BO</td>
<td>R</td>
<td>-0.72</td>
<td>-0.68</td>
<td>-0.75</td>
<td>-0.53</td>
<td>-0.48</td>
<td>-0.36</td>
<td>-0.29</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Ex</td>
<td>R</td>
<td>-0.49</td>
<td>-0.50</td>
<td>-0.50</td>
<td>-0.32</td>
<td>-0.41</td>
<td>-0.30</td>
<td>-0.28</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Cy</td>
<td>R</td>
<td>-0.66</td>
<td>-0.57</td>
<td>-0.70</td>
<td>-0.51</td>
<td>-0.41</td>
<td>-0.29</td>
<td>-0.22</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.002</td>
</tr>
<tr>
<td>RPE</td>
<td>R</td>
<td>-0.55</td>
<td>-0.54</td>
<td>-0.56</td>
<td>-0.43</td>
<td>-0.30</td>
<td>-0.25</td>
<td>-0.17</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>0.022</td>
</tr>
<tr>
<td>WE</td>
<td>R</td>
<td>1.00</td>
<td>0.89</td>
<td>0.94</td>
<td>0.91</td>
<td>0.52</td>
<td>0.33</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Vi</td>
<td>R</td>
<td>1.00</td>
<td>0.78</td>
<td>0.71</td>
<td>0.46</td>
<td>0.30</td>
<td>0.32</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>De</td>
<td>R</td>
<td>1.00</td>
<td>0.76</td>
<td>0.52</td>
<td>0.33</td>
<td>0.37</td>
<td>0.37</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Ab</td>
<td>R</td>
<td>1.00</td>
<td>0.45</td>
<td>0.29</td>
<td>0.32</td>
<td>0.32</td>
<td>0.49</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Strong support was found for the hypothesis. Significant correlations between BO, WE and a SOC, as the results of the Pearson’s correlation matrix revealed significant relationships between all of the total scores and sub-dimensions of the MBI, UWES, and SOC.
FIGURE 1
THE RELATIONSHIP BETWEEN BO, WE AND SOC

SENSE OF COHERENCE
- Co
- Ma
- Me

R-value = +0.52

BO
- Ex
- Depersonalisation
- RPERSonal efficacy

R-value = -0.48

WE
- Vi
- De
- Ab

R-value = -0.72

350
From the empirical investigation it is evident that a Me, Cy and De triangle is extremely strongly manifested in the correlations.

**Regression analysis**

The results of the regression analysis are presented in table 8.
TABLE 8
MODEL SUMMARY OF REGRESSION EQUATION TO PREDICT BO

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Anova F-value</th>
<th>Anova p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictors:</td>
<td>0.781(d)</td>
<td>0.610</td>
<td>0.602</td>
<td>10.07</td>
<td>71.2</td>
<td>0.000</td>
</tr>
<tr>
<td>(Constant), De, Vi, Me, Ab</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE 9
REGRESSION COEFFICIENTS OF THE REGRESSION EQUATION TO PREDICT BO

<table>
<thead>
<tr>
<th>Model</th>
<th>Un-standardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>86.827</td>
<td>4.309</td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td>De</td>
<td>-1.567</td>
<td>0.231</td>
<td>-0.593</td>
<td>-6.778</td>
</tr>
<tr>
<td>Vi</td>
<td>-0.859</td>
<td>0.249</td>
<td>-0.269</td>
<td>-3.455</td>
</tr>
<tr>
<td>Me</td>
<td>-0.317</td>
<td>0.120</td>
<td>-0.152</td>
<td>-2.643</td>
</tr>
<tr>
<td>Ab</td>
<td>0.486</td>
<td>0.193</td>
<td>0.187</td>
<td>2.514</td>
</tr>
</tbody>
</table>

Table 8 shows that that 60% of BO can be explained by SOC and WE. Three of the UWES sub-dimensions and one of the SOC sub-dimensions were found to be significant predictors of BO. The De ($\beta=0.59; t=6.78; p=0.000$), Vi ($\beta=0.27; t=3.46; p=0.001$), Ab ($\beta=0.19; t=2.5; p=0.013$) and Me ($\beta=0.15; t=2.64; p=0.009$) sub-dimensions together accounted for 60% of the variance in BO. The remaining sub-dimensions did not contribute significantly to the BO model.
Biographical variables

Age These correlations were all positive, indicating that the older the female academic is, the higher her scores on Co, Vi and Ab will be. It should be noted that although these correlations are significant, the size of the r-value (size of the correlation) was small.

Experience The analysis indicated that the years of employment (experience) have an influence (effect) on one of the sub-dimensions of the SOC, namely Co (r=0.20, p=0.005). The significant correlation between the years of employment and Co indicates that with increasing experience in her work, the ability to perceive her internal and external environments as making cognitive sense, improves. The correlation value of 0.2 obtained in this study, is however still considered small. Therefore interpretations need to be made carefully.

Population groups An independent samples t-test was conducted to compare the differences in the mean scores between black and white female academics on the total scales and sub-dimensions of the MBI, UWES and SOC. Due to the statistically insignificant number of respondents in the Brown and Asian groups, these groups were excluded from the analysis. None of the p-values were smaller than 0.05, meaning that the female academics from different population groups do not demonstrate different BO, WE or SOC patterns.

Marital Status was assessed using a one-way analysis of variance (ANOVA). Respondents were divided into three groups based on their relationship status, namely; group 1 (single respondents, n=35), group 2 (in a permanent relationship, married, living together or engaged, n=130), and group 3 (divorced, widowed or separated, n=22). There was a statistically significant difference between the three groups at the p<0.05 level on the SOC total scale [F(2,184)=4.90; p=0.01], as well as on Co [F(2,184)=3.62; p=0.03] and Ma [F(2,184)=4.15; p=0.02]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for group 3 (divorced, widowed or separated) (M=125.86; SD=20.85) was significantly different from group 1 consisting of females in a relationship (M=137.08; SD=19.24) on the SOC total scale. On the Co subscale, group 2
(M=47.52; SD=8.18) was found to be significantly different from the mean scores for group 1 (M=43.66; SD=0.99). On the Ma subscale, those in a relationship (M=46.34; SD=7.13) was found to be significantly different from the divorced/ separated/ widowed group(M=43.45; SD=7.64). No significant differences were found on the total scale or sub-dimensions of the MBI and the UWES between the three groups.

Regarding the level of education, the only statistically significant difference between the four groups presented at the p<0.05 level on the Vi sub-scale of the UWES [F(3,183)=2.96; p=0.03]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for respondents with a masters degree (M=19.14; SD=4.79) was significantly different from respondents with a doctoral degree (M=21.65; SD=5.37). The implication is that female academia that have completed their doctoral degree is significantly more energetic, resilient while working and willing to invest time in their work even in the face of difficulty.
**TABLE 10**

THE MOST SIGNIFICANT CORRELATIONS BETWEEN VARIOUS BIOGRAPHICAL VARIABLES AND THE DIMENSIONS OF EO, WE AND SOC

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Marital status</th>
<th>Highest qualification</th>
<th>Years employed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vi (WE sub-scale)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ r=0,16</td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P=0,03</td>
<td></td>
<td>r=0,034</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>f=2,963</td>
<td></td>
</tr>
<tr>
<td><strong>Ab (WE sub-scale)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>r=0,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p=0,007</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total SOC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f=4,903</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p=0,008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Co (SOC sub-scale)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td>+ r=0,20</td>
</tr>
<tr>
<td></td>
<td>r=0,18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p=0,05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ma (SOC sub-scale)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f=4,148</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p=0,017</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

In terms of BO levels, the sample manifested with average levels of Ex, coupled with strong indications of increased Cy and moderate indications of a decease in their sense of professional efficacy. Hence, the typical female academic will experience average levels of physical, emotional and mental Ex, associated with average feelings of being tired, “drained” and “used up”. The job-demands resources (JD-R) model posits that job demands are associated with Ex, whereas lacking job resources are associated with Cy and disengagement with the job (Demerouti, Bakker, Nachreiner and Schaufeli, 2001).
RPE is also believed to develop as a result of the absence of the necessary job resources (Demerouti et al. 2001). It is deduced that both unreasonably high job demands and an absence of job resources manifested as contributors to BO in female academics.

The typical female academic in this study presented with high levels of Cy, implying negative, detached feelings for example towards students, colleagues and work in general. This is a warning sign that should not be overlooked by health professionals and the management of tertiary institutions in South Africa. In the phase model of BO, proposed by Golembiewski and Munzenrider (1988), Cy (depersonalisation in the original MBI) initiates the BO process. The female academia’s high score on Cy in this study highlights the interpersonal dimension of BO, and also indicates a negative, callous and detached response to various other aspects of the job. The Phase Model of BO maintains that depersonalisation is initially experienced because a certain degree of professional detachment is often functional in dealing with others in a more ‘objective’ manner (Golembiewski & Munzenrider, 1988, Golembiewski, Boudreau, Munzenrider & Luo, 1996). The demands incurred through increased class sizes, an increased need for personal guidance from student and escalating interpersonal contact and communication, female academics are relying heavily on this state of “professional detachment”, in order to protect themselves from feelings of depletion. Detachment becomes depersonalisation or Cy, impairing the ability to develop personal relationships (Basson, 2002). The particularly high degree of Cy present, is an indication that the next phase in which the development of personal relationships are impaired, will be a problem in this target group of female academics. The inability to develop and maintain interpersonal relationships leads to impaired coping, as social support from colleagues, friends and family members are not optimally utilized when interpersonal relationships are strained. This is an indication that female academics will probably develop more advanced stages of BO.

As the score for RPE of the female academics shows a somewhat increased tendency, it is noteworthy that their self-appraisal in terms of their own ability to cope with the demands of their jobs shows negative signs. As the sense of PE is reduced, self-evaluation becomes more negative and feelings of competence, productivity and achievement at
work dwindles. As BO in its early stages are often overlooked or mistaken for simple "tiredness", it is possible that the signs of BO that are manifested (Cy and RPE), may also be overlooked or ignored in this target group.

In terms of the manifestation of WE in the sample of female academics, measured against the norms provided by Schaufeli and Bakker (2003), the scores for total WE, Vi, De and Ab were all just above average, indicating a positive trend. Female academics are thus in general fairly energetic, mentally resilient, strongly involved in their jobs, enthusiastic, proud, inspired and happily engrossed in their work. Compared with a group of Dutch managers, these scores were fairly high, with the exception of Ab (which was a little lower). The manifestation of WE in female academia was however a little bit lower than the scores for physicians in the Dutch data base. The female academia’s scores were notably higher than the scores for the international police force.

Schaufeli and Bakker (2001) note that WE, and specifically “Vi”, is characterised by mental resilience and the willingness to invest effort in one’s work, even in the face of difficulty. This may explain why WE is manifested in the female academics studied, even though there are definite signs of BO (increased Cy and RPE) in the target group. The female academics invest effort in their work, even though difficulties are experienced in the fulfilment of these duties. These difficulties include decreasing resources to get the work done, as well as increasing demands by faculty, students and parents. These demands often take the form of increased lecturer-student ratios, increased demand for research outputs, exhausting interpersonal relationships with students and escalating administrative duties. The role of mergers, restructuring, unilateral changes in work conditions and a resulting lack of promotional opportunities, will also have a negative effect on the emotional wellness of the target group.

Schaufeli and Bakker (2001, 2004) extended the JD-R model by including WE- as measured independently from BO- and by adding indicators for health impairment and organisational commitment (for example low turnover intention) as possible consequences of BO and WE, respectively. This Model is referred to as the
Comprehensive BO and WE (COBE) Model. Based on the results it is clear that there is not a perfectly negative correlation between BO and WE (or their respective sub-dimensions). The conviction of Schaufeli and Bakker (2001) that BO and WE should be measured independently as separate but related constructs, is confirmed in this target group.

As this study is undertaken from a salutogenic paradigm, it is noteworthy that, from a positive psychological point of view, BO is redefined as an erosion of WE with the job (Maslach & Leiter, 1997). What started out as important, meaningful, and challenging work, becomes unpleasant, unfulfilling and meaningless. Energy turns into Ex, involvement turns into Cy, efficacy turns into RPE. Institutions of Higher Education in South Africa are faced with this challenging scenario. From a preventative point of view, the danger exists that, if BO symptoms are not managed effectively and contained, academic work that is viewed as important, meaningful and challenging, may soon become unpleasant to the females in this study. They may start to experience it as unfulfilling and meaningless. From the empirical study it was already established that, in this sample, involvement has turned into Cy, with the associated negative symptoms.

In terms of the total score for the SOC, the target group scored at 128,22, which is lower than the estimate of the mean value for the SOC (137), as calculated by Strümpfer and Wissing (1998). When compared to another all female South African sample, consisting of working mothers (Herbst, 2006), the score is also lower than the 134,26 scored by the working mothers. Considering the sub-dimensions, participants scored lower on the Ma and Me sub-dimensions than for example a group of scientists and engineers tested in South Africa. A slightly higher score was achieved for the Co scale, which might indicate that the female academics do indeed understand their work situation and the demands put before them, but feel that they are not able to manage their work situation. They also experience difficulty in understanding the meaning in their current situation. It is interesting to note that the working mothers showed a similar pattern, namely lower scores on Me. Hence, the scores calculated for the females in this study shows a trend,
similar to what was found in other local and international studies (Antonovsky, 1991; Johnson, 1992).

A good load balance, that is an under-overload balance in life experience, provides the Ma component. Under-load refers to when there is not enough direction, or when the individual is seldom called upon to exercise his or her abilities or to actualise his or her potential. Overload refers to the individual setting a pace too rapid for demanded development, or never having enough time and energy to do everything or not having enough resources to do everything. The question is thus whether the female academics perceive the resources at their disposal as adequate to meet the demands posed by the stimuli (Antonovsky, 1987; De Wet, 1998). Based on the empirical evidence from the MBI, the answer is probably not, which in turn has a negative effect on the Ma component of the SOC.

Me can be described as an individual’s emotional assessment of situations as coherent and worthy of investment (Cloete & Stuart, 2003). It refers to the extent to which the individual feels that life also makes sense on an emotional, rather than a cognitive level (Coetzee & Rothman, 2004). As the Me score showed a decreased tendency, it confirmed that female academics struggle to make sense of their lives on an emotional level.

Considering the eight possible types of combinations that emerge when the Co, Ma and Me are dichotomized, Antonovsky (1987) predicts possible future behaviour. He argues that high Co, combined with low Ma, leads to a strong desire to change and are therefore highly unstable. The centrality of Me is seen in considering the two final types: If the respondents are high on Co, thus knowing the rules of the game and believing that the resources are at their disposal to play successfully, but without caring (type 5), they come to fall behind in their understanding and lose their command of resources.

Antonovsky (1987) concludes that the three components of the SOC are of unequal centrality. The motivational component of Me seems crucial. Without it, being high on Co or Ma is likely to be temporary. The outcome predicted by Antonovsky (1987) in such
a situation, is that the person might experience pressure to move away from her current situation. He notes the possibility that the person might experience pressure to move down from their current situation, as they continue to lose command of resources.

Strong support was found for the existence of a significant relationship between BO, WE and SOC in female academics. The empirical study revealed significant relationships between the total scores and sub-dimensions of the MBI, UWES, and SOC. BO and WE, as well as BO and SOC, are correlated negatively. The SOC was however positively correlated with the experience of WE. The implication is that a strong SOC will indeed act as a buffer against the development of the pathogenic state of BO. The opposite is however also true, in that a female academic with a low SOC will be vulnerable to the development of BO (Ex, Cy and a feeling of RPE). A strong SOC will help employees to understand stressors and to regard them as manageable and meaningful. Therefore, a strong SOC will moderate the effects of job stressors on Ex and contribute to the perception of professional efficacy of employees (Ortlepp, 1998; Steyn, Rothmann & Mostert, 2004).

Testing whether WE would be positively correlated with a SOC, also received strong support, as the total scores and sub-dimensions of the UWES and the SOC were found to be positively correlated with each other. A female academic with a SOC will thus be much more likely to experience WE. This implies feelings of energy, resilience, persistence, enthusiasm and inspiration.

From the empirical results the strength of the correlation between the Me component of the SOC and the BO dimension, Cy, draws attention. This is of specific importance to this study, as the population group scored particularly high on the Cy dimension of BO. The question invariably arises whether it has to do with the respondents failing to find meaning in their jobs. As previously explained, respondents with high Cy levels is expected to “depersonalise” relationships with care recipients and colleagues. The result of such a process is that the female academic experiences a breakdown in her relationship with the students and work colleagues. They start to “expect the worse” from these
relationships and, in an effort to protect themselves from further emotional Ex, reduce personal contact between themselves, students and colleagues to the bare minimum. Van Emmerik (2002) found that assistance from colleagues and a supportive departmental climate, together with practical assistance, reduced Ex in academics. Avoiding this assistance is thus not a useful or desirable strategy.

Barkhuizen, Rothmann and Tytherleigh (2004) also noted the increased levels of Ex and Cy in their study of BO in academics in a Higher Education Institution in SA. They attributed this trend to a decrease in resources, including unfair rewards, poor management, poor social support and a lack of participation, which in turn contributes to the experience of a reduction in PE. The result of this isolation is that the female academic is unfortunately also cut off from emotional or other support that might be forthcoming from these interpersonal relationships. This in itself has the potential to form a “negative spiral”, in that the loss of meaning leads to Cy and isolation, which in itself then contributes to the loss of a sense of meaning.

From the above it is evident that there is a strong negative correlation between SOC and WE. Again, the SOC construct “Me” plays a central role. Strong negative relationships between Me (SOC) and the total WE, as well as the WE constructs Vi and De, are observed. It is evident that being able to find meaning in their jobs play a very important role in the female academic’s ability to achieve WE (specifically being Vi and De). Although slightly less pronounced, significant relationships between all three SOC dimensions and all three WE dimensions are present. Antonovsky (1987) was convinced that a person with a high SOC will be more likely to define stimuli as non-stressors and to define the stress attributed to stimuli perceived as stressors as benign or irrelevant.

A strong negative correlation is found between the total scores for BO and WE. Cy reflects indifference or a distant attitude towards work. It refers more to the work itself, rather than to personal relationships at work. It is seen as a negative, callous, or detached response to various aspects of the job. It is specifically used for jobs where there isn’t constant interpersonal interaction between the burned-out employee and his/her subject
(recipient), as would for example be the case with a nurse and her patient. Another very strong negative correlation that is manifested, is the negative relationship between Cy and De. As the female academics in this target group scored very high on Cy, the obvious conclusion is that their De to the academic job that they are performing currently would be on the decline.

It is noteworthy that the correlation between the two concepts (although very strong) is however not absolute, confirming the theoretical model of Schaufel and Bakker (2003), that BO and WE are negatively correlated, but are not the exact opposites of each other. It is theoretically possible for an academic to feel burnt-out, but still experience the Vi, De and Ab that characterises WE. It is for example possible that feelings of BO is experienced when lecturing to a large group, but the academic may still become totally engrossed in another aspect of the job, for example research. The reason for this is that WE is defined as mental resilience and the willingness to invest effort in one’s work, even in the face of difficulty. Resilience is thus an important aspect in the manifestation of WE.

A regression analysis was performed on the data. Based on the literature study, a judgement decision was made to perform a regression analysis on BO. The De, Vi and Ab (WE) and Me (SOC) sub-dimensions together accounted for 60% of the variance in BO. The remaining sub-dimensions did not contribute significantly to the BO model.

The implication of this finding is that the De, Vi and Ab sub-dimensions of WE, as well as the Me subscale of SOC, can predict 60% of the variance in BO levels in female academics. The Co and Ma sub-dimensions of the SOC did not feature significantly in predicting the occurrence of BO. From these results it can be deducted that the Me subscale of the SOC plays a very important role in moderating BO levels. It is noteworthy that the emotional element of the SOC (Me) again plays a significant role. As Feldt (1997) explained, the strong SOC person is more likely to define a stressor as a welcome challenge and feel confident that it can be handled well.
Biographical variables

Age An exploration of the manifestation of BO, WE and SOC across the different demographical groups revealed a number of aspects. There is a positive relationship between the age of the female academic and her scores on the Vi, Ab and Co sub-dimensions. Vi and Ab are sub-dimensions of the WE construct and Co is often seen as the core dimension of SOC. This implies that the older the female academic, the higher her scores on Vi, Ab and Co are expected to be.

Schaufeli (2004) reported a weak positive relationship of WE with age. Wissing and Van Eeden also observed clear indications that older employees score higher on various indexes of psychological well-being. This is in accordance with the trends identified in the existing literature (Antonovsky & Sagy, 1985; Schaufeli, 2004; Wissing & Van Eeden (1997). Labour market trends indicate that older workers play an increasingly important role in the workforce today. (Eichar, Norland, Brady & Fortinsky, 1991; Theodore & Lloyd, 2000). The work orientation of older female academics is thus of theoretical and practical interest. Clark, Oswald, and Warr (1996) reported higher levels of job satisfaction in workers over 40 and suggest that this is because of increased coping capacity, greater stability and ego strength with age. Theodore and Lloyd (2000) found that as workers age, they become more inwardly focussed and invest their efforts in the enjoyment of the process, the quality of the experience and emotional connectedness. Schaufeli (2004) also observed a weak positive relationship between WE and an increase in age. Oshagbemi (1997) found that women tend to be slightly more satisfied with their academic careers after the age of 45, than their male colleagues.

A significant positive relationship was found to exist between the employees’ years of employment as an academic and the Co subscale of SOC. This means that the longer the female is employed as an academic, the more she is expected to understand the demands of the job on a cognitive (rather than an emotional) level. Hence, the long service academic is expected to have a better cognitive understanding of the demands of the academic profession.
Hickson and Oshagbeni (1999) studied the effect of age and work experience on the satisfaction of academics (male and female) with teaching and research. The surprising result of their research was that the number of years experience had a different effect on academic teaching staff from academic research staff. The job satisfaction for academic teaching staff declined with increased years of service, while the job satisfaction of the academic research staff increased with years experience.

No significant differences could be found between the different population groups on BO, WE or SOC. This is interesting, as in the United States of America, Maslach (1982) found that black professionals are much less likely to suffer from burnout, because of a more supportive family and friendship network. Future research should investigate the reason for this difference between the current South African context and American results.

Female academics in a permanent relationship (married, living together or engaged to be married) scored significantly higher on the total SOC scale, as well as on the sub-dimensions of Co and Ma. The support experienced from being in a permanent relationship has a positive effect on the female’s cognitive evaluation of the job (Co), as well as on how she perceives the load balance experienced (Ma). Being in a permanent relationship may moderate the effect of stress inducing factors experienced in the work life.

Regarding the highest level of completed qualifications, significant differences were found on one of the dimensions of WE, namely the Vi dimension. Academics with a doctoral degree scored significantly higher than respondents with a masters degree. As academics with a doctoral degree typically are employed on the senior lecturer and higher organisational level, it may also imply that being in the possession of a doctoral degree and being employed on a higher organisational level can be associated with higher levels of Vi. Tytherleigh (2003) argues that the levels of occupational stress reported by women working in Higher Education are contingent on job-related factors, for example seniority.
Evidence from the existing literature proves that SOC increases with educational level (Johnson, 1992), but not significantly so. This is not surprising, as knowledge is a type of resistance resource, albeit predicated on numerous antecedent social conditions.

LIMITATIONS

Studies on the manifestation and relationship between BO, WE and SOC, specifically in females, are very scarce. The second construct, namely WE, together with its measuring instrument, the UWES, is a recently developed construct, which made it challenging to find information and existing research results (locally and internationally on the construct). Compared to the BO and SOC construct, little research has been conducted on the construct to date.

No studies could be found on the relationship between BO (using the MBI to measure BO), WE (using the UWES) to determine the levels of WE) and SOC (using the SOC). The fact that a cross-sectional design was used creates a limitation in terms of solving cause and effect issues. It is recommended that longitudinal research be done in future to investigate these aspects. The relatively small sample size (187 respondents) implies that caution should be exercised when generalizing to the general population of female academics in South Africa.

The sample represented only two tertiary education institutions. The fact that the research included female academics exclusively makes it impossible to compare scores between male and female academics. The study relies exclusively on self-report measures. Only one psychometric instrument was used for each construct and no objective indicators, for example actual turnover was included.

RECOMMENDATIONS

Research studies on specifically female academics are extremely limited, hence there is a need for future studies to investigate the experience of BO, WE and SOC in this study.
population. As the participants were only representative of two Institutions of Higher Education in South Africa, it is strongly recommended that female academia in other institutions in different geographical areas in South Africa also be studied, to confirm the research results. A larger sample size and additional biographical criteria (for example the number of dependants, care-giving responsibilities, primary breadwinner-role) will add value to the body of salutogenic knowledge available on the work-experience of female academics in the current South African context. The impact of the rapidly changing South African higher education landscape including the influence of mergers, forced transfers and redundancies should be studied in this population group.

CONCLUSION

The aim of this research was to determine whether there are significant levels of BO, WE and SOC in female academics at two tertiary institutions in South Africa and to investigate the nature of this relationship. It was concluded that evidence of all three constructs was found and that there is indeed a significant relationship between the three concepts.
REFERENCES


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**PUBLICATIONS TO BE SUBMITTED TO:**