WORK-RELATED WELL-BEING OF EMPLOYEES IN A SOUTH AFRICAN PARASTATAL

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

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Potchefstroom
November 2008

REMARKS

The reader is reminded of the following:

- The referencing and editorial style, as prescribed by the *Publication Manual* (5th edition) of the American Psychological Association (APA), was followed in this thesis. This practice is in accordance with the policy of the programme in Industrial Psychology of the North-West University (Potchefstroom Campus), which prescribes the use of the APA style in all scientific documents.

- The thesis is submitted in the form of three research articles.

DEDICATION

I entrusted my life in the hands of my Redeemer and he has fulfilled his promise to me. I strongly believe that the steadfast love of the Lord never ceaseth, his mercies never come to an end; instead, they are new every morning.

In memory of two gentlemen, my father and father-in law, who both shaped and inspired my life:

Adam Jimmy Katjene	Kgosiemang Earnest Setuke
1956-2005	1957-2005

May their souls find peace and eternal rest as they join the choir of angels in chorus:

"Holy, Holy, Holy Lord
Heaven and Earth are full of your Glory
Hosanna in the Highest"

"The ultimate measure of a man is not where he stands in times of convenience and comfort, but where he stands in times of controversy and challenge."

ACKNOWLEDGEMENTS

I would like to extend my sincere gratitude and appreciation to the following individuals for their invaluable contribution towards this research. Without their help and support this work would not have been produced:

- To God be the glory, honour and praise for bringing me this far in my academic journey.
- Prof. Ian Rothmann, a man of resilience and courage, who gave guidance patiently and made himself fully available even in trying times. Thanks so much for the statistical analyses. "U is dierbaar". You are living proof of the psychological strengths you research in academia.
- My wife Siphiwe, for her unwavering support and encouragement when the journey was difficult. Most importantly, I thank her for holding the fort in our home when I was an absent father and husband. I love you!
- My sons, Pakoegolebile who always questioned my unavailability and Kitsokeyaona who spent most of the nights beside me. You both kept me inspired, focused and motivated.
- My colleagues, who took the time to honestly fill in the questionnaires for the purposes of this study.
- Juanli Griesel, for language editing of this thesis, despite short notice and working under immense pressure.
- Susan Myburg and Johan Kruger, for all the Afrikaans translations in this study.

The financial assistance of the National Research Foundation (NRF) towards this research is hereby acknowledged. Opinions expressed and conclusions drawn are those of the author and not necessarily those of the NRF.

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SUMMARY

Topic: Work-related well-being of employees in a South African parastatal.

Key terms: Well-being, work engagement, job demands, job resources, psychological conditions, self-efficacy, ill health, organisational commitment.

The mandates for government-owned enterprises (parastatals) have drastically changed in light of the changes in the government's post-democratic dispensation. There are more pressures and obligations related to governance, business operations, sustainability and financial viability prescribed for these institutions. Parastatals have moved from fully utilising government subsidies and incurring more debts at the expense of government, to income-generating entities. This change has exposed parastatals to global challenges, experienced by all organisations related to human capital management. Employees are the most critical assets that assist organisations to fulfil their mandates and drive their competitive advantage. While organisations experience challenges and pressures in the market, employees are also positively and adversely affected, depending on their dispositions and general functioning. The extent of employee participation and involvement in their work roles impacts on the success of the institution. Thus, work-related well-being of employees is an integral part of any organisational functioning and this relates to interplay between constructs of job demands, job resources, psychological conditions at work, health, work engagement, self-efficacy and organisational commitment.

The general objective of this research was to study work engagement and its relationship with various other antecedents, mediators and outcomes of employees within a parastatal in the South African context. Furthermore, the study aimed to understand the relationships between factors of job demands, job resources, psychological conditions, self-efficacy and work engagement. In addition to the above, this study also aimed to determine relationships between psychological conditions, job demands, job resources, work engagement, self-efficacy, health and organisational commitment.

The findings are presented in three articles, each consisting of a brief literature review and an empirical study. A cross-sectional survey design was used. The study included 288 participants in a parastatal in different job categories and levels. The questionnaires used in

the empirical study comprised of the Work Engagement Scale, the Antecedents Scale, the Job Demands-Resources Scale, the Organisational Commitment Questionnaire, the Psychological Conditions Questionnaire, the Self-Efficacy Scale, the General Health Questionnaire and a biographical questionnaire. Exploratory factor analyses were carried out to determine the construct validity of the measuring instruments. Pearson-product moment correlation coefficients were used to assess the relationships between the variables, while multiple regression analyses were used to investigate the predictive value of factors on each other.

The results showed that psychological meaningfulness and psychological availability were significant predictors of work engagement, with person-environment fit and growth opportunities in the job as strongest predictors of psychological meaningfulness. Person-environment fit was the strongest predictor of work engagement and psychological availability was best predicted by physical resources.

Overload and psychological meaningfulness were the best predictors of work engagement. Growth opportunities in the job and organisational support were the best predictors of psychological meaningfulness, which also strongly predicted work engagement. Psychological availability was found to be positively related to organisational support and self-efficacy. Low psychological availability predicted physical and psychological ill health, while low psychological meaningfulness predicted psychological ill health. Work engagement was the strongest predictor of normative and affective commitment, while psychological meaningfulness strongly predicted normative commitment.

Recommendations for future research are made.

OPSOMMING

Onderwerp: Werksverwante welstand van werknemers in 'n semi-staatsinstelling in Suid Afrika.

Sleutelterme: Welstand, werksbegeestering, roleise, psigologiese kondisies, psigiese omstandighede, selfdoeltreffendheid, swak gesondheid, organisasieverbondenheid.

Sedert die nuwe regering se instelling van demokrasie het die mandaat van semi-staatsinstellings drasties verander. Daar word meer druk uitgeoefen en eise gestel in terme van die bestuur van besighede en riglyne en prosedures word streng neergelê vir die finansiële bestuur en voortbestaan hiervan. Semi-staatsinstellings het gemigreer van volkome beheerde dele van die staatsdiens wat 'n finansiële las was en heelwat kostes beloop het, na entiteite wat self 'n inkomste genereer. Hierdie veranderinge stel semi-staatsinstellings bloot aan internasionale tendense wat verband hou met mensehulpbronbestuur. Werknemers is die mees kritieke hulpbron wat organisasies in staat stel om hul kompeterende voordeel te realiseer. Net soos organisasies uitdagings en druk ervaar as gevolg van markbewegings, word werknemers ook positief en negatief beïnvloed as gevolg van hul posisie, uitkyk en algemene funksionering. Die mate waarin werknemers deelneem en betrokke is in hul werksrolle, beïnvloed die graad van hul sukses in die organisasie. Die werksverwante welstand van werknemers is 'n integrale deel van organisasiefunksionering en dit hou verband met die verhouding van werkseise, hulpbronne, pigiese omstandighede in die werksplek, gesondheid, werksbegeestering en organisasieverbondenheid.

Die algemene doel van hierdie studie was om werksbegeestering en die verhouding daarvan met verskeie ander antesedente, bemiddelende faktore en uitkomste in 'n semi-staatsinstelling in die Suid-Afrkaanse konteks te bestudeer. Die studie het verder ten doel gehad om die verhouding tussen faktore van werkseise, werkshulpbronne, psigiese omstandighede en werksbetrokkenheid en toewyding te verstaan. Die navorsing was verder ook gerig daarop om die verhouding te bepaal tussen psigiese werksomstandighede, werkseise, hulpmiddels, werksbegeestering, gesondheid en organisasieverbondenheid.

Die bevindinge word weergegee in drie artikels, elk met 'n kort literatuuroorsig en 'n empiriese studie. 'n Dwarssnee opname-ontwerp is gebruik. Die studie het 288 deelnemers ingesluit, waarvan almal werknemers van 'n semi-staatsintelling is, op verskillende

posvlakke en poskategorieë. Tesame met 'n biografiese vraelys is gebruik gemaak van die volgende vraelyste in die empiriese studie: die Algemene Gesondheidskaal, die Psigiese Omstandighede vraelys, die Werksbegeesteringsvraelys, die Organisasieverbondenheids-vraelys, die Antesedente Skaal, die Werkseise-hulpbronne vraelys en die Self-doeltreffendheids-vraelys.

Verkennende faktorontleding is gebruik om die konstrukgeldigheid van die vraelyste te bepaal. Pearson produkmoment korrelasiekoëffisiënte is gebruik om die verhouding tussen die veranderlikes te bepaal. 'n Meervoudige regressie-analise is gebruik om die voorspellingswaarde van die faktore op mekaar te bepaal.

In hierdie studie is bevind dat psigologiese betekenisvolheid en psigologiese beskikbaarheid beduidende voorspellers van werksbegeestering was, met persoon-omgewing passing en groeigeleenthede as die beste voorspellers van psigologiese betekenisvolheid. Persoon-omgewing passing was die beste voorspeller van werksbegeestering en fisiese hulpbronne was die beste voorspeller van psigologiese beskikbaarheid.

Verder was oorlading en psigologiese betekenisvolheid die beste voorspellers van werksbegeestering. Groeigeleenthede in die werk en organisasie-ondersteuning was die beste voorspellers van psigologiese betekenisvolheid, wat ook 'n sterk voorspeller was van werksbegeestering. Daar is bevind dat psigologiese beskikbaarheid positief verband hou met organisasie-ondersteuning en selfdoeltreffendheid. Lae psigologiese beskikbaarheid het fisiese en psigiese swak gesondheid voorspel. Lae psigologiese betekenisvolheid het psigologiese swak gesondheid voorspel. Werksbegeestering was 'n sterk voorspeller van normatiewe en affektiewe verbondenheid, terwyl psigologiese betekenisvolheid 'n sterk voorspeller was van normatiewe verbondenheid.

Voorstelle vir toekomstige navorsing is aan die hand hiervan gemaak.

CHAPTER 1

INTRODUCTION

This thesis deals with the work-related well-being of employees in a South African parastatal. More specifically, it focuses on work engagement, job demands, job resources, psychological conditions and self-efficacy, as well as the impact of these factors on employees' levels of commitment and health.

In this chapter, the background to the study is provided and the problem statement is discussed. Furthermore, the research objectives are set out and the research method is explained. The chapter concludes with a brief overview of the chapters of this thesis.

1.1 PROBLEM STATEMENT

The current global and local economic conditions have had a substantial impact on organisations and employees respectively (Tshabalala, 2004). Organisations have demanded a lot of their employees, in order to remain in the game. Employees' expectations for better working conditions are increasing as well.

South Africa has undergone many changes in the last 10 years, seeing structural and governance changes in government and in all private and non-profit organisations. Transformation into a democracy in South Africa brought about the restructuring and redesigning of organisations, including government entities (Olivier & Rothmann, 2007). This process left employees stressed, confused, insecure and unappreciated and these inherently affected households, careers and the general well-being of employees (Rothmann, Steyn, & Mostert, 2005).

Employees in all work settings experience immense pressure to perform and produce desired business results. Likewise, businesses are constantly making changes in order to improve on competitiveness and profitability. Every employee is thereby expected to dedicate their time and efforts to their work to aid their respective business units in achieving their ideals and objectives. Like any other institution of work, parastatals (state enterprises) present and experience different challenges (changes, globalisation, employment equity, and

empowerment) and with regard to their employees, factors such as sickness absenteeism, staff turnover, labour disputes and interpersonal conflicts are evident in their daily management (Viljoen, 2006)

Almost all organisations that aspire to be leading employers of choice in their industries are increasingly putting the total wellness of employees at the heart of the organisational existence and functioning. This is reinforced by the fact that organisations utilise human capital as a means to achieve their primary objective of being profitable. Recognition is given to this area, because without the 'human touch' in directing, coordinating and managing systems and processes in the workplace, companies and government departments respectively would not be sustainable in the long run. The focus on work-related well-being and wellness of individuals is critical in organisations in ensuring that decision-makers are able to respond responsibly and timeously to work-related problems affecting employees within the workplace at any given time (Tshabalala, 2004).

As the world changes, the field of work also changes and paradigm shifts are also made. The field of psychology has also evolved over time. After the Second World War, the pathogenic paradigm was predominant in the social and psychological spheres, where the focus was mainly on abnormality. This is the origin of 'pathos', explained as disease or ill-health. This focus was more curative in nature, which means that interventions and clinical strategies were mainly focused on treating ill-health (Seligman, 2002). The pathogenic paradigm emphasises the negative aspects of human existence rather than positive aspects that make up people who are fully functional (Seligman, 2002), from whom the motivation to live could be derived.

According to Antonovsky (1979), there are individuals who are coping well with everyday demands and stay healthy despite difficult encounters ranging from minor to traumatic experiences. In the quest to understand and conceptualise the phenomenon of why people stay healthy instead of becoming ill (the pathogenic frame of reference), this process saw the birth of a new paradigm called salutogenesis, which refers to the study of the origins of health. Strümpfer (1995) further broadened the scope of focus of salutogenesis where the focus was on physical health to include sources of strength, which he later named fortigenesis. Further arguments ensued as Wissing and Van Eeden (1997) strived to come up with a more encompassing terminology aimed to focus not only on the origins of psychological strengths derived from constructs such as salutogenesis and fortigenesis, but a

more encompassing construct, which is necessary to include the nature, dynamics and enhancement of psychological well-being. Wissing and Van Eeden (1997) suggested that the term psychofortology (the science of psychological strengths) be used as an area within psychology, where focus will be on well-being. Seligman and Csikszentmihalyi (2000) emphasise the emergence of positive psychology as a distinct move away from focusing directly on negative aspects of functioning, towards working on positive qualities that make people function effectively and live optimally. Hence work-related well-being wellness is central to human functioning and these constructs are of interest to organisations that value their employees.

Many definitions and descriptions exist on the wellness concept but, in short, it could be described as an active process of becoming aware and making choices toward a more successful existence (Witmer, Sweeney, & Meyers, 1998). The concept of total wellness of employees has seven dimensions which tries to tap into how balanced an employee has to be or strive towards. The seven dimensions of wellness are physical, emotional, intellectual, spiritual, occupational, social and environmental (Coetzee, 2004). Myers, Sweeney, and Witmer (2000, p. 252) comprehensively define wellness as "a way of life oriented toward optimal health and well being in which body, mind and spirit are integrated by the individual to live more fully within human and natural community. Ideally it is the optimum state of health and well being that each individual is capable of achieving".

Strümpfer (1990) identified six constructs in an attempt to conceptualise aspects of psychological *well-being*. These six constructs encompass the basic premises of both salutogenic and fortigenic functioning, namely sense of coherence, locus of control, self-efficacy, hardiness, potency and learned resourcefulness. The construct of self-efficacy is relevant for this study. Self-efficacy refers to an individual's belief that he/she can perform or execute specific tasks. It further relates to an enduring set of beliefs that one is able to cope effectively in a broad array of situations (Bandura, 1982). Bandura (1982) explains that self-efficacy expectations determine what activities people engage in, how much effort they will expend and how long they will persevere in the face of adversity. Well-known measuring instruments for self-efficacy are the Self-efficacy Scale (Sherrer & Maddux, 1982), indicating generalised self-efficacy beliefs. The eight item Self-efficacy Scale developed by Thoms, Moore, and Scott (1996) was used, measuring self-efficacy beliefs regarding a specific task or situation such as participation in self-managing work teams.

Extensive research has been undertaken by many researchers into work-related well-being constructs such as stress, burnout and work engagement (Coetzee & Rothmann, 2004; Jackson & Rothmann, 2005; Pienaar & Sieberhagen, 2005; Rothmann, 2003). These studies confirmed that there are many variables at play that are related and impacting on wellness and well-being of employees respectively in the workplace, ranging from availability of resources to being engaged in a particular work role.

Schaufeli and Bakker (2002) state that any occupation or occupational class can be viewed in terms of two elements, namely job demands and job resources. Job demands are physical, psychological, social or organisational aspects of a job, which require sustained physical and/or psychological effort (that is cognitive or emotional) and, as a consequence, are associated with physiological costs like work overload, personal conflicts and emotional demands such as dealing with problematic clients. Schaufeli and Bakker (2002) further state that job resources are those physical, psychological, social or organisational aspects of the job that reduce the job demands and consequently the associated physiological and psychological costs. They could also be functional in the achievement of work goals and stimulate personal growth, learning and development through social support, autonomy, feedback and job security. From a positive psychology perspective, factors such as optimism, spirituality and social support also influence well-being.

To understand how job demands and resources affect the erosion of engagement from an individual, the Conservation of Resources (COR) theory of stress (Hobfoll, 1989; Hobfoll & Freddy, 1993) is used as a reference point. The Conservation of Resources theory clearly articulates that people strive to obtain and maintain what they value (their resources). Individuals become disengaged when valued resources are lost, are inadequate to meet demands or do not give the expected output. This then influences organisations to engage in mechanisms aimed at identifying and crafting interventions focused on dealing with presenting problems in the workplace.

It can be concluded that changes in the political and economic climate demand the democratisation of the workplace and there is constant acknowledgement that the workforce needs to participate in organisational processes and be empowered in other different ways in their occupations. Any process that affects individuals in the workplace negatively (distress) or even positively (eustress) is viewed as a stressor. From the above it is clear that there are

many stressors across organisations that are specific and unique to those organisations, which generally impacts on the wellness and well-being of employees. In this study, stressors and work conditions will be investigated by first conducting interviews and then formulating the items accordingly.

In an attempt to understand what makes individuals to identify and relate to their work roles, different constructs that are important in this study are explained below to contextualise the study.

Engagement is defined as a positive, fulfilling, work related state of mind that is characterised by vigour, dedication and absorption. It is not a momentary and specific state, but a more persistent and pervasive affective-cognitive state, which is not focused on a particular object, event, individual or behaviour (Schaufeli, Salanova, Gonzalez–Roma, & Bakker, 2002). *Vigour* is characterised by high levels of energy and mental resilience while working, as well as willingness to exert effort and to persist even in difficult times. *Dedication* is characterised by a sense of significance in one's work, feeling enthusiastic, inspired and proud, and viewing it as a challenge. *Absorption* refers to an optimal state of experience where focused attention, a clear mind, unison of body and mind, effortless concentration, complete control, loss of self-consciousness, distortion of time and intrinsic enjoyment is experienced (Csikszentmihalyi, 1990). In recent studies, *organisational commitment* has been identified as a significant moderator of stress and has been linked to work engagement (Pienaar & Sieberhagen, 2005). Siu (2002) states that organisational commitment provides people with stability and a sense of belonging.

Taking the above context and constructs into consideration and referring to recommendations made in past research, it is apparent that research is still lacking with regard to the relationships between engagement, psychological conditions, self-efficacy, health and organisational commitment.

Meyer, Allen and Smith (1993) defined *organisational commitment* as the degree to which employees feel devoted to their organisation. Organisational commitment has three main facets, namely affective, continuance and normative (Meyer & Allen, 1997). Normative commitment refers to an employee's feeling of obligation to remain with the organisation based on the employee having internalised the values and goals of the organisation (Meyer &

Allen, 1991). The potential antecedents for normative commitment include co-worker commitment (Meyer & Allen, 1991), organisational dependability and participatory management. Dodd-McCue and Nelson (1996) assert that co-worker commitment is expected to provide normative signals that influence the development of normative commitment. Organisational dependability and perceived participatory management are expected to instil a sense of moral obligation to reciprocate to the organisation. Affective commitment refers to the employee's emotional attachment and identification with and involvement in the organisation (Meyer & Allen, 1991). The antecedents for affective commitment include perceived job characteristics, organisational dependability and perceived participatory management (Meyer & Allen, 1991). Continuance commitment refers to what the employees will have to give up if they were to leave the organisation, or alternatively, the material benefits to be gained from remaining in the organisation. This is based on the costs the employee associates with leaving the organisations (committed due to the high cost of leaving) (Allen & Meyer, 1990). Staying in the organisation becomes a morale issue rather than a voluntary process (Jaros, Jernier, Koehler, & Sincich, 1993).

According to Meyer et. al. (1993), the abovementioned three types of commitment exhibit a commonality that views commitment as a psychological state that firstly characterises the employee's relationship with the organisation and secondly has implications for the decision to continue or terminate membership in the organisation. Mowday (1998), as well as Raju and Srivasta (1994) suggest that committed employees are more valuable to the organisation than those without commitment. Mowday, Porter and Steers (1979) have identified four variables impacting on organisational commitment, namely personal characteristics (for example gender), job characteristics (such as task autonomy), work experiences (such as task significance), structural characteristics (which may include organisational commitment), size, organisational culture, leadership style, human resource management practices that influence salary, career prospects and possibilities for further education (Nijhof, De Jong, & Beukhof, 1998).

Many factors affect the *general health* of employees and according to Cotton and Hart (2003) stress is one of the factors in the workplace that can lead to poor psychological and physical health. Muldoon, Barger, Flory and Manuck (1998) state that quality of life includes the assessment of the functional status of the individual and the individual's appraisal of health as it affects their sense of well-being. The organisational health framework stipulates that it is

important for organisations to be concerned with the well-being of employees if it is linked to outcomes that affect organisational performance (Cotton & Hart, 2003).

It is very important to study the relationships between work engagement, psychological conditions, job demands, job resources, self-efficacy, health and organisational commitment because these constructs form a crucial component of individual as well as organisational functioning. It also emphasises the significant role that organisations must play in ensuring effective management of employees and endeavouring to improve their systems and processes, not only to ensure profitability, but also so that employees are bringing parts of themselves in roles that they occupy equally. The organisation cannot benefit if the individual contributions are not acknowledged and their negative experiences not resolved. This study aims to enquire about the state of work-related well-being in this parastatal, expand on the current theoretical underpinnings and determine a baseline for the parastatal in which the research is conducted. This is done to ensure that this human capital research can bring about desired changes, adaptations and modifications to systems, processes and practices to people management strategies. This study becomes crucial, as it will impact on the current culture of the parastatal to foster an employee-centric culture and sustainable profitability through people and what they offer the organisation.

Bandura (1997, 2001) wrote extensively on the *self-efficacy* concept around the belief of individuals in their perceived competence and successes. Bandura (1997, p. 3) defines self-efficacy as "beliefs in one's capabilities to organise and execute the courses of action required to produce given attainments". Schwarzer (1999) defines generalised self-efficacy as a global confidence in one's coping ability across a wide range of demanding or novel situations. On the other hand, self-efficacy as a specific construct is the belief in one's competence in specific situations. Wood and Bandura (1989, p. 408) defined self-efficacy as "...beliefs in one's capabilities to mobilise the motivation, cognitive resources and courses of action needed to meet organisational demands". These beliefs are domain specific, as a person's self-efficacy belief is very likely to differ depending on the activity to which it is related (Bandura, 1997, 1999). Jex and Bliese (1999) found a two-way interaction effect between job demands and generalised self-efficacy, where self-efficacy moderated the relationship between hours of work, quantitative overload, and the meaning of the task with some strain variables such as job dissatisfaction, physical symptoms, propensity to leave and poor organisational commitment playing a role. Many self-efficacy theorists believe that low

self-efficacy causes motivational problems. Bandura (1989) further mentions that employees experiencing low self-efficacy doubt their abilities, avoid difficult tasks, show low aspirations and exhibit weaker commitment levels.

Against this background, the following research problems are formulated. Firstly, there is a need to determine the antecedents and outcomes of work engagement in a South African parastatal. The second research problem is that no information is available regarding the relationship between self-efficacy, job demands, job resources, psychological conditions and work engagement in a parastatal within the South African context. Thirdly, no information is available regarding the relationship between psychological conditions, work engagement, health and organisational commitment. In addition, there is a need to validate the measuring instruments used for various constructs in this population group within the South African context.

The following research questions emerge from the above problem statement:

- Are the measuring instruments of work engagement, psychological conditions, self-efficacy, job demands, job resources, antecedents, health and organisational commitment used in this study valid and reliable in the designated sample?
- What are the antecedents and outcomes of work engagement in a parastatal?
- What is the relationship between self-efficacy, job demands, job resources, psychological conditions and work engagement?
- What is the relationship between psychological conditions, work engagement, health and organisational commitment?

Consequently, answers to the above-mentioned research problems will contribute to industrial psychology as a science in the following ways:

- The measuring instruments of work engagement, psychological conditions, self-efficacy, job demands, job resources, antecedents, health and organisational commitment will be validated in a previously untested sample.
- The antecedents and outcomes of work engagement in a parastatal will be determined.

- Information will exist on how self-efficacy, job demands, job resources, psychological conditions and work engagement relate to each other.
- The relationship between psychological conditions and work engagement and the impact on health and organisational commitment will be established.

1.2 RESEARCH OBJECTIVES

The research objectives are divided into both a general objective and specific objectives.

1.2.1 General objective

The general objective of this research is to study work engagement and its relationship with various other antecedents, mediators and outcomes of employees within a parastatal in the South African context.

1.2.2 Specific objectives

The specific objectives of this study are as follows:

- To validate the measuring instruments of work engagement, psychological conditions, self-efficacy, job demands, job resources, antecedents, health and organisational commitment.
- To evaluate the antecedents and outcomes of work engagement.
- To investigate the relationships between self-efficacy, job demands, job resources, psychological conditions and work engagement.
- To determine the effects of psychological conditions on work engagement, organisational commitment and health.

1.3. RESEARCH METHOD

The research method for each of the three articles submitted for the purposes of this thesis consists of the applicable literature review focusing on the conceptualisation of relevant terminology and constructs and empirical studies.

1.3.1 Research design

A survey design will be used to achieve the research objectives and specifically the cross-sectional design where a sample will be drawn from the target population at a particular time. Cross-sectional designs are also used to assess interrelationships among variables within the target population group (Shaughnessy & Zechmeister, 1997). Questionnaires are used to gather data in a non-random field survey.

1.3.2 Participants

The study population consisted of employees (N=288) within a parastatal. Questionnaires were distributed to employees across the organisation. The respondents included 51,4% females and 48,6% males. Different language groups were included in the study. A total of 42,8% were speakers of African languages, 30,9% were Afrikaans-speaking and 16,3% were English-speaking. The age distribution pointed to 51% of employees between 31-40 years of age. In total, 40% of participants have been in service between 11-20 years. 47,9% reported to have obtained grades 10, 11 and 12 and 13,2% of participants are in possession of a postgraduate qualification. A total of 46,6% of participants reported to be partially satisfied with personal relationships. A total of 57,6% of the participants reported to be very satisfied with their jobs.

1.3.3 Measuring instruments

The battery of questionnaires used in the empirical study consisted of seven measuring instruments and a biographical questionnaire. The instruments are the *Work Engagement Scale* (WES) (May, Gilson, & Harter, 2004); the *Job Demands Resources Scale* (JDRS) (Barkhuizen & Rothmann, 2006); the *General Health Questionnaire* (GHQ) (Goldberg and Hillier, 1979); the *Psychological Conditions Questionnaire* (PCQ) (May et al., 2004); the *Self-efficacy Scale* (SES), the *Antecedents Scale* (AS), the *Organisational Commitment Questionnaire* (OCQ) (Meyer et al., 2003). A *biographical questionnaire* will also be designed to gather information on gender, position held, education, years of experience, years in service, marital status, satisfaction with relationships and satisfaction with the job.

The *Work Engagement Scale* (WES) as developed by May et al. (2004) was used to gather information about how employees react to various aspects of their work and work situation. All items used for the scale, used a 5-point agreement-disagreement Likert format from 1 (*never*) to 5 (*always*). The items reflected each of the three components of Kahn's (1990) conceptualisation of work engagement, namely cognitive, emotional and physical engagement. Work engagement was measured by 18 items ($\alpha = 0,62$). Olivier and Rothmann (2007) found a one-factor engagement model consisting of cognitive, emotional and physical resources ($\alpha = 0,72$), which was consistent with findings by May et al. (2004) that used fewer items that demonstrated good reliability and represented cognitive, emotional and physical engagement items ($\alpha = 0,77$).

The *Job Demands-Resources Scale* (JDRS), which was developed by Barkhuizen and Rothmann (2006) to measure job demands and job resources, consists of 68 items. The questions are rated on a five point scale ranging from 1 (*never*) to 5 (*always*). The dimensions of the JDRS that were measured include pace and amount of work, mental load, emotional load, work variety, opportunities to learn, work independence, relationship with colleagues, relationship with immediate supervisor, ambiguities of work, information communications, participation, contact possibilities, remuneration and career opportunities. Rothmann, Mostert and Strydom (2006) found five dimensions namely Growth Opportunities ($\alpha = 0,86$), Organisational Support ($\alpha = 0,92$), Advancement ($\alpha = 0,83$), Overload ($\alpha = 0,76$) and Job Insecurity ($\alpha = 0,89$). The highly acceptable alpha coefficients ranging from 0,76 to 0,92 were obtained (Nunnally & Bernstein, 1994). The scale shows acceptable internal consistency and was found to be valid.

The *General Health Questionnaire* (GHQ) of Goldberg and Hillier (1979) is used to measure health. For the purposes of this study only 13 items relating to Physical Ill Health and Psychological Ill Health were used. Responses were given on a 5-point Likert scale from 1 (*never*) to 5 (*always*). An example of items representing Physical Ill Health is "been getting pains in various parts of the body" and an example of items for Psychological Ill Health is "been getting scared or panicky for no good reason". The alpha coefficients found in this study are as follows: Psychological Ill Health ($\alpha = 0,80$) and Physical Ill Health ($\alpha = 0,85$).

The *Psychological Conditions Questionnaire* (PCQ) of May et al. (2004) has been used in the study by Olivier and Rothmann (2007) and all subscales were included, i.e. Psychological

Meaningfulness was measured by six items (e.g. "the work I do on this job is very important to me"). Psychological Safety was measured by 3 items (e.g. "I am not afraid to be myself at work"). Psychological Availability was measured by averaging 5 items (e.g. "I am confident in my ability to think clearly at work"). A principal axis factor analysis with a direct oblimin rotation was subsequently carried out and resulted in the following factors being included: Psychological Meaningfulness (6 items) and Psychological Availability (5 items). The alpha coefficients for the psychological conditions, namely Psychological Meaningfulness, Psychological Safety and Psychological Availability items varied between 0,71 and 0,90 in the study of May et al. (2004).

A task-specific *Self-Efficacy Scale* (SES) was specifically designed for the purposes of this study to evaluate the extent to which the participants are confident in their tasks and support from their environment. The SES consisted of 13 items rated on a five point scale, ranging from 1 (*not confident at all*) to 5 (*extremely confident*). The dimensions which were measured include task mastery (I am confident that I can perform my job very well), physical and mental assertion (I am confident that I have relevant competencies for my work), persuasion (I am confident that I feel good about my job) and extrinsic motivation (I am confident of the support from my management).

The *Antecedents Scale* (AS) was used to measure person-environment fit (which is the relation of the individual employee to the role assumed in an organisation) (α = 0,93), co-worker norm adherence (interpersonal interactions with co-workers) (α = 0,48) This was measured by 3-10 items. Person-environment Fit was measured by 4 items (e.g. "Does your work give you the feeling that you can achieve something?" and co-worker norms by 3 items (e.g. "I go along with the norms in my group of co-workers". The degree to which individuals possess resources to become available for engagement was assessed by averaging 7 items (e.g. "Does your job offer you the possibility of independent thought and action?). Self consciousness was measured by 3 items (e.g. "I don't worry about being judged by others at work"), Organisational Support (supervisor & colleagues) was measured by 16 items (e.g. "If necessary, can you ask your colleagues for help?"). Growth was measured by 10 items (e.g. "Does your job offer you opportunities for personal growth and development?).

The *Organisational Commitment Questionnaire* (OCQ) as developed by Meyer et al. (2003) is used to measure the extent to which employees feel attached to the organisation. This

questionnaire consists of 18 items answered on a Likert scale varying from 1 (*never*) to 5 (*always*). An example of a question relating to Affective Commitment would be "I would be very happy to spend the rest of my career in this organisation", while an example of Continuance Commitment would be "It would be very hard for me to leave the organisation right now, even if I wanted to". Lastly, an example of Normative Commitment would be "My organisation deserves my loyalty." MacDonald and Makin (2000) reported an alpha coefficient of 0,84. Heymans (2002) reported a reliability coefficient of total score = 0,80, Affective Scale = 0,69; Continuance Scale = 0,53 and Normative Scale = 0,74. The alpha coefficients in this study in support of the South African context are as follows for Normative Commitment (α = 0,84), Continuance Commitment (α = 0,74) and Affective Commitment (α = 0,71).

A *biographical questionnaire* is used to gather information about the demographic characteristics of the population, such as gender, marital status, language, age, education level, years of employment and employment category.

1.3.4. Statistical analyses

The statistical analysis is carried out with the help of the SPSS-program (SPSS, 2008). Cronbach alpha coefficients (α) were used to assess the internal consistency of the measuring instruments (Clark & Watson, 1995). Descriptive statistics such as means, standard deviations, skewness and kurtosis) were used to analyse data.

Exploratory factor analysis was carried out to determine the construct validity of the instruments in the following manner: First, a simple principal components analysis was conducted on the items of the scales. The eigenvalues and scree plot were studied to determine the number of factors. Then, principal axis factor analysis with a direct oblimin rotation was conducted if factors were related ($r > 0.30$), after which a principal axis factor analysis with a varimax rotation was used if the obtained factors were not related. Pearson product moment correlation coefficients were used to assess the relationships between variables. Multiple regression analyses were used to assess the relationships between dependent and independent variables. Multiple regression analyses were used to investigate the predictive or mediating effect between variables and attributes. In terms of significance, it was decided to set the value at 95% confidence interval level ($p < 0,05$). Effect sizes (Steyn,

1999) were used to decide on the practical significance of the findings. A cut-off point of 0.30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients. The correlation between an independent variable and a dependent variable reflects variance shared with the dependent variable (Tabachnick and Fidell, 2001).

1.3.5 Research procedure

The Chief Executive Officer of the parastatal will be approached to seek permission to use employees as subjects in this study. After approval has been granted, questionnaires will be sent to all employees at random. A coordinator from the human resources division will be appointed from the parastatal, to manage the distribution and return of the questionnaires.

1.4 CHAPTER DIVISION

The chapters of this thesis are presented as follows:

Chapter 1	Introduction, problem statement and objectives
Chapter 2:	Antecedents of work engagement in a South African Parastatal
Chapter 3:	Self-efficacy, job demands, job resources, psychological conditions and work engagement in a South African Parastatal
Chapter 4:	Psychological conditions, work engagement, health and organisational commitment in a South African Parastatal
Chapter 5:	Conclusions, limitations and recommendations

1.5 CHAPTER SUMMARY

In this chapter, both the background to this study and the problem statement were discussed. This was followed by a broad contextualisation of the study in terms of relevant theoretical constructs whereupon general and specific objectives were explained. Following this, the research method, which included the research design, participants, measuring instruments, method of data analysis and research procedure used in this research, were explained. The chapter concludes with a brief overview of the chapters presented in this thesis.

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CHAPTER 2

RESEARCH ARTICLE 1

ANTECEDENTS OF WORK ENGAGEMENT IN A SOUTH AFRICAN PARASTATAL

ABSTRACT

The objective of this study was to evaluate the antecedents and outcomes of work engagement. An available sample (N=288) of cross-functional employees within a parastatal in South Africa was taken. An adapted version of the Work Engagement Scale, Psychological Conditions Questionnaire, Antecedents Scale, and a biographical questionnaire were administered. The findings indicated that psychological meaningfulness and psychological availability were significant predictors of work engagement. Person-environment fit and growth opportunities in the job were the best predictors of psychological meaningfulness, with person-environment fit as the best predictor of work engagement. Physical Resources (emotional, cognitive and physical) was the strongest predictor of psychological availability.

OPSOMMING

Die doel van hierdie studie was om die antesedente en uitkomste van werksbegeestering te evalueer. 'n beskikbaarheids steekproef (N=288) is van kruisfunksionele werknemers in 'n semi-staatsorganisasie in Suid-Afrika geneem. 'n Aangepaste weergawe van die Werksbegeesteringskaal, Psigologiese Omstandighede-vraelys, Antesedenteskaal, en 'n biografiese vraelys is gebruik. Die bevindings het aangedui dat sielkundige betekenisvolheid en sielkundige beskikbaarheid betekenisvolle voorspellers van werksbegeestering is. Persoon-omgewing-inpassing en groeigeleenthede was die beste voorspellers van sielkundige betekenisvolheid, en persoon-omgewing-passing was die beste voorspellers van werksbegeestering. Fisiese hulpbronne (emosioneel, kognitief en fisies) was die beste voorspeller van sielkundige beskikbaarheid.

Key terms: Engagement, person-environment fit, physical resources, growth, psychological meaningfulness, psychological availability, psychological safety

Organisations are experiencing increased demands and pressures emanating from current operating and dire economic conditions worldwide and this in turn has had an impact on employee work demands and obligations (Kickul & Posig, 2001). As organisations strive to be profitable, the extent to which employees are engaged and committed to their work is constantly under pressure in satisfying customer and growing business requirements. Kahn (1990) explains that work engagement involves the expression of the self through work and other employee-role activities.

Work engagement affect organisations in two ways. First, it has a direct influence core business issues such as turnover and customer satisfaction. Second, it affects employees' motivation and attachment to their work. These key issues force managers and researchers respectively to be concerned with work engagement (May, Gilson, & Harter, 2004). According to Harter (2001), there is correlation between work engagement and business outcomes and further found that highly engaged individuals were mostly found in units associated with high performance. Harter (2001) concluded that employees are more engaged to work when they find their work meaningful and is aligned to how they perceive themselves at present and in the future.

Work engagement is an important concept to study in a workplace as it would explain why some employees are engaged whilst others are not (May et al., 2004). Different factors contribute to the extent to which employees will be engaged at any given time. Factors that influence work engagement includes high job demands, lack of resources, lack of job enrichment and fulfillment. The levels of work engagement have not been measured in this South African Parastatal and the factors that impact on work engagement have not been determined, hence the importance of this study. Engagement in the workplace is a problem since if employees are not engaged, they might not immerse themselves in their respective work roles, they are most likely to wait to be told to perform certain tasks and their performances will not be of a high and expected standard. This often occurs when employees encounter difficulties with supervisors, colleagues, job overload and perceives a lack of fit between themselves and the environment or roles in which they find themselves (May et al., 2004). Research has shown over time that employees at lower levels within the organization in uninteresting jobs performing routine clerical and administrative work are likely to be disengaged at work. This study will help identify specific areas in the organisation where levels of engagement are adversely affected in order to craft focused workplace interventions.

This study explores work engagement and psychological conditions with the focus on understanding the mediating effects of conditions such as psychological meaningfulness, safety and availability on work engagement in a parastatal. This is important to explore since this parastatal has undergone transformation overtime and turnaround strategies have been implemented to ensure the company's profitability from a loss making entity but the extent to which employees are engaged has not been measured over time.

Work engagement

The emergence of "positive psychology" (Seligman & Csikszentmihalyi, 2000) expanded the negative concept of burnout and enlarged it in recent years to encompass its positive components, namely work engagement. Maslach, Schaufeli, and Leiter (2001) point out that engagement should be a key theme of research and intervention.

Kahn (1990) conceptualised engagement at work and described it as the "harnessing of organizational member's selves to their work roles; in engagement, people employ and express themselves physically, cognitively and emotionally during role performances (p. 694). Kahn (1990) highlights the interrelationship between the "self" and "role" wherein the self is the manifestation of personal energies into role behaviours (self employment) and the self within the role (self expression). Hochschild (1983) goes further to explain disengagement as disintegration of the self from the work role and is characterised by withdrawal and application of defense mechanisms during role performances.

The concept of work engagement has evolved over time and three conceptualisations are discussed next.

Maslach and Leiter (1997, p 23) regard work engagement as the opposite of burnout when they define burnout as "an erosion of engagement with the job". This means that as worthwhile and fulfilling the job once was, it begins to evoke feelings of worthlessness and starts being meaningless to the incumbent (Rothmann, 2003). Furthermore, Maslach and Leiter (1997) explain that engagement is characterised by three dimensions, namely energy, involvement and efficacy, which are considered the direct opposites of the three burnout dimensions (i.e. exhaustion, cynicism, and lack of professional efficacy) respectively.

Kahn (1990) believes that employees who are engaged in their work utilise themselves fully physically, cognitively emotionally within jobs that they perform. Kahn (1990 p. 700) further explains that personal engagement is "the simultaneous employment and expression of a person's "preferred self" in task behaviours that promote connections to work and to others, personal presence (physical, cognitive and emotional), and active, full role performances". Personal disengagement is characterised by withdrawal of a person's preferred self evident by emotional absence, passivity and uninvolved and uncoordinated performance outputs (Kahn, 1990).

According to Schaufeli, Salanova, and Bakker (in press) engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular job, event, individual or behaviour. Engagement is characterized by vigour, dedication, and absorption (Schutte, Toppinen, Kalimo & Schaufeli, 2000; Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). Vigour is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one's work and persistence also in the face of difficulties. Dedication is characterised by a sense of significance, enthusiasm, inspiration, pride, and challenge. The third dimension of engagement is called absorption, which is characterised by being fully concentrated and happily engrossed in one's work whereby time passes quickly and one has difficulties in detaching oneself from work. Studies conducted in the work engagement suggest that Vigour and dedication constitute the core dimensions of engagement (Hakanen, Bakker, and Schaufeli, 2006) and absorption most likely plays a less central role in the engagement concept. While reconciling the work of Kahn (1990) and Schaufeli et al. (in press) it is clear that engagement has three dimensions namely physical, cognitive and emotional dimensions- which are in line with the dimensions of vigour, dedication and absorption. Rothmann (2003) ascertained that engagement is characterised by vigour (high activation) and dedication (high identification).

Psychological conditions and work engagement

May et al. (2004) makes mention of the study that was conducted by Kahn (1990) which explored the mediating effects of three psychological conditions – meaningfulness, safety and availability on employees' engagement in their respective work environments. In the study conducted by Kahn (1990) the three mentioned psychological conditions correlated with engagement.

Kahn (1990) theorised that individuals vary in the degree to which they immerse themselves in their roles but they would use all aspects of themselves in their roles – cognitive, emotional and physical. Engagement entails physical energies employed by individuals to accomplish their roles. These energies assist in bunging the self into a role.

Frankl (1992) stated that individuals have a primary motive to seek meaning in their work. Meaningfulness is defined as the value of work goal or purpose, judged in relation to an individual's own ideals and standards (Hackman & Oldman, 1980; May, 2003; Renn, & Vandenberg, 1995). Psychological meaningfulness refers to "a feeling that one is receiving a return on investment of one's self in currency of physical, cognitive or emotional energy" (Kahn, 1990, p. 703-704). Aktouf (1992) alludes to the fact that the lack of meaning in one's work can lead to alienation or disengagement from one's work. This also means that the extent to which the work is experienced as meaningful by employees should facilitate both their personal growth and motivation. According to Aktouf (1992), engagement is central to the problem of employees' lack of commitment and motivation. This can be attributed to a number of issues such as meaningless work which is often associated with apathy and detachment from one's work (Thomas & Velthouse, 1990). Meaningful work to employees facilitates both their motivation and personal growth and the restoration of meaning in work is seen as a method to foster an employee's motivation and attachment to work. Engagement has been linked to variables such as employee turnover, customer satisfaction, loyalty, safety and to a lesser degree productivity and profitability.

The following hypothesis is formulated regarding the relationship between psychological meaningfulness and work engagement:

Hypothesis 1a: Psychological meaningfulness is positively related to work engagement

Individuals are likely to experience psychological meaningfulness when they feel useful and valuable and this is influenced by work role fit and rewarding interpersonal interactions with co-workers (Olivier & Rothmann, 2007). Most authors argue that a perceived "fit" between an individual's self concept and his/her role will lead to an experienced sense of meaning due to the ability of the individual to express his/her values and beliefs (Brief & Nord, 1990; Shamir, 1991). According to Shamir (1991), people seek out work roles that allow them to behave in a way that expresses their genuine self –concepts. In a research conducted by May

(2003), a confirmation of this perspective was received where work role fit had a significant influence on employees' experienced meaningfulness. In summary, work roles that are aligned with individual's self concepts should be associated with a more meaningful work experience.

It is believed that individuals who have rewarding interpersonal interactions with their co-workers also experience greater meaning in their work. Relationships with significant others in the work context promotes the extent to which individuals perceive that they are being treated with dignity, respect and value for their contributions. This promotes a sense of belonging, a stronger sense of social identity and meaning. Loss of a social identity should be associated with meaningfulness (Florian & Snowden, 1989). Psychological meaningfulness displayed the strongest correlation. May et al. (2004) state that job enrichment and person environment (role) fit are positively linked to psychological meaningfulness

The following hypotheses are formulated regarding the relationship between psychological meaningfulness, work-role fit and supportive co-worker relations:

Hypothesis 1b: Person environment (work) role fit is positively related to psychological meaningfulness
Hypothesis 1c: Co-worker relations are positively related to psychological meaningfulness.
Hypothesis 1d: Growth opportunities are positively related to psychological meaningfulness

Psychological availability is defined as an individual's belief that he/she has the physical, emotional or cognitive resources to engage the self at work (Kahn, 1990). It assesses the readiness or confidence of a person to engage in his/her work role given that individuals are engaged in many other life activities (May et al., 2004).

The following hypothesis is formulated regarding the relationship between psychological availability and work engagement.
Hypothesis 2a: Psychological availability is positively related to work engagement

Individuals bring their physical, emotional and cognitive resources to bear on role related tasks when they engage themselves at work. Most jobs require some level of physical exertion and some demand intense physical challenges that result in injuries (May &

Schowoerer, 1994). Even the sitting posture at work can put an insurmountable amount of stress on the back (Hollenbeck, Ilgen, & Crampton, 1992). Individuals vary in their abilities to meet these physical demands based on their strength, stamina and flexibility and in the same light cognitive demands and resources also vary by job and person respectively. When physical resources are depleted this will necessarily result in physical disengagement from one's work role. It is also expected that the greater availability of resources will lead to greater engagement. (May et. al., 2004)

The following hypotheses are formulated regarding the relationship between psychological availability, resources and self-consciousness.

Hypothesis 2b: Resources (physical, emotional and cognitive) are positively related to psychological availability.
Hypothesis 2c: Self-consciousness is negatively related to psychological availability.

May et al. (2004) states that individuals should be more willing to engage themselves in their roles at work if they believe that they have the necessary physical, emotional and cognitive resources to do so.

Psychological safety is defined as "feeling able to show and employ oneself without fear of negative consequences to self image, status or career" (Kahn, 1990, p.708). Psychological safety is believed to lead to engagement, because it reflects one's belief that a person can employ him-/herself without fear of negative consequences. When the relationship between supervisor and co-workers is characterized by support, trust and flexibility in behavioural norms, this may lead to feelings of safety (May et al., 2004). Kahn (1990) further mentions that individuals with rewarding interpersonal relationships as well as the presence of co-worker interactions that foster a sense of belonging and a stronger sense of social identity should experience increased psychological safety. According to May et al. (2004), the following four factors have a direct influence on psychological safety namely: interpersonal relationships, group and intergroup dynamics, management style and process and organisational norms.

The following hypothesis is formulated regarding the relationship between psychological safety and work engagement:

Hypothesis 3a: Psychological safety is positively related to work engagement.

Psychological safety ensues when the employee perceives the interpersonal relationships as characterised by mutual support, openness, trust, genuineness and flexibility. This inherently creates an enabling environment conducive to learning and growth. Group and intergroup dynamics are expressed unconsciously in different roles and they are shaped by social systems and the defined group culture or practice which in turn would influence psychological safety. According to May et al. (2004), management who are supportive, consistent, and clarifying enhanced their employees' state of psychological safety. This is also dependent on the extent to which employees perceive their managers or supervisors to be competent, focused, driven and visionaries in their own right. According to Hackman (1986), the extent to which employees behave in accordance with the established and appropriate general behaviours or shared expectations of the system, this tends to improve the employee's psychological safety contrary to those who subscribed to norms conflicted with those of the system.

The following hypotheses are formulated regarding the relationship between psychological safety, supervisory relations, co-worker relations and co-worker norms:

Hypothesis 3b: Supportive supervisor relations is positively related to psychological safety
Hypothesis 3c: Rewarding co-worker relations is positively related to psychological safety
Hypothesis 3d: Adherence to co-worker norms is negatively related to psychological safety

Therefore, the following research hypotheses are formulated regarding the relationships between the antecedent conditions, psychological conditions and work engagement.
Hypothesis 4a: Psychological meaningfulness mediates the relationship between person-environment (role) fit, and co-worker relations and work engagement.
Hypothesis 4b: Psychological availability mediates the relationship between resources and self-consciousness and engagement at work.
Hypothesis 4c: Psychological safety mediates the relationship between supervisory relations, co-worker relations and co-worker norms and work engagement.
These hypotheses will be investigated in the following empirical study.

METHOD

Research design

A survey design (specifically the cross-sectional design where a sample is drawn from the target population at a particular time) was used to achieve the research objectives. Cross-sectional designs are also used to assess interrelationships among variables within the target population group (Shaughnessy & Zechmeister, 1997). Questionnaires were used to gather data in a non-random field survey.

Participants

The participants were employees of a parastatal based at different regions (provinces) across South Africa. Paper and electronic questionnaires were sent at random to 300 employees, of which 288 participated in the study. Employees participated voluntarily in the study and confidentiality was maintained. Employees from diverse divisions, occupational groups and education levels from general staff to executive management were included. The participants were mostly female (51,4%) and the majority of participants were in the 31-40 years age group (51%). Educational level revealed that the majority (47,9%) of participants have grade 10, 11, 12 qualifications. The majority of participants worked for the company for 11-20 years (40%) and most were 0-5 years in position (63,2%).

The characteristics of participants are reported in Table 1.

Table 1

Characteristics of the Participants (N=288)

Item	Category	Frequency	Percentage
Race	White	88	30,6
	Black	153	53,1
	Coloured	25	8,7
	Indian	21	7,3
	Other	1	0,3
Gender	Male	140	48,6
	Female	148	51,4
Language	Afrikaans	89	30,9
	English	47	16,3
	Sepedi	23	8,0
	Sesotho	20	7,0
	Setswana	46	16,0
	IsiSwati	4	1,4
	Tshivenda	8	2,9
	IsiNdebele	1	0,4
	IsiXhosa	19	6,6
	isiZulu	28	9,7
	Other	3	1,0
Age distribution	20-30	25	9,0
	31-40	146	51,0
	41-50	87	30,0
	50+	30	10,0
Years in Service	0-5 years	43	15,0
	6-10 years	62	22,0
	11-20 years	114	40,0
	21-30	60	21,0
	30+	9	3,0
Years in Position	0-5 years	182	63,2
	6-10 years	61	21,2
	11-20 years	39	13,5
	20+	6	2,1
Employment category	Executive Management	2	0,69
	Middle management	60	20,8
	Supervisory	20	6,9
	Administrative clerical personnel	83	28,8
	Specialist/Consultant	84	29,2
	Experiential learners	3	1,0
	Branch/Area Managers	17	5,9
	General Staff	19	6,6
Level of education (qualification)	Lower than Grade 10	13	4,5
	Grade 10, 11, 12	138	47,9
	Technical college diploma	56	19,4
	University degree	43	15
	Postgraduate degree	38	13,2
Relationship satisfaction	Very unsatisfied	79	27,4
	2	134	46,6
	3	62	21,5
	4	6	2,1
	Very satisfied	7	2,4
Satisfaction with job	Very unsatisfied	27	9,3
	1		
	2	10	3,5
	3	33	11,5
	4	52	18,1
	Very satisfied	166	57,6

Measuring instruments

Three measuring instruments were used for the purposes of this study namely the Work Engagement Scale (WES), Psychological Conditions Questionnaire (PCQ) and Antecedents Scale (AS) (May et al., 2004).

The *Work Engagement Scale* (WES) as developed by May et al. (2004) was used to gather information about how employees react to various aspects of their work and work situation. For all items, a 5-point agreement-disagreement Likert format from 1 (*never*) to 5 (*always*) was used. The items reflected each of the three components of Kahn's (1990) conceptualization of psychological engagement, namely cognitive, emotional, and physical engagement. Work engagement was measured by 18 items (α = 0,62). Olivier & Rothmann (2007) found a one factor engagement model consisting of cognitive, emotional and physical resources (α = 0,72), which was consistent to findings by May et al. (2004), where fewer items were used. These demonstrated good reliability and represented cognitive, emotional and physical engagement items (α = 0,77).

The *Psychological Conditions Questionnaire* (PCQ) of May et al. (2004) has been used in the study by Olivier and Rothmann (2007) and all subscales were included, namely Psychological meaningfulness was measured by six items such as B82 ("the work I do on this job is very important to me"). Psychological safety was measured by 3 items such as B88 ("I am not afraid to be myself at work"). Psychological availability was measured by 5 items such as B92 ("I am confident in my ability to think clearly at work"). A principal axis factor analysis with a direct oblimin rotation was subsequently carried out and resulted in the following factors being included: Psychological Meaningfulness (6 items) and Psychological availability (5 items). The alpha coefficients for the psychological conditions, namely Psychological Meaningfulness, Psychological Safety and Psychological Availability items varied between 0,71 and 0,90 in the study of May et al. (2004).

The *Antecedents Scale* (AS) was used to measure person-environment (α = 0,93) and co-worker norm adherence (α = 0,48) and were measured by 3-10 items. The Person Environment Fit (α = 0,93) was measured by 4 items and co-worker norms by 3 items. The degree to which individuals possess resources to become available for engagement was assessed by averaging 7 items. Overload was measured by 9 items, Self concept was

measured by 3 items and Organisational support was measured by 16 items. Growth was measured by 10 items. Physical load was measured by 3 items. Opportunity to advance was measured by 4 items. Work-home interference was measured by 4 items and Home-work interference was measured by 4 items.

Specific questions were included to gather information about the demographic characteristics of the participants. These included gender, marital status, language, age, education level, years of employment and employment category.

Statistical analyses

The statistical analyses were carried out with the SPSS program (SPSS, 2008). Cronbach alpha coefficients (α) were used to assess the internal consistency of the measuring instruments (Clark & Watson, 1995). Descriptive statistics such as means and deviations were used to analyze the data. An exploratory factor analysis was carried out to determine the construct validity of the instruments. The following steps were followed: Firstly, a simple principal components analysis was conducted on the items of the PSI (In full?). The eigenvalues and scree plot were studied to determine the number of factors. Secondly, principal axis factoring with a direct oblimin rotation was conducted, if factors were related ($r > 0,30$). Thirdly, if the obtained factors were not related, a principal factor analysis with a varimax rotation was used.

Pearson product-moment correlation coefficients were used to assess the relationships between the variables. Multiple regression analyses were used to investigate whether job/personal characteristics like work role fit predict the psychological conditions (e.g. psychological meaningfulness), and whether these psychological conditions predict work engagement. In terms of significance, it was decided to set the value at a 95% confidence interval level ($p < 0,05$). Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

Baron and Kenny (1986) recommend three steps in order to test for mediation. According to Baron & Kenny (1986) beta coefficients of different regression equations must be compared. Firstly, the mediator should be predicted by the independent variable. The dependent variable

should then be predicted by the mediator and the independent variable. Lastly, the dependent variable should be regressed on the independent variable, controlling for the mediator. If all steps prove significant, perfect mediation holds when, controlling for the mediator, the independent variable does not predict the dependent variable.

RESULTS

Factor analyses

The results of a principal factor analysis on the items of the WES are shown in Table 2. Loadings on factors and communalities are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Labels for each factor are suggested in the note to the table.

Table 2

Principal Factor Analysis with a Direct Oblimin Rotation on the Work Engagement Scale

	Factor 1	Factor 2	h^2
B77 I exert a lot of energy performing my job.	**0,69**	0,05	0,47
B73 I really put my heart into my job.	**0,59**	-0,43	0,58
B74 I get excited when I perform well on my job	**0,50**	-0,15	0,28
B76 My own feelings are affected by how well I perform my job	**0,44**	0,36	0,30
B78 I stay until the job is done.	**0,37**	-0,01	0,14
B72 Time passes quickly when I perform my job.	**0,35**	-0,11	0,14
B69 Performing my job is so absorbing that I forget about everything else.	**0,31**	0,07	0,09
B80 I take work home to do.	**0,30**	0,08	0,09
B81 I avoid working too hard.	-0,27	**0,25**	0,15
B70 I often think about other things when performing my job.	-0,03	**0,45**	0,21
B75 I often feel emotionally detached from my job.	0,00	**0,39**	0,16
B79 I avoid working overtime whenever possible.	-0,12	**0,22**	0,07
B71 I am rarely distracted when performing my job.	0,08	**0,21**	0,05

Factor 1: Engagement; Factor 2: Disengagement

Two factors were extracted which explained 32,10% of the total variance in the data. Variables were relatively insufficiently defined by this factor solution. Communality values, as seen in the table, tend to be low to moderate, especially for the second factor. The first factor dealt with physical, cognitive and emotional aspects of engagement such as Item B77 ("I exert a lot of energy performing my job"), B73 ("I really put my heart into my job") and

B69 ("Performing my job is so absorbing that I forget about everything else"). This factor was labelled *Engagement*. The second factor included item B75 ("I often feel emotionally detached from my job") and item B70 ("I often think about other things when performing my job"). This factor was labelled *Disengagement.*

The results of a principal factor analysis on the items of the Psychological Conditions Scale are reported in Table 3. Again, loadings on factors and communalities are shown, variables are ordered and grouped by size of loading to facilitate interpretation and labels for each factor are suggested in the note to the table.

Table 3

Principal Factor Analysis with a Direct Oblimin Rotation on the Psychological Conditions Questionnaire

	Factor 1	Factor 2	Factor 3	h^2
B86: The work I do on this job is meaningful to me	**0,93**	-0,06	-0,03	0,83
B83: My job activities are personally meaningful to me.	**0,91**	0,00	0,02	0,82
B85: My job activities are significant to me	**0,89**	-0,07	-0,07	0,78
B84: The work I do is worthwhile	**0,87**	0,01	-0,03	0,78
B82: The work I do on this job is very important to me.	**0,67**	0,23	0,20	0,60
B88: I am not afraid to be myself at work.	0,30	0,10	-0,18	0,20
B93: I am confident in my ability to display the appropriate emotions at work.	-0,11	**0,83**	-0,00	0,64
B94: I am confident that I can handle the physical demands at work	-0,11	**0,79**	-0,09	0,59
B92: I am confident in my ability to think clearly at work.	0,12	**0,76**	-0,03	0,68
B90: I am confident in my ability to handle competing demands at work	0,08	**0,76**	0,09	0,63
B91: I am confident in my ability to deal with problems that come up at work.	0,14	**0,72**	0,05	0,62
B89: There is a threatening environment at work	0,14	-0,04	0,86	0,72
B87: I feel that the work that I do is valuable	0,20	-0,02	-0,55	0,37

Factor 1: Psychological Meaningfulness; Factor 2: Psychological Availability

Three factors were extracted which explained 63,40% of the total variance in the data. Variables were relatively well-defined by this factor solution. Communality values, as seen in the table, tend to be moderate to high. Only the first two factors were interpretable.

The first factor deals with the meaningfulness and importance of work for the individual and was labelled *Psychological Meaningfulness*. The second factor dealt with the individual's confidence to handle physical demands at work, display the appropriate emotions at work, and thinking clearly at work. This factor was labelled *Psychological Availability.* Item B88

("I am afraid to be myself at work") which was supposed to load on Psychological Safety loaded on Psychological Meaningfulness. However, the loading was low and the communality poor, which might indicate that the item was misinterpreted. Item B89 ("There is a threatening environment at work") represented the dimension Psychological Safety loaded on the third factor, but unfortunately it was the only item which correctly represented the dimension.

The results of a principal factor analysis on the items of the Antecedents Scale (Part 1) are reported in Table 4. Four interpretable factors with eigenvalues larger than one were extracted. These four factors explained 58,53% of the total variance. Loadings on factors and communalities are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Labels for each factor are also suggested in the footnote.

Table 4

Principal Factor Analysis with a Varimax Rotation on the Antecedents Scale (Part 1)

Item	Factor 1	Factor 2	Factor 3	Factor 4	H^2
B97 The work I do on this job helps satisfy who I am.	**0,91**	-0,16	0,12	0,01	0,69
B98 My job 'fits' how I see myself in the future	**0,91**	-0,12	0,13	0,04	0,78
B96 I like the identity my job gives me	**0,90**	-0,11	0,07	-0,06	0,86
B95 My job 'fits' how I see myself.	**0,86**	-0,13	0,08	-0,04	0,84
B107 I feel emotionally drained from my work	-0,15	**0,80**	0,01	0,13	0,39
B106 I feel like I'm at the end of the rope emotionally	-0,09	**0,76**	0,12	0,05	0,11
B108 I feel tired before my workday is over.	-0,19	**0,71**	0,03	0,24	0,16
B109 I feel physically used up at the end of the workday	-0,19	**0,67**	-0,03	0,28	0,57
B103 I can't think straight by the end of a workday.	0,06	**0,64**	-0,00	-0,03	0,25
B105 I feel emotionally healthy at the end of the workday	-0,24	**0,56**	-0,49	0,01	0,17
B99 I go along with the norms of my group of co-workers	0,35	0,00	**0,67**	-0,05	0,61
B101 I do what is expected of me by my co-workers	-0,02	-0,07	**0,65**	-0,08	0,52
B100 I don't 'rock the boat' with my co workers	-0,03	0,14	**0,55**	0,13	0,65
B102 I feel mentally sharp at the end of my workday	-0,35	0,48	-0,48	-0,11	0,54
B104 I feel overwhelmed by the things going at work	0,23	**0,31**	0,35	0,08	0,48
B111 I am afraid my failings will be noticed by others	-0,04	0,12	0,04	**0,81**	0,59
B110 I worry about how others perceive me at work	-0,05	0,18	-0,12	**0,80**	0,51
B112 I don't worry about being judged by others at work	-0,06	-0,05	-0,11	**-0,58**	0,14

Factor 1: Person-environment fit; Factor 2: Physical Resources; Factor 3: Norms; Factor 4: Self-consciousness

The first factor deals with the fit between the individual and his or her job and was labelled *Person-Environment Fit*. The second factor dealt with the individual's exhaustion at the end

of each day and was labelled *Physical Resources.* The third factor deals with expectations of co-workers and was labelled *Co-worker Norms*. The fourth factor deals with the individual's fear that his or her failings will be noted by others and worries of how her or she is perceived by others, and was labeled *Self-Consciousness*. Items B104 ("I feel overwhelmed by the things going at work") and B111 ("I am afraid my failings will be notified by others") did not load on any of the four factors and they were excluded from further analysis.

The results of a principal factor analysis on the items of the Antecedent Conditions Scale (Part 2) are reported in Table 5. Loadings on factors and communalities are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Labels for each factor are suggested in the note to the table.

Table 5

Principal Factor Analysis with a Varimax Rotation on the Antecedents Scale (Part 2)

Item	Factor 1	Factor 2	Factor 3	h^2
B30 In your work, do you feel appreciated by your supervisor	**0,78**	0,20	0,27	0,39
B36 Does your direct supervisor inform you about how well you are doing at work	**0,75**	0,21	0,16	0,36
B29 Do you get on well with your supervisor	**0,74**	0,16	0,30	0,37
B33 Do you know exactly what your direct supervisor thinks of your performance	**0,73**	0,11	0,09	0,55
B28 Can you count on your supervisor when you come across difficulties in your work	**0,71**	0,14	0,29	0,65
B40 Can you discuss work problems with your direct supervisor	**0,68**	0,14	0,33	0,70
B35 Do you receive sufficient information on the results of your work	**0,67**	0,28	0,17	0,44
B21 Does your job offer you the possibility of independent thought and action	0,07	**0,80**	0,20	0,46
B20 Does your work give you the feeling that you can achieve something	0,21	**0,77**	0,11	0,43
B19 Does your job offer you opportunities for personal growth and development	0,25	**0,70**	0,04	0,39
B16 Does your work require creativity	-0,01	**0,60**	-0,17	0,38
B18 Do you have enough variety in your work	0,12	**0,60**	0,04	0,46
B17 Does your work make sufficient demands on all your skills and capacities	0,12	**0,58**	-0,08	0,35
B23 Do you have influence in the planning of your work activities	0,20	**0,58**	0,30	0,34
B42 Do you have a direct influence on your department/organisation's decisions	0,30	0,47	0,29	0,39
B22 Do you have freedom in carrying out your work activities	0,20	0,46	0,43	0,36
B24 Can you participate in the decision about when a piece of work must be completed	0,30	0,46	0,37	0,61
B26 If necessary, can you ask your colleagues for help	0,24	0,11	**0,63**	0,66
B44 Can you have a chat with colleagues during working hours	0,07	-0,05	**0,62**	0,72
B45 Do you find that you have enough contact with colleagues during working hours	0,14	-0,03	**0,58**	0,55
B25 Can you count on your colleagues when you come across difficulties in your work	0,20	0,16	**0,56**	0,56
B43 Do you have contact with colleagues as part of your work	0,20	0,07	**0,55**	0,63
B27 Do you get on well with your colleagues	0,33	0,08	0,48	0,59

Factor 1: Supervisor Support; Factor 2: Growth Opportunities; Factor 3: Colleague Support

The first factor deals with the quality of the relationship between the employee and the supervisor and was labelled *Supervisor Support*. The second factor deals with the intrinsic nature of the job, including variety, learning opportunities and autonomy and was labelled *Growth Opportunities*. The third factor deals with the quality of the relationships of an employee with colleagues and was labelled *Colleague Support*.

Descriptive statistics, alpha coefficients and correlations

The descriptive statistics, alpha coefficients and correlation coefficients of the scales of the measuring instruments are reported in Table 6.

The Cronbach alpha coefficients were obtained on all the measuring scales, varying from 0, 48 to 0,92. From the factor analysis of the psychological conditions, items could not load on the psychological safety condition and was therefore excluded from the statistical analysis.

Table 6 shows that Work Engagement is statistically and practically significantly related to Psychological Meaningfulness (medium effect), Person-environment fit (medium effect, r = 0,37) and Growth Opportunities (medium effect, r = 0,27). Psychological Meaningfulness is statistically and practically significantly related to Psychological Availability (medium effect), Person-environment fit (large effect), Physical Resources (medium effect) and Supervisor support (medium effect). Psychological Availability is statistically and practically significantly related to Person-environment fit (medium effect), Physical Resources (medium effect) and Colleague Support (medium effect). Person-environment fit is statistically and practically significantly related to Physical Resources (medium effect) and Supervisor Support (medium effect). Physical Resources is statistically and practically significantly related to Growth Opportunities (medium effect) and Colleague Support (medium effect). Colleague Support is statistically and practically significantly related to Supervisor Support (medium effect).

Table 6

Descriptive Statistics, Alpha Coefficients and Correlations of the Scales

Scale	Mean	*SD*	α	1	2	3	4	5	6	7	8	9
1. Work Engagement	29,59	4,28	0,62	-	-	-	-	-	-	-	-	-
2. Psychological Meaningfulness	21,29	4,35	0,79	0,30*+	-	-	-	-	-	-	-	-
3. Psychological Availability	21,96	3,08	0,84	0,26*	0,37*+	-	-	-	-	-	-	-
4. Person-environment Fit	14,57	4,40	0,93	0,37*+	0,58*++	0,36*+	-	-	-	-	-	-
5. Physical Resources	16,81	5,51	0,82	-0,05	-0,33*+	-0,36*+	-0,38*+	-	-	-	-	-
6. Co-worker Norms	10,11	2,25	0,48	0,07	0,19*	0,20*	0,26*	-0,12	-	-	-	-
7. Self-consciousness	4,86	2,09	0,68	0,00	-0,08	-0,16*	-0,10	0,29*	-0,01	-	-	-
8. Growth Opportunities	31,92	6,12	0,88	0,27*	0,48*+	0,22*	0,58*++	-0,32*+	0,13	0,02	-	-
9. Colleague Support	23,10	4,48	0,79	0,06	0,27*	0,34*+	0,25*	-0,32*+	0,24*	0,02	0,32*+	-
10. Supervisor Support	24,49	7,08	0,91	0,19*	0,36*+	0,27*	0,31*+	-0,25*	0,15*	-0,04	-0,18*	0,48*+

* $p < 0,05$ – statistically significant

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

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

Multiple regression analyses

Multiple regression analyses were carried out with work engagement and the psychological conditions as dependent variables. Table 7 shows the results of a multiple regression analysis with Work Engagement as dependent variable and Psychological Meaningfulness as independent variable.

Table 7

Multiple Regression Analysis with Work Engagement as Dependent Variable and Psychological Meaningfulness as Independent Variable

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	R^2
		B	SE	Beta				
1							27,05*	0,09
	(Constant)	23,31	1,24		18,79	0,00		
	Psychological Meaningfulness	0,30	0,06	0,30	5,20	0,00*		

* $p < 0,05$ – statistically significant

Table 7 shows that Psychological Meaningfulness (as measured by the Psychological Conditions Questionnaire) predicts 9% of the variance in Work Engagement (as measured by the Work Engagement Scale). Psychological Meaningfulness made a statistically significant contribution to the regression model ($t = 5,20$, $p < 0,01$). The standardised regression coefficient for Psychological Meaningfulness is $\beta = 0,30$. It is clear that psychological meaningfulness contribute to work engagement.

Table 8 shows the results of a multiple regression analysis with Psychological Meaningfulness as dependent variable and Person-environment Fit, Growth Opportunities and Colleague Support as independent variables. Multiple regression analyses were used to investigate whether job/personal characteristics predict (e.g. person-environment fit) the psychological conditions (e.g. psychological meaningfulness) and whether these predict work engagement.

Table 8

Multiple Regression Analyses with Psychological Meaningfulness as Dependent Variable and Person-environment Fit, Growth Opportunities and Colleague Support as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*P*	*F*	R^2
		B	SE	Beta				
1							50,76*	0,37
	(Constant)	9,27	1.28		7,25	0,00		
	Person-environment Fit	0,432	0,06	0,44	7,20	0,00*		
	Growth Opportunities	0,11	0,03	0,21	3,29	0,00*		
	Colleague Support	0,09	0,05	0,09	1,73	0,09		

* $p < 0,05$ – statistically significant

Table 8 shows that Person-environment Fit, Growth Opportunities and Colleague Support (as measured by the Antecedents Scale) predict 37% ($R^2 = 0,37$) of the variance in Psychological Meaningfulness (as measured by the Psychological Conditions Questionnaire). Two variables contributed statistically to the regression model to explain the variance in Person-environment fit ($t = 7,20$, $p < 0,01$) and Growth Opportunities ($t = 3,29$, $p < 0,01$).

The standardised regression coefficients for each of the predictors were: Person-environment Fit ($\beta = 0,44$) and Growth Opportunities ($\beta = 0,21$). It is clear that Person-environment Fit and Growth Opportunities in the job were the strongest contributors to Psychological Meaningfulness.

Table 9 shows the results of a multiple regression analysis with Work Engagement as dependent variable and Person-environment Fit, Growth Opportunities, Colleague Support and Psychological Meaningfulness as independent variables.

Table 9

Multiple Regression Analyses with Work Engagement as Dependent Variable and Person-environment Fit, Growth Opportunities, Colleague Support and Psychological Meaningfulness as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	R^2
		B	SE	Beta				
1							14,42*	0,15
	(Constant)	24,10	1,47		16,39	0,00		
	Person-environment Fit	0,32	0,07	0,33	4.56	0,00*		
	Growth Opportunities	0,05	0,04	0,.10	1,35	0,18		
	Colleague Support	-0,03	0,06	-0,03	-0,47	0,64		
2							11,77*	0,16
	(Constant)	22,89	1,60		14,28	0,00		
	Person-environment Fit	0,26	0,08	0,27	3,48	0,00*		
	Growth Opportunities	0,04	0,04	0,07	0,95	0,34		
	Colleague Support	-0,04	0,06	-0,04	-0,70	0,48		
	Psychological Meaningfulness	0,13	0,07	0,14	1,85	0,07		

* $p < 0,05$ – statistically significant

Table 9 shows that Person-environment Fit, Growth Opportunities and Colleague Support (as measured by the Antecedents Scale) predict 15% of the variance in Work Engagement (as measured by the Work Engagement Scale). One variable, namely Person-environment Fit (t = 4,56, $p < 0,01$) made a statistically significant contribution to the regression model as revealed by the t value. The standardised regression coefficient for Person-environment Fit is $\beta = 0,33$. It is clear that Person-environment Fit was the strongest contributor to work engagement.

From Tables 7-9 it can be deduced that Person-Environment Fit contributes to Psychological Meaningfulness, which in turn contributed to Work Engagement. Person-environment Fit and Growth Opportunities contributed to Work Engagement. However, the standardised regression coefficient of Psychological Meaningfulness was not statistically significant when Person-environment Fit was also entered into the regression analyses (see criteria for mediating effects as described by Baron & Kenny, 1986). According to Baron and Kenny (1986), the following

steps are recommended. Firstly, the mediator should be predicted by the independent variable. Secondly, the dependent variable should be predicted by the mediator and the independent variable and thirdly the dependent variable should be regressed on the independent variable, controlling for the mediator. The results in the present study indicate that Psychological Meaningfulness does not mediate the relationship between Person-environment Fit, Growth Opportunities and Colleague Support on the one hand and Work engagement on the other hand.

Table 10 shows the results of a multiple regression analysis with Work Engagement as dependent variable and Psychological Availability as independent variable.

Table 10

Multiple Regression Analysis with Work Engagement as Dependent Variable and Psychological Availability as Independent Variable

Model		Unstandardised Coefficients		Standardised Coefficients	*T*	*P*	*F*	R^2
		B	SE	Beta				
1							18,86*	0,07
	(Constant)	21,84	1,80		12,11	0,00		
	Psychological Availability	0,35	0,08	0,26	4,34	0,00*		

* $p < 0,05$ – statistically significant

Table 10 shows that Psychological Availability, as measured by the Psychological Conditions Scale predicts 7% of the variance in Work Engagement, as measured by the Work Engagement Scale. Psychological Availability made a statistically significant contribution to the regression model ($t = 4,34$, $p < 0,01$). The standardised regression coefficient for Psychological Availability is $\beta = 0,26$. This confirms that psychological availability contributed to work engagement.

Table 11 shows the results of a multiple regression analysis with Psychological Availability as dependent variable and Physical Resources and Self-consciousness as independent variables.

Table 11

Multiple Regression Analysis with Psychological Availability as Dependent Variable and Physical Resources and Self-consciousness as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	R^2
		B	SE	Beta				
1	(Constant)	25.53	0,62		41,40	0,00	20,09*	0,13
	Physical Resources	-0,19	0,03	-0,34	-5.73	0,00*		
	Self-consciousness	-0,08	0,09	-0,05	-0,90	0,37		

* $p < 0,05$ – statistically significant

Table 11 shows that Physical Resources and Self-consciousness (as measured by the Antecedents Scale) predict 13% of the variance in Psychological Availability (as measured by the Psychological Conditions Scale). Physical Resources made a statistically significant contribution to the regression model (t = -5,73, $p < 0,01$). The standardised regression coefficient for Physical Resources is β = -0,34. It is clear that Physical Resources was the strongest contributor to Psychological Availability.

Table 12 shows the results of a multiple regression analysis with Work Engagement as dependent variable and Physical Resources, Self-consciousness and Psychological Availability as independent variables.

Table 12

Multiple Regression Analyses with Work Engagement as Dependent Variable and Physical Resources, Self-consciousness and Psychological Availability as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*P*	*F*	R^2
		B	SE	Beta				
1							0,29	0,00
	(Constant)	30.17	0,.93		32.39	0,00		
	Physical Resources	-0,04	0,05	-0,05	-0,76	0,45		
	Self-consciousness	0,02	0,13	0,01	0,18	0,86		
2							6,14*	0,07
	(Constant)	20.60	2.44		8.45	0,00		
	Physical Resources	0,04	0,05	0,05	0,69	0,49		
	Self-consciousness	0,06	0,13	0,03	0,47	0,64		
	Psychological Availability	0,.37	0,09	0,.27	4.22	0,00*		

* $p < 0,05$ – statistically significant

Table 12 shows that Physical Resources and Self-consciousness (as measured by the Antecedents Scale) did not statistically significantly predict Work Engagement (as measured by WES). Table 12 also shows that Physical Resources and Self-consciousness (as measured by the Antecedents Scale) and Psychological Availability (as measured by the PCS) predict 7% of the variance in Work Engagement (as measured by the WES). Psychological Availability made a statistically significant contribution to the regression model ($t = 4,22$, $p < 0,01$). The standardised regression coefficient for Psychological Availability is $\beta = 0,27$. It is clear that Psychological Availability was the strongest contributor to Work Engagement.

From Table 10-12 it can be deduced that Physical Resources contributed to Psychological Availability, which in turn contributed to Work Engagement. However, Physical Resources and Self-consciousness did not statistically significantly predict Work Engagement, which means that the conditions for proving a mediation effect do not exist (see Baron & Kenny, 1986).

DISCUSSION

The main objective of this study was to investigate the antecedents of Work Engagement. The outcomes of this study confirmed that two psychological conditions, namely Psychological Meaningfulness and Psychological Availability significantly predicted Work Engagement. According to May et al. (2004), both Psychological Meaningfulness and Psychological Availability mediated between their antecedents but this could not be confirmed in this study. Psychological Meaningfulness was found to be the strongest predictor of Work Engagement.

In previous research findings, May et al. (2004) and Olivier and Rothmann (2007), found that psychological meaningfulness was the strongest predictor of work engagement and this was also confirmed in this study. Psychological meaningfulness contributed to work engagement. Person-environment fit and growth opportunities in the job were the strongest predictors of psychological meaningfulness. Person-environment fit contributed to psychological meaningfulness which in turn contributed to work engagement. Person-environment fit was the strongest predictor of work engagement. This is in line with the results of other previous studies (May et al., 2004).

Person-environment fit and growth opportunities in the job contributed to work engagement. From the regression analysis, it was further found that psychological meaningfulness does not *mediate the relationships between person environment fit, growth opportunities and colleague* support on the one hand and work engagement on the other hand. This indicated that Hypothesis 4a could be rejected. Kahn (1990) emphasised that people experience meaningfulness when they feel worthwhile, useful and valuable in their work setting which elevates their motivation roles because of recognition and the difference they make in their work.

The results in this study also confirmed the importance of psychological availability as a predictor of work engagement. According to Kahn (1990), psychological availability ensues when there is a deep belief from the individual that he/she has the physical, emotional or cognitive resources to engage "self" at work. The physical resources were found to be the strongest predictor of psychological availability and in turn contributed to work engagement.

However, Physical Resources and Self-consciousness did not statistically significantly predict work engagement, which means that the conditions for proving a mediation effect did not exist in line with Baron and Kenny (1986) guidelines. This means that hypothesis 4b could be rejected. This study did not support the finding of May et al. (2004) that psychological availability mediates the relationship between Resources (cognitive, emotional and physical resources) and self-consciousness on the one hand and work engagement on the other hand.

Psychological safety is a condition that enables an individual to express genuine self without fear of negative consequences to self-image, social standing or career prospects (Kahn, 1990). From the factor analysis of the psychological conditions, no items loaded on the psychological safety condition and were therefore excluded from the statistical analysis. As a result of this low loading and poor communality, hypotheses 3 a, b, c, d and 4c could not be confirmed. The insufficient loading and poor communality can be attributed to misinterpretation or poor item construction (reliability) of the scale that measured Psychological Safety.

The findings of this study indicated that Person environment fit is a statistically significant predictor of Psychological Meaningfulness and Work Engagement, but that psychological meaningfulness does not mediate the relationship between person-environment fit, growth opportunities and colleague support on one side and work engagement on the other. This partially supported the findings of May et al. (2004), where the strong relationship between person environment fit and meaningfulness was confirmed and the mediating effect on work engagement was statistically proven.

The findings further confirmed that Physical Resources was a statistically significant predictor of psychological availability and work engagement but psychological availability did not mediate the relationship between self consciousness and resources on the one hand and work engagement on the other.

The first limitation of this present research relates to the use of cross-sectional design. Despite the use of statistically advanced techniques such as structural equation modelling, no causal relationships could be made with regard to relationships between the constructs used in the

study. The relationships between constructs could only be analysed and described, not established. Therefore, the identification of relationships in the present study serves only to establish certain patterns consistent with previous theoretical research regarding the chronological relationships of the different variables studied. This emphasises that longitudinal and quasi-experimental designs are required not only to validate hypothesised causal relationships between antecedents and possible consequences on work engagement, but also to expand our knowledge in terms of the inclusion of other variables in the study of well-being.

A second limitation of the present research was the sample size and representativeness in the terms of race, gender, education, experience. Only 288 respondents participated in the study and 51% of whom were female and most of the respondents fell in the 31-40 age group and most respondents had 11-20 years organisational experiences. One of the reasons for the low response might be the lack of interest from employees as a result of constant use of questionnaires in the organisation that had not yielded any tangible results for employees and the organisation in general. Therefore, there was reluctance to fill in questionnaires and return them to the researcher. Secondly, most employees within the organisation are not connected via the company network due to unavailability of computers and this was the media utilised to send out the questionnaires. The study sample was therefore based on the availability and willingness of respondents and not randomly selected. The size of the sample has significant limitations in terms of the generalisation of the findings to the total population.

The third limitation of the present study relates to the absolute reliance on self measures as the basis of data gathering. According to Schaufeli, Enzmann, and Girault (1993), the exclusive use of self report measures in validation studies increases the likelihood that at least part of the shared variances between measures can be attributed to "method variance" whilst Spector (1987) asserts that there is little evidence of common method variance.

The fourth limitation is the reliability of work engagement as found in the present study wherein the alpha coefficient for this study was lower than in the past few studies conducted in the South African context (Olivier & Rothmann, 2007) where good reliability was demonstrated. The low reliability could possibly be due to a number of reasons such as item misinterpretation, language

barrier or item construction. This means that the items that constituted the Work Engagement Scale might not have been understood as researchers intended and this could be as a result of language used or the manner in which the items have been phrased.

RECOMMENDATIONS

This study explored the mediating effects of three psychological conditions namely psychological meaningfulness, psychological availability and psychological safety on work engagement. There are different but creative ways that can be employed by managers to enhance psychological meaningfulness, psychological availability and psychological safety in any given organisations. It is imperative for managers to consistently endeavour to find a fit between the inherent role requirements of the job and the individual in order to promote individual identification with the job that will harness meaningfulness in the role. It is equally imperative that concerted efforts be applied to improving interpersonal dynamics between managers and colleagues. This could in turn create a conducive environment where employees can derive meaning. It is important to note that employees are in a position to avail themselves psychologically in their roles when they have the cognitive, emotional and physical resources needed to carry out their respective roles. In summary, organisations must ensure that robust and reliable processes are in place for recruitment, selection, employee relations and availing resources needed for employees to succeed in their jobs.

This study had various limitations. In the first instance, psychological safety items as measured by the Psychological Conditions Questionnaire were not sufficiently reliable and valid to be used in the study. Therefore, more research is needed regarding the measurement of psychological safety. Secondly, a cross-sectional design was used in this study, which makes it impossible to assess the causality of relationships. For future research, more emphasis should be placed on further investigations of the mediating effects of psychological conditions such as psychological meaningfulness, psychological availability and psychological safety on work engagement in other contexts, as well as with larger samples to increase confidence levels in terms of consistency across other similar groups.

Longitudinal research studies are necessary to explore effects of specifically designed interventions, focusing at individual or organisational level on psychological conditions of psychological meaningfulness, psychological availability and psychological safety.

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CHAPTER 3

RESEARCH ARTICLE 2

SELF-EFFICACY, JOB DEMANDS, JOB RESOURCES, PSYCHOLOGICAL CONDITIONS AND WORK ENGAGEMENT IN A SOUTH AFRICAN PARASTATAL

ABSTRACT

The objective of this study was to investigate the relationships between self-efficacy, job demands, job resources, psychological conditions and work engagement in the parastatal. A cross-sectional survey design was used. An available sample (N=288) of employees was taken within a South African parastatal. An adapted version of the Work Engagement Scale, Psychological Conditions Questionnaire, Job Demands-Resources Scale, a Task-specific Self-efficacy Scale as well as a biographical questionnaire was administered. The results showed that overload and psychological meaningfulness were the best predictors of work engagement. Growth opportunities in the job and organisational support were the best predictors of psychological meaningfulness, which also strongly predicted work engagement. Psychological availability was found to be positively related to organisational support and self-efficacy.

OPSOMMING

Die doel van hierdie studie was om die verwantskappe tussen selfdoeltreffendheid, werkseise, werkhulpbronne, psigologiese kondisies en werkbegeestering in 'n semi-staatsorganisasie te ondersoek. 'n Dwarssnee opname-ontwerp is gebruik. 'n Beskikbare steekproef (N=288) van werknemers is in 'n Suid-Afrikaanse semi-staatsorganisasie gedoen. 'n Aangepaste weergawe van die Werksbegeesteringskaal, Psigologiese Kondisiesvraelys, Werkseise-hulpbronne Vraelys, 'n Taakspesifieke Selfdoeltreffendheidskaal en 'n biografiese vraelys is gebruik. Die bevindings het aangedui dat oorlading en sielkundige betekenisvolheid die beste voorspellers van werkbegeestering was. Groeigeleenthede in die werk en organisasieondersteuning was die beste voorspellers van sielkundige betekenisvolheid, wat ook 'n sterk voorspeller van werksbegeestering was. 'n Positiewe verband is tussen psigologiese beskikbaarheid, organisasiesteun en selfdoeltreffendheid gevind.

Key terms: Self-efficacy, psychological meaning, psychological availability, psychological safety, job demands, job resources

Modern business is constantly surrounded by a number of new challenges that they have to adapt to (Montgomery, 2003), due to expansion, competition, growth and development in the global context. As a result of these changes, organisations and individuals experience different types of demands and resources (Rothmann, 2005). The challenge for organisations is to address aspects of the workplace that may have a potential cost on both individuals and organisations respectively (Le Fevre, Kolt, & Matheny, 2006).

The nature of work has changed fundamentally over time, from a manual or physical exertion to mental and cognitive involvement (Turner, Barling, & Zacharatos, 2002). It is important for employers to ensure that employees remain committed and involved in their jobs, to enable the organisation's profitability. Most employers believe that the effectiveness and success of their organisations are highly dependent on the effective utilisation of their human resources (Boshoff & Arnolds, 1995). Global challenges facing organisations inherently require that employees be engaged in their respective fields of work in realising organisational objectives.

The concept of work engagement has evolved over time and this has been used to explain the differences in levels of involvement of employees in certain areas within organisations (May, 2003). Maslach (1998) identifies six domains that could assess the degree of match and mismatch between the employee and his job environment, namely workload, control, rewards, community, fairness and values. Most employees often cite the following problems in their work environment as contributing to their level of engagement: difficulties with supervisors, colleagues, job overload and perceived lack of fit between themselves and the environment or roles occupied (May, Gilson & Harter, 2004). According to Berkeleyan (2001), a good fit between the individual and the environment promotes work engagement.

It is important for organisations to understand why some employees are engaged while others are not. Engaged employees tend to be productive, take initiative and immerse themselves fully in their roles. According to May et al. (2004), employees are most likely to be engaged in their work when they experience their work as meaningful and contributing to their sense of self. Job characteristics such as variety, independence, opportunities for learning and participation, role clarity, effective communication, advancement, remuneration and good relationships with

supervisors and colleagues create psychological meaningfulness, availability and safety for employees, aspects that are necessary to be engaged in one's job (May et al., 2004).

May et al. (2004), as well as Olivier and Rothmann (2007), found that psychological meaningfulness showed the strongest relation with work engagement. Psychological meaningfulness was positively related to job enrichment and work role fit. Psychological safety was found to be positively related to rewarding co-worker and supportive supervisor relations. Psychological availability was positively related to resources. Olivier and Rothmann (2007) confirmed that psychological meaningfulness and psychological availability were the strongest predictors of work engagement. Furthermore, Olivier and Rothmann (2007) found that cognitive, emotional and physical resources had a strong effect on psychological availability. Phale and Rothmann (in press) also found that psychological meaningfulness is positively related to work engagement. The contributing factors were: the extent to which individuals experience a "fit" between themselves and the environment, rewarding co-worker relations and perceived growth opportunities at work. They further showed that the psychological condition of psychological availability is positively related to both work engagement and resources (physical, emotional and cognitive).

The psychological condition of psychological availability entails that in every work role, individuals bring with them their physical, emotional and cognitive resources. Job demands and job resources present a situational dimension to the argument of relationships between psychological conditions and work engagement. According to Demerouti, Bakker, Nachreiner and Schaufeli (2001), job demands refer to those aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs. These can vary from changes in the job content (from little work to too much), many deadlines and increased/decreased work pace. Qualitative demands can include role ambiguity and the conflicting obligations that a worker faces (Janssen, 2001; Karasek, 1979). Job resources refer to those aspects of the job that may be functional in achieving work goals, reducing job demands and the associated physiological and psychological costs and stimulating personal growth and development. A lack of job resources includes understaffing with subsequent increases in individual workload, negligence by co-workers, lack of recognition

for work well done, lack of supervisor support, inadequate or poor quality equipment and a lack of career growth and advancement (Karasek, 1979).

Self-efficacy and its applications tap into unique individual functioning, impacting on psychological conditions and work engagement. Self-efficacy refers to a general belief in one's ability to succeed (Salanova, Peiro, & Schaufeli, 2002) and this construct has proven to be relevant in the theory and research on job burnout (erosion of engagement). The lack of confidence in one's own competence is a critical factor in the development of burnout. Salanova et al. (2002) found that employees who were high in self-efficacy experienced difficulties when they experienced a fundamental lack of job control because of uncontrollable situations and controlled personal agency perceptions. Schaubroeck and Merrit (1997) and Karasek (1979) further argued that high job control, combined with high demands and low job self-efficacy had negative health consequences. Employees with high job control were likely to present with high levels of self-efficacy. The concepts of self-efficacy, job demands and resources and psychological conditions warrant further investigation in different areas of work.

Parastatals as institutions of work are not immune to employee and institutional problems, as stated above. The main objective of this study was to explore the relationships between self-efficacy, job demands, job resources, psychological conditions and work engagement in a South African Parastatal. The importance of this study cannot be emphasised enough, because, although the relationship between job demands, job resources and engagement has been extensively researched in the South African context, no research focusing primarily on self-efficacy, job demands and resources and psychological conditions has ever been conducted in this country. This study will contribute to the field and body of knowledge regarding causal relationships between job demands, job resources, psychological conditions and work engagement.

Work engagement

The concept of work engagement has evolved over time and three conceptualisations are discussed in the following section.

Kahn (1990) conceptualised work engagement as the "harnessing of organisational members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively and emotionally during role performances (p. 694). Kahn (1990, p. 700) further explains that personal engagement is "the simultaneous employment and expression of a person's preferred self in task behaviours that promote connections to work and to others, personal presence (physical, cognitive and emotional), and active, full role performances". Personal disengagement is characterised by withdrawal of a person's preferred self evident by emotional absence, passivity and uninvolved and uncoordinated performance outputs (Kahn, 1990).

Kahn (1990) conceptualises engagement in three dimensions, namely: the physical dimension, the cognitive dimension and an emotional dimension. Schaufeli, Salanova, Gonzalez–Roma, and Bakker (2002) conceptualised engagement as comprising of three dimensions. The first dimension, namely that of vigour, is characterised by high levels of energy and mental resilience while working and the willingness and ability to invest in own work. The second dimension is absorption, which is characterised by individuals being fully concentrated in their work as time passes, they quickly feel carried away by their jobs. The total and full absorption in one's work goes beyond merely feeling efficacious. The third dimension is dedication and is characterised by a sense of significance, enthusiasm, inspiration, pride and challenge experienced on the job (Schaufeli et al., 2002). Kahn (1990) highlights the interrelationship between the "self" and "role" wherein the self is the manifestation of personal energies into role behaviours (self employment) and the self within the role (self expression). Maslach and Leiter (1997, p. 23) rephrased burnout as "an erosion of engagement with the job". This means that, as worthwhile and fulfilling the job once was, it begins to evoke feelings of worthlessness and becomes meaningless to the incumbent. Engagement with work provides a more complex and thorough perspective on an individual's relationship with work (Maslach, Schaufeli, & Leiter, 2001).

Emanating from conceptualisations by Kahn (1990) and Schaufeli et al. (2002), it is clear that engagement has three dimensions, namely physical, cognitive and emotional, which are aligned to dimensions of vigour, dedication and absorption.

Psychological conditions and work engagement

According to Kahn (1990) individuals exhibit different ways in which they assume their work roles using all of their personal resources physically, cognitively and emotionally. Work engagement encompasses physical strength utilised by individuals to accomplish their roles. The energy employed assists in applying the self into a role and this affects personal presence and involvement in a role. A "psychological condition" can be defined as a "mental state of being". The individual's perceived experience of certain conditions within himself and his environment contributes to engagement at work. Work engagement is affected by certain conditions within the work environment and the individual respectively that are explained below (Kahn, 1990)

Psychological meaningfulness refers to "a feeling that one is receiving a return on investment of one's self in currency of physical, cognitive or emotional energy" (Kahn, 1990, pp. 703-704). Frankl (1992) stated that individuals have a primary motive to seek meaning in their work. Meaningfulness is defined as the value of work goal or purpose, judged in relation to an individual's own ideals and standards (Hackman & Oldman, 1980; May, 2003; Renn & Vandenberg, 1995). Aktouf (1992) alludes to the fact that the lack of meaning in one's work can lead to alienation or disengagement from it. This also means that the extent to which the work is experienced as meaningful by employees should facilitate both their personal growth and motivation. According to Aktouf (1992), engagement is central to the problem of employees' lack of commitment and motivation. This can be attributed to a number of issues such as meaningless work which is often associated with apathy and detachment from one's work (Thomas & Velthouse, 1990). To employees, meaningful work facilitates both their motivation and personal growth and the restoration of meaning in work is seen as a method to foster their motivation and attachment to the job. Engagement has been linked to variables such as employee turnover, customer satisfaction, loyalty, safety and to a lesser degree productivity and

profitability. May et al. (2004), Olivier and Rothmann (2007) and Phale and Rothmann (in press) confirmed that psychological meaningfulness is positively related to work engagement.

Individuals are likely to experience psychological meaningfulness when they feel useful and valuable and this is influenced by work role fit and rewarding interpersonal interactions with co-workers (Olivier & Rothmann, 2007). Most authors argue that a perceived "fit" between an individual's self concept and his/her role will lead to an experienced sense of meaning due to the ability of the individual to express his/her values and beliefs (Brief & Nord, 1990; Shamir, 1991). According to Shamir (1991), people seek out work roles that allow them to behave in a way that expresses their genuine self-concepts. In a study conducted by May (2003), a confirmation of this perspective was received where work role fit had a significant influence on employees' experienced meaningfulness. In summary, work roles that are aligned with individuals' self concepts should be associated with a more meaningful work experience.

It is believed that individuals who have rewarding interpersonal interactions with their co-workers also experience greater meaning in their work. Relationships with significant others in the work context promotes the extent to which individuals perceive being treated with dignity, respect and value for their contributions. This promotes a sense of belonging, a stronger sense of social identity and meaning. Loss of a social identity is associated with meaningfulness (Florian & Snowden, 1989). Psychological meaningfulness displayed the strongest correlation. May et al. (2004) state that job enrichment and person environment (role) fit are positively linked to psychological meaningfulness. Olivier and Rothman (2007) make an assertion that psychological meaningfulness mediates the characteristics of antecedents such as resources, work role fit and self-consciousness that act as predictors of work engagement. Phale and Rothmann (in press) found that Psychological Meaningfulness does not mediate the relationship between Person-environment Fit, Growth Opportunities and Colleague Support on the one hand and Work engagement on the other hand.

Psychological availability is defined as an individual's belief that he/she has the physical, emotional or cognitive resources to engage the self at work (Kahn, 1990). It assesses the readiness or confidence of a person to engage in his/her work role given that individuals are engaged in many other life activities (May et al., 2004). Psychological availability is influenced by resources (physical, emotional or cognitive). Phale and Rothmann (in press) confirmed that psychological availability is positively related to work engagement.

Individuals bring their physical, emotional and cognitive resources to bear on role related tasks when they engage themselves at work. Most jobs require some level of physical exertion and some demand intense physical challenges that result in injuries (May & Schowoerer, 1994). Even the sitting posture at work can put an insurmountable amount of stress on the back (Hollenbeck, Ilgen, & Crampton, 1992). Individuals vary in their abilities to meet these physical demands based on their strength, stamina and flexibility and in the same light cognitive demands and resources also vary by job and person respectively. When physical resources are depleted this will necessarily result in physical disengagement from one's work role. It is also expected that the availability of resources will lead to greater engagement. Olivier and Rothmann (2007) found that psychological availability mediated the relationship between resources (i.e. cognitive, emotional and physical resources) and self-consciousness on the one hand and work engagement on the other. Maslach et al. (2001) further observed that burnout is particularly related to job demands but engagement is particularly related to job resources (Schaufeli & Bakker, 2002).

May et al. (2004) mentions that individuals should be more willing to engage themselves in their roles at work if they believe that they have the necessary physical, emotional and cognitive resources to do so.

Job demands and resources

According to Schaufeli and Enzmann (1998), organisational stressors can be divided into two groups, namely job demands and (lack of) job resources. The Job-Demands-Resources (JD-R) Model, developed by Demerouti et al. (2001), clearly confirmed that job demands are associated with exhaustion, whereas lacking job resources are associated with disengagement. The Job

Demand-Resources (JD-R) model assumes that two underlying psychological processes play a role in work engagement: an effort-driven process in which excessive job demands lead to exhaustion and a motivation-driven process in which lacking resources lead to disengagement (Demerouti et al, 2001). Job demands are defined as things that have to be done, including physical, social and organisational aspects of the job that require sustained physical and mental effort. Quantitative job demands refer to the amount of work required and the available time frame, while qualitative workload involves employees' affective reactions to their jobs (Cooper, Dewe, & O'Driscoll, 2001).

Previous studies (Karasek, 1979; Van Yperen and Snijders, 2000; Wall, Jackson, Mullarkey, and Parker, 1996; Xie & Johns, 1995) provide evidence that job demands engender mental strain and stress, as well as physical health problems. Karasek (1979) believed that these harmful effects of job demands are greatest when coupled with lack of control in one's job environment. An increase in job demands seems to lead to better job satisfaction and performance, but only up to a certain point, beyond which performance and satisfaction start to decline (Fox, Dwyer, & Ganster, 1993; Theorell & Karasek, 1996; Warr, 1990). Schaufeli and Bakker (2004) found that job demands are associated with exhaustion, whereas job resources are associated with work engagement.

Job resources are those physical, psychological, social or organisational aspects of the job that may be functional in achieving work goals and reducing job demands, with the associated physiological and psychological costs and stimulating personal growth and development (Demerouti et al., 2001). Schaufeli and Bakker (2004) found that engagement is predicted by available job resources. Engagement mediated the relationship between job resources and turnover intentions (Schaufeli & Bakker, 2004). Jackson, Rothmann, and Van de Vijver (2006) reported that job resources predicted work engagement. Furthermore, work engagement mediated the relationship between job resources and organisational commitment (Coetzer & Rothmann, 2004; Barkhuizen & Rothmann, 2006).

Self-efficacy

Bandura (1977, 1997, 2001) wrote extensively on people's belief in their perceived competence and successes. Bandura (1997, p. 3) defines self-efficacy as "belief in one's capabilities to organise and execute the courses of action required to produce given attainments". Schwarzer (1999) defines generalised self-efficacy as a global confidence in one's coping ability across a wide range of demanding or novel situations. On the other hand, self-efficacy as a specific construct is the belief in one's competence in specific situations. Wood and Bandura (1989, p. 408) defined self-efficacy as "...belief in one's capabilities to mobilise the motivation, cognitive resources and courses of action needed to meet organisational demands". Self-efficacy beliefs are domain-specific in that a person's self-efficacy belief is very likely to differ depending on the activity to which it is related (Bandura, 1997, 1999). Self-efficacy can be viewed as a general stable cognition (trait) that individuals hold and carry with them. This trait reflects the expectation that they possess the ability to perform tasks successfully in a variety of achievement situations (Eden & Zuk, 1995).

Jex and Bliese (1999) found a two way interaction effect between job demands and generalised self-efficacy where self-efficacy moderated the relationship between hours of work, quantitative overload and the meaning of the task, with some strain variables such as job dissatisfaction, physical symptoms, propensity to leave, and poor organisational commitment. Many self-efficacy theorists believe that low self-efficacy causes motivational problems. Bandura (1989) further mentions that employees experiencing low self-efficacy doubt their abilities, avoid difficult tasks, show low aspirations and exhibit weaker commitment levels. Self-efficacy impacts on the individual's cognition and affective functioning which in turn impacts on psychological conditions and work engagement (Salanova et al., 2002). The researchers in this study believe that self-efficacy will impact on work-engagement and psychological conditions, based on the understanding that the employees immerse themselves in their respective work roles when they find meaning in their jobs. This is primarily motivated by the ability to find a fit between the individuals' capabilities and the environmental feedback about perceived successes in the role occupied.

The concept of self efficacy has proven to be relevant in the theory and research on work engagement. According to Gardner and Pierce (1998), self-efficacious employees are likely to be successful at executing most or all of their functional duties and responsibilities and accordingly this will promote the individual's level of engagement. Individuals generally immerse themselves fully in respective roles where they know they can perform and attain desired results. Judge, Locke, Durham, and Kluger (1998) found that self-efficacy generally loads on the same factor as self-esteem, because self-efficacy and self-worth are the core components of self-esteem. The researchers postulate that psychological conditions of psychological meaning and psychological availability could be related to self-efficacy. The individual's level of being efficacious relates to a personal judgement of his/her own ideals and standards in relation to the value of a work goal or purpose. This can be attributed to the psychological condition of meaningfulness at work by Kahn (1990). Consistent to this belief, researchers assert that self-efficacy should be related to the psychological condition of availability (individual's belief that he/she has the physical, emotional or cognitive resources to engage the self at work (Kahn, 1990). May et al. (2004), Olivier and Rothmann (2007) and Phale and Rothmann (in press) found positive relationships between psychological meaningfulness and work engagement on the one hand and psychological availability and work engagement on the other.

According to Gardner and Pierce (1998), individuals accumulate self-efficacy through experiences that affect them, resulting from cognitive appraisal and data integration stemming from those experiences. According to Gardner and Pierce (1998), the following factors are likely to lead to high generalised self-efficacy, namely repeated success at a specific task, accumulation of successful experiences across a wide variety of tasks and feedback from the work environment about the individual's successes.

The following hypotheses are formulated with reference to job demands, job resources, psychological conditions, self-efficacy and work engagement.

Hypotheses

H1: Job demands and job resources are related to psychological meaningfulness and availability.

H2: Job demands and job resources will impact on work engagement.

H3: Self-efficacy has a direct impact on psychological conditions and engagement.

METHOD

Research design

A survey design was used to achieve the research objectives and specifically the cross-sectional design where a sample is drawn from the target population at a particular time. Cross-sectional designs are also used to assess interrelationships among variables within the target population group (Shaughnessy & Zechmeister, 1997). Questionnaires were used to gather data in a non-random field survey.

Participants

The participants were employees of a parastatal based at different provinces across South Africa. Paper and electronic questionnaires were sent at random to 300 employees, of which 288 participated in the study. Employees participated voluntarily in the study and confidentiality was maintained. Employees from diverse divisions, occupational groups and education levels from general staff to executive management were included. Most of the participants were female (51,4%), and most of the participants fell in the 31-40 years age group (51%). Educational level revealed that the majority (47,9%) of participants have grade 10, 11, 12 qualifications. The majority of participants had been in the service of the company for 11-20 years (40%) and about 63,2 % had been in position for 0-5 years.

The characteristics of participants are presented in Table 1.

Table 1

Characteristics of the Participants (N=288)

Item	Category	Frequency	Percentage
Race	White	88	30,6
	Black	153	53,1
	Coloured	25	8,7
	Indian	21	7,3
	Other	1	0,3
Gender	Male	140	48,6
	Female	148	51,4
Language	Afrikaans	89	30,9
	English	47	16,3
	Sepedi	23	8,0
	Sesotho	20	7,0
	Setswana	46	16,0
	IsiSwati	4	1,4
	Tshivenda	8	2,9
	IsiNdebele	1	0,4
	IsiXhosa	19	6,6
	isiZulu	28	9,7
	Other	3	1,0
Age distribution	20-30	25	9,0
	31-40	146	51,0
	41-50	87	30,0
	50+	30	10,0
Years in Service	0-5 years	43	15,0
	6-10 years	62	22,0
	11-20 years	114	40,0
	21-30	60	21,0
	30+	9	3,0
Years in Position	0-5 years	182	63,2
	6-10 years	61	21,2
	11-20 years	39	13,5
	20+	6	2,1
Employment category	Executive Management	2	0,69
	Middle management	60	20,8
	Supervisory	20	6,9
	Administrative clerical personnel	83	28,8
	Specialist/Consultant	84	29,2
	Experiential learners	3	1,0
	Branch/Area Managers	17	5,9
	General Staff	19	6,6
Level of education (qualification)	Lower than Grade 10	13	4,5
	Grade 10, 11, 12	138	47,9
	Technical college diploma	56	19,4
	University degree	43	15
	Postgraduate degree	38	13,2
Relationship satisfaction	Very unsatisfied	79	27,4
	2	134	46,6
	3	62	21,5
	4	6	2,1
	Very satisfied	7	2,4
Satisfaction with job	Very unsatisfied	27	9,3
	1		
	2	10	3,5
	3	33	11,5
	4	52	18,1
	Very satisfied	166	57,6

Measuring instruments

The following measuring instruments were used in this empirical study:

The *Job Demands-Resources Scale* (JDRS), which was developed by Barkhuizen and Rothmann (2006) to measure job demands and job resources, consists of 68 items. The questions are rated on a five point scale, ranging from 1 (*never*) to 5 (*always*). The dimensions of the JDRS that were measured include pace and amount of work, mental load, emotional load, variety in work, opportunities to learn, independence in work, relationships with colleagues, relationship with immediate supervisor, ambiguities about work, information, communication, participation, contact possibilities, uncertainty about the future, remuneration and career possibilities. Jackson and Rothmann (2005) found that the dimensions of the JDRS consisted of seven reliable factors, namely organisational support (α = 0,88), growth opportunities (α = 0,80), overload (α = 0,75), job insecurity (α = 0,90), relationship with colleagues (α = 0,76), control (α = 0,71), and rewards (α = 0,78). Rothmann, Mostert and Strydom (2006) found five dimensions, namely growth opportunities (α = 0,86), organisational support (α = 0,92), advancement (α = 0,83), overload (α = 0,76) and job insecurity (α = 0,89). The highly acceptable alpha coefficients ranging from 0,76 to 0,92 were obtained (Nunnally & Bernstein, 1994). The scale shows acceptable internal consistency reliability and was found to be valid for use in this study.

The *Psychological Conditions Scale* of May et al. (2004) has been used in the study by Olivier and Rothmann (2007) and all subscales were included. Psychological Meaningfulness was measured by six items such as item B82 ("The work I do on this job is very important to me"). Psychological Safety was measured by 3 items such as item B88 ("I am not afraid to be myself at work"). Psychological Availability was measured by 5 items such as item B92 ("I am confident in my ability to think clearly at work"). The alpha coefficients for the psychological conditions, namely Psychological Meaningfulness, Psychological Safety and Psychological Availability items varied between 0,71 and 0,90 in the study by May et al. (2004).

The *Work Engagement Scale* (WES), as developed by May et al. (2004), was used to gather information about how employees react to various aspects of their work and work situation. All

items used were measured on a 5-point agreement-disagreement Likert format ranging from 1 (*never*) to 5 (*always*). The items reflected each of the three components of Kahn's (1990) conceptualisation of psychological engagement, namely cognitive, emotional and physical engagement. Work engagement was measured by 18 items (α = 0,62). Olivier & Rothmann (2007) found a one factor engagement model consisting of cognitive, emotional and physical resources (α = 0,72) which was consistent with findings by May et al. (2004) who used fewer items that demonstrated good reliability and represented cognitive, emotional and physical engagement items (α = 0,77).

A task-specific *Self-Efficacy Scale* (SES) was specifically designed for the purposes of this study to evaluate the extent to which the participants are confident in their tasks and support from their environment. The SES consisted of 13 items rated on a five point scale ranging from 1 (*not confident at all*) to 5 (*extremely confident*). The dimensions which were measured include task mastery (Item D3 "I am confident that I can perform my job very well"), physical and mental assertion (Item D2 "I am confident that I have relevant competencies for my work"), persuasion (Item D7 "I am confident that I feel good about my job") and extrinsic motivation (Item D12 "I am confident of the support from my management").

A *biographical questionnaire* was designed and used to gather information on various aspects of the population such as race, gender, marital status, language, education, work and organisational experience.

Statistical analysis

The statistical analyses were carried out with the SPSS program (SPSS, 2008). Cronbach alpha coefficients (α) were used to assess the internal consistency of the measuring instruments (Clark & Watson, 1995). Descriptive statistics (e.g. means and deviations) were used to analyse the data. An exploratory factor analysis was carried out to determine the construct validity of the instruments as follows: First, a simple principal components analysis was conducted on the items of the PSI (Please indicate what it means in full). The eigenvalues and scree plot were studied to determine the number of factors. Then, principal axis factoring with a direct oblimin rotation was

conducted if factors were related ($r > 0,30$). Thirdly, a principal factor analysis with a varimax rotation was used if the obtained factors were not related.

Pearson product-moment correlation coefficients were done to assess the relationships between the variables. Multiple regression analyses were done to investigate whether job/personal characteristics (e.g. work role fit) predict the psychological conditions (e.g. psychological meaningfulness), and whether psychological conditions predict work engagement. In terms of significance, it was decided to set the value at a 95% confidence interval level ($p < 0,05$). Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

RESULTS

Factor analyses

Using principal component analysis, a total of 17 factors with eigenvalues larger than one were extracted on the JDRS. These 17 factors explained 70,95% of the total variance. However, inspection of the scree plot showed 12 interpretable factors, which explained 62,30% of the total variance. The results of a principal factor analysis on the items of the JDRS are shown in Table 2. Loadings on factors and communalities are shown. Variables are ordered and grouped by size of loading to facilitate interpretation.

Table 2 shows that the h^2 values/ variables were relatively well-defined by the 12-factor solution. Communality values, as seen in the table, tend to be moderate to high.

Table 2

Principal Factor Analysis with a Varimax Rotation on the Job Demands-Resources Scale

	1	2	3	4	5	6	7	8	9	10	11	12	h^2
B36 Does your direct supervisor inform you about how well you are doing your work?	**0,80**	0,15	0,06	0,00	-0,03	-0,03	-0,02	-0,04	-0,05	0,06	-0,10	0.17	0,78
B30: In your work, do you feel appreciated by your supervisor?	**0,80**	0,17	-0,04	-0,02	-0,11	0,05	-0,00	-0,15	0,01	0,14	0,04	-0,02	0,79
B33: Do you know exactly what your direct supervisor thinks of your performance?	**0,79**	0,07	-0,01	-0,02	-0,04	-0,04	-0,08	0,00	-0,02	-0,04	-0,09	0,08	0,78
B29: Do you get on well with your supervisor?	**0,76**	0,09	-0,05	0,05	-0,12	0,02	-0,02	-0,01	0,13	0,15	0,15	-0,04	0,78
B35: Do you receive sufficient information on the results of your work?	**0,75**	0,24	0,00	0,09	-0,00	-0,09	-0,02	-0,02	-0,05	0,03	-0,04	0,08	0,75
B28: Can you count on your supervisor when you come across difficulties?	**0,71**	0,08	-0,14	0,06	-0,10	0,00	-0,06	-0,10	0,08	0,23	0,08	-0,07	0,73
B40: Can you discuss work problems with your direct supervisor?	**0,71**	0,11	-0,07	0,09	-0,12	-0,02	0,07	-0,11	0,09	0,16	0,21	-0,08	0,72
B34: Do you receive sufficient information on the purpose of your work?	**0,66**	0,28	-0,03	0,09	-0,07	-0,06	-0,05	-0,15	-0,05	0,02	0,08	0,06	0,69
B37: Are you kept adequately up-to-date about important issues within your department?	**0,49**	0,34	-0,03	0,11	0,10	-0,00	0,05	-0,04	-0,05	0,02	0,22	0,06	0,67
B41: Can you participate in decisions about the nature of your work?	**0,48**	0,47	-0,02	0,18	-0,06	-0,06	0,01	0,02	0,06	0,11	0,20	-0,03	0,62
B32: Do you know exactly for what you are responsible and which areas are not your responsibility?	**0,48**	0,12	-0,13	-0,05	-0,18	-0,27	0,10	-0,01	-0,02	0,08	0,18	0,08	0,58
B38: Is the decision-making process of your department/ organization clear to you?	**0,48**	0,32	-0,13	0,24	0,01	-0,01	-0,01	0,06	-0,13	-0,08	0,28	0,20	0,69
B31: Do you know exactly what other people expect of you in your work?	**0,44**	0,23	-0,05	0,03	-0,07	-0,11	-0,00	-0,17	0,05	0,04	0,11	0,12	0,49
B27: Do you get on well with your colleagues?	**0,39**	0,03	0,02	-0,01	-0,06	0,02	-0,12	-0,02	0,03	0,36	0,29	-0,01	0,63
B39: Is it clear to you whom you should address within the department/organization for specific problems?	**0,36**	0,23	-0,10	0,14	-0,04	-0,09	0,04	-0,12	-0,04	0,03	0,36	0,04	0,59
B53: Does your organization give you opportunities to follow training courses?	**0,34**	0,21	0,06	0,25	-0,05	0,10	-0,14	-0,01	0,08	0,18	-0,10	0,23	0,61
B21: Does your job offer you the possibility of independent thought and action?	0,17	**0,78**	-0,00	0,08	-0,11	-0,04	-0,07	-0,08	0,10	0,03	0,08	-0,10	0,78
B20: Does your work give you the feeling that you can achieve something?	0,28	**0,70**	0,07	0,16	-0,17	-0,03	-0,10	-0,08	0,09	0,15	-0,12	0,08	0,73
B19: Does your job offer you opportunities of personal growth and development?	0,36	**0,62**	0,04	0,19	-0,06	0,12	-0,09	-0,07	0,06	0,17	-0,18	0,09	0,71
B23: Do you have influence in the planning of your work activities?	0,27	**0,60**	0,05	0,23	-0,05	-0,05	-0,03	-0,04	-0,03	0,06	0,18	0,09	0,60
B18: Do you have enough variety in your work?	0,15	**0,55**	0,24	0,00	0,06	0,09	-0,02	0,06	0,11	0,04	-0,04	0,10	0,59
B24: Can you participate in the decision about when a piece of work must be completed?	0,35	**0,54**	-0,20	0,04	-0,09	-0,03	-0,03	0,02	-0,00	0,09	0,25	0,02	0,71

Table 2

Principal Factor Analysis with a Varimax Rotation on the Job Demands-Resources Scale (continue)

	1	2	3	4	5	6	7	8	9	10	11	12	h^2
B17: Does your work make sufficient demands on all your skills and capacities?	0,17	**0,54**	0,30	-0,04	0,03	0,03	0,02	0,11	0,07	-0,02	-0,11	0,08	0,68
B16: Does your work require creativity?	0,01	**0,51**	0,34	0,06	0,07	-0,10	-0,03	0,07	0,11	-0,05	-0,18	0,07	0,66
B22: Do you have freedom in carrying out your work activities?	0,35	**0,51**	-0,10	0,17	-0,11	-0,07	-0,03	-0,16	0,03	0,09	0,26	-0,07	0,63
B42: Do you have direct influence on your department/organization's decisions?	0,36	**0,47**	-0,02	0,22	-0,00	0,06	-0,02	0,02	-0,05	0,05	0,28	0,10	0,68
B2: Do you work under time pressure?	0,05	0,02	**0,70**	-0,02	0,30	0,06	-0,03	-0,01	0,05	-0,10	0,03	-0,06	0,72
B3: Do you have to work extra hard in order to complete something?	0,03	0,09	**0,66**	-0,07	0,18	0,10	-0,05	-0,04	0,03	-0,10	-0,15	-0,21	0,80
B1: Do you have too much work to do?	-0,03	0,14	**0,65**	-0,09	0,17	0,05	-0,05	-0,08	-0,02	-0,09	-0,05	-0,09	0,67
B10: Do you have to be attentive to many things at the same time?	-0,07	0,11	**0,60**	0,02	0,01	0,01	0,22	0,17	-0,03	-0,12	0,03	0,07	0,65
B12: Do you have to remember many things at the same time?	-0,05	0,13	**0,60**	0,09	-0,05	-0,11	0,18	0,19	-0,00	0,07	0,02	0,08	0,75
B11: Do you have to give continuous attention to your work?	-0,08	0,07	**0,55**	0,10	-0,05	-0,08	0,19	0,13	-0,10	0,04	0,12	0,08	0,78
B14: Do you have contact with difficult people in your work?	-0,17	-0,03	**0,49**	0,05	0,07	0,01	0,24	0,20	0,01	0,06	-0,03	0,18	0,63
B15: Does your work put you in emotionally upsetting situations?	-0,24	-0,17	**0,44**	-0,07	0,07	0,04	0,18	0,25	0,04	-0,00	-0,18	0,08	0,67
B13: Are you confronted in your work with things that affect you personally?	-0,17	-0,07	**0,38**	0,06	0,16	-0,03	0,13	0,30	0,14	0,07	-0,20	0,23	0,59
B4: Do you have to bend forward when you work?	0,06	-0,15	**0,38**	-0,07	0,10	0,15	0,37	0,07	-0,01	0,04	-0,07	-0,10	0,62
B51: Do you think you are paid enough for the work that you do?	0,02	0,05	-0,06	**0,84**	-0,08	-0,08	-0,02	-0,03	-0,05	0,01	0,06	-0,03	0,82
B49: Do you think that your organization pays good salaries?	0,10	0,09	0,12	**0,82**	-0,06	0,00	-0,00	0,02	0,06	-0,03	0,12	0,06	0,81
B50: Can you live comfortably on your pay?	0,08	0,12	0,06	**0,79**	0,00	0,04	-0,05	0,03	-0,07	-0,16	0,15	-0,03	0,81
B52: Does your job offer you the possibility to progress financially?	0,10	0,26	-0,08	**0,73**	-0,01	0,03	-0,02	0,07	0,06	0,11	-0,07	0,03	0,73
B54: Does your job give you the opportunity to be promoted?	0,22	0,32	-0,07	**0,47**	0,07	0,07	0,01	-0,01	0,12	0,26	-0,14	-0,14	0,71
B60: Does your work keep you from doing your best for your family?	-0,20	-0,10	0,19	-0,08	**0,87**	0,20	0,05	0,01	-0,05	-0,05	-0,01	-0,03	0,88
B61: Does you family suffer because of your job?	-0,13	-0,12	0,17	-0,09	**0,78**	0,17	0,10	0,04	-0,05	-0,01	-0,02	-0,03	0,80
B59: Does your job keep you from spending as much time with your family as you would like?	-0,11	0,03	0,16	0,01	**0,78**	0,11	-0,01	0,07	0,03	-0,11	-0,70	-0,03	0,79
B62: Do you miss out on important family events because of your work?	-0,14	-0,07	0,09	-0,01	**0,70**	0,10	0,23	0,14	-0,03	-0,03	-0,11	-0,03	0,75
B57: Do your family duties keep you from spending as much time at work as you would like?	-0,13	0,06	0,05	0,03	0,16	**0,82**	0,08	0,09	-0,00	-0,09	-0,05	0,01	0,79
B56: Does your work suffer because you need to take care of your family?	-0,04	0,05	0,04	-0,01	0,12	**0,80**	0,03	0,10	-0,02	-0,06	-0,05	0,04	0,76
B58: Do your family duties prevent you from doing a better job at work?	-0,02	0,01	-0,04	-0,03	0,05	**0,80**	0,11	0,04	0,00	-0,01	-0,01	0,01	0,78

Table 2

Principal Factor Analysis with a Varimax Rotation on the Job Demands-Resources Scale (continue)

	1	2	3	4	5	6	7	8	9	10	11	12	h^2
B55: Do your family duties prevent you from spending more time at work?	-0,04	-0,08	0,01	0,01	0,10	**0,54**	-0,00	0,03	0,03	0,07	-0,04	0,03	0,52
B8: Does your work require that you reach high (to catch something or to do something)?	0,02	-0,03	0,00	0,04	-0,04	0,01	**0,73**	-0,00	0,11	0,01	-0,08	-0,07	0,71
B6: Do you have to move or shift large, heavy objects?	-0,10	-0,10	0,09	-0,10	0,16	0,06	**0,61**	0,01	0,10	-0,13	-0,06	0,02	0,64
B7: Do you have to carry out your work standing?	-0,04	0,05	0,17	0,07	0,11	-0,08	**0,60**	0,13	0,15	-0,09	-0,17	-0,01	0,64
B9: Do you have to carry out your work in an unusual posture?	-0,01	0,06	0,06	-0,14	0,03	0,08	**0,58**	0,07	-0,03	0,03	0,00	-0,09	0,62
B5: Do you have to kneel when you work?	-0,01	-0,02	0,18	0,05	0,02	0,07	**0,51**	-0,06	0,05	-0,02	0,10	-0,01	0,69
B64: Do employees from different racial/ethnic groups discriminate against each other?	-0,01	0,07	0,15	-0,02	0,04	0,11	0,08	**0,83**	0,01	-0,08	-0,01	-0,10	0,82
B65: Do employees from different racial/ethnic groups misunderstand each other at work?	-0,17	-0,05	0,12	0,09	0,09	0,08	0,09	**0,76**	0,04	-0,03	0,03	-0,09	0,79
B63: Do employees from different racial/ethnic groups show prejudice toward each other at work?	-0,17	-0,02	0,23	-0,00	0,08	0,11	-0,05	**0,62**	0,08	-0,02	-0,01	-0,11	0,73
B47: Do you need to be more secure that you will keep your current job in the next year?	-0,01	0,09	0,00	0,03	-0,01	-0,01	0,09	0,03	**0,96**	0,03	0,04	-0,07	0,89
B46: Do you need to be more secure that you will still be working in one year's time?	0,02	0,06	-0,01	-0,03	-0,05	-0,04	0,13	0,04	**0,73**	0,06	-0,02	0,02	0,76
B48: Do you need to be more secure that next year you will keep the same function level as currently?	0,05	0,14	0,01	0,03	-0,01	0,07	0,09	0,05	**0,68**	-0,05	-0,01	0,04	0,70
B26: If necessary, can you ask colleagues for help?	0,28	0,15	-0,12	-0,03	-0,07	0,01	-0,03	-0,05	0,03	**0,79**	0,16	-0,03	0,82
B25: Can you count on your colleagues when you come across difficulties in your work?	0,24	0,17	-0,10	0,02	-0,08	-0,05	-0,06	-0,10	-0,01	**0,66**	0,06	0,04	0,82
B43: Do you have contact with colleagues as part of your work?	0,33	0,10	0,13	0,01	-0,08	-0,07	-0,08	0,04	-0,06	**0,38**	0,37	0,06	0,62
B45: Do you find that you have enough contact with colleagues during working hours?	0,26	-0,02	-0,05	0,17	-0,08	-0,11	-0,10	-0,01	0,03	0,13	**0,52**	0,14	0,77
B44: Can you have a chat with colleagues during working hours?	0,17	-0,04	-0,09	0,02	-0,10	-0,09	-0,14	0,05	0,02	0,23	**0,41**	0,13	0,77
B67: Do employees in your organisation respect racial/ethnic differences at work?	0,06	0,08	-0,00	-0,01	0,05	-0,02	-0,03	-0,17	-0,10	-0,01	0,07	**0,69**	0,73
B66: Do employees in your organisation socialise with others across racial/ethnic lines at work?	0,09	0,04	0,05	-0,03	-0,11	-0,00	-0,10	-0,01	0,05	-0,07	0,20	**0,66**	0,73
B68: Does racial/ethnic diversity benefit you at work?	0,12	0,09	0,00	0,10	-0,03	0,10	-0,06	-0,05	0,04	0,09	-0,04	**0,38**	0,59

Using a principal component analysis, three factors with eigenvalues larger than one were extracted on the SES. These factors explained 69,48% of the total variance. However, inspection of the scree plot showed that two interpretable factors, which explained 61,68% of the total variance, could be extracted. The results of a principal factor analysis on the items of the SES are shown in Table 3. Loadings on factors and communalities are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Labels for each factor are suggested below.

Table 3

Principal Factor Analysis with a Direct Oblimin Rotation on the SES

	Factor 1	Factor 2	h^2
D3 I am confident that I can perform my job very well	**0,94**	-0,10	0,89
D1 I am confident about my abilities in the work that I do	**0,87**	-0,10	0,77
D5 I am confident that I can produce the desired work results	**0,83**	-0,01	0,69
D2 I am confident that I have relevant competencies for my work	**0,78**	-0,11	0,62
D4 I am confident that I am in control of most aspects about my job	**0,66**	0,15	0,46
D11 I am confident that I can effectively resolve problems in my work	**0,63**	0,15	0,42
D10 I am confident that any assignment I undertake I will be able to execute with ease	**0,61**	0,11	0,38
D6 I am confident that I am suited for this job	**0,60**	0,07	0,36
D9 I am confident that I can set my own work standards and achieve them	**0,47**	0,34	0,34
D8 I am confident that I have good role models in my work	-0,04	**0,80**	0,64
D12 I am confident of the support from my management	0,07	**0,79**	0,62
D13 I am confident of the support from my colleagues	0,12	**0,58**	0,34
D7 I am confident that I feel good about my job	0,35	**0,42**	0,34

Table 3 shows that the variables were relatively well-defined by the two-factor solution. Communality values, as seen in the table, tend to be moderate to high. Factor 1 represents *self-efficacy* or *task mastery* (the extent to which individuals believe in their own abilities) and factor 2 represents e*fficacy others or role models* (feedback and support from the work environment). The literature on self-efficacy distinguishes about four elements, namely task mastery, persuasion, mental alertness and role models. In this study, the abovementioned factors were clustered into two main factors of task mastery and role models. A well-defined efficacious individual receives confirmation through feedback and support for success in work tasks or assignments by colleagues and supervisors.

Descriptive statistics, alpha coefficients and correlations

The descriptive statistics, alpha coefficients and correlation coefficients of the scales of the measuring instruments are reported in Table 4.

Table 4

Descriptive Statistics, Alpha Coefficients and Correlations of the Scales

		Mean	*SD*	α	1	2	3	4	5	6	7	8	9	10	11
1.	Work Engagement	29,59	4,28	0,62	-	-	-	-	-	-	-	-	-	-	-
2.	Psychological Meaningfulness	21,29	4,35	0,79	0,30*+	-	-	-	-	-	-	-	-	-	-
3.	Psychological Availability	21,96	3,08	0,84	0,26*	0,37*+	-	-	-	-	-	-	-	-	-
4.	Organisational Support	57,28	12,99	0,92	0,21*	0,43*+	0,34*+	-	-	-	-	-	-	-	-
5.	Growth Opportunities	31,93	6,12	0,88	0,27*	0,48*+	0,22*	0,59*++	-	-	-	-	-	-	-
6.	Advancement	10,08	4,10	0,81	0,20*	0,23*	0,08	0,35*+	0,44*+	-	-	-	-	-	-
7.	Overload	31,92	6,12	0,81	0,34*+	-0,05	-0,01	-0,19*	0,02	-0,02	-	-	-	-	-
8.	Physical Load	3,25	1,74	0,70	0,04	-0,12*	-0,17*	-0,10	-0,12	-0,02	0,22*	-	-	-	-
9.	Work-home Interference	7,66	3,88	0,89	0,21*	-0,20*	-0,19*	-0,24*	-0,16*	-0,03	0,30*+	0,14*	-	-	-
10.	Home-work Interference	6,05	2,92	0,84	0,05	-0,08	-0,15*	-0,06	0,03	0,11	0,05	0,05	0,35*+	-	-
11.	Self-efficacy	36,92	6,08	0,91	0,19*	0,21*	0,36*+	0,32*+	0,18*	0,05	-0,01	0,00	-0,14*	-0,10	-
12.	Efficacy Others	9,72	3,08	0,78	0,21*	0,37*+	0,24*	0,64*++	0,51*++	0,29*	-0,20*	-0,00	-0,25*	-0,05	0,45*+

* $p < 0,05$ – statistically significant

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

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

Table 4 shows that Work Engagement is statistically and practically significantly related to Psychological Meaningfulness (medium effect) and Overload (medium effect). Psychological meaningfulness is statistically and practically significantly related to Psychological Availability (medium effect), Organisational Support (medium effect), Growth Opportunities (medium effect) and Efficacy Others (medium effect). Psychological Availability is statistically and practically significantly related to Organisational Support (medium effect) and Self-efficacy (medium effect). Organisational Support is statistically and practically significantly related to Growth Opportunities (large effect), Advancement (medium effect), Self-efficacy (medium effect) and Efficacy Others (large effect). Growth Opportunities is statistically and practically significantly related to Advancement (medium effect) and Efficacy Others (large effect). Overload is statistically and practically significantly related to Work-home Interference (medium effect).

The results of multiple regression analyses with Work Engagement (as measured by the WES) as dependent variable, and job demands, job resources (as measured by the JDRS), Psychological Conditions (as measured by the PCQ), and Self-efficacy (as measured by the SES) as independent variables are reported in Table 5.

Table 5

Multiple Regression Analyses with Work Engagement as Dependent Variable and Job/home Demands, Psychological Conditions and Self-efficacy as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	R^2	ΔR^2
		B	SE	Beta					
1							8,68*	0,13	0,13*
	(Constant)	22,72	1,49		15,27	0,00			
	Overload	0,22	0,05	0,31	4,78	0,00*			
	Physical Load	-0,23	0,17	0,08	-1,34	0,18			
	Work-home Interference	0,13	0,07	0,12	1,79	0,08			
	Home-work Interference	-0,06	0,10	-0,04	-0,60	0,55			
2							16,32*	0,29	0,16*
	(Constant)	10.20	2,34		4,35	0,00			
	Overload	0,19	0,04	0,27	4,64	0,00*			
	Physical Load	-0,15	0,15	-0,05	-0,95	0,34			
	Work-home Interference	0,25	0,07	0,23	3,68	0,00*			
	Home-work Interference	-0,01	0,09	-0,00	-0,07	0,94			
	Psychological Meaningfulness	0,33	0,06	0,34	5,56	0,00*			
	Psychological Availability	0,22	0,08	0,16	2,57	0,01			
3							13,33*	0,31	0,02*
	(Constant)	8.21	2.50		3,28	0,00			
	Overload	0,21	0,04	0,29	4,93	0,00*			
	Physical Load	-0,16	0,15	-0,06	-1,06	0,29			
	Work-home Interference	0,27	0,07	0,26	4,07	0,00*			
	Home-work Interference	0,00	0,09	0,00	0,00	1,00			
	Psychological Meaningfulness	0,29	0,06	0,29	4,50	0,00*			
	Psychological Availability	0,18	0,09	0,13	2,05	0,04			
	Self-efficacy	0,04	0,05	0,05	0,82	0,42			
	Efficacy Others	0,19	0,09	0,13	2,02	0,04			

* $p < 0,05$ – statistically significant

Table 5 shows that Overload, Physical load, Work-home Interference and Home–work Interference (as measured by the JDRS) predict 13% of the variance in Work Engagement (as measured by the WES) ($R^2 = 0,13$). One variable, namely overload ($t = 4,78$, $p<0,01$), made a statistically significant contribution to the regression model as revealed by the value. The standardised regression coefficient is $\beta = 0, 31$. . This is indicated that overload was the strongest predictor of work engagement.

Table 5 also shows that Overload, Physical load, Work-home Interference, Home-work Interference (as measured by the JDRS) and Psychological Meaningfulness and Availability (as

measured by the PCQ) predict 16% of the variance in Work Engagement (as measured by the WES) (R^2 = 0,16). Three variables made a statistically significant contribution to the regression model indicated by their t-values, namely Overload (t=4,64, p<0,01), Work-home Interference (t=3,68, p< 0,01) and Psychological Meaningfulness (t=5,56, p<0,01). It is clear that psychological meaningfulness was the strongest predictor of work engagement, with the standardised regression coefficient is β = 0,34. Table 5 also shows that Overload, Physical load, Work-home Interference (as measured by the JDRS), Psychological Meaningfulness and Availability (as measured by PCQ), Self-efficacy and Efficacy others (as measured by the SES) predict 31% of the variance in Work Engagement (as measured by the WES). Three variables made a statistically significant contribution to the regression model, namely Overload (t=4,93, p<0,01), Work-Home Interference (t=4,07, p<0,01) and Psychological Meaningfulness (t=4,50, p<0,01). It is clear that overload and psychological meaningfulness were strong predictors of work engagement.

The results of multiple regression analyses with Work Engagement (as measured by the WES) as dependent variable, and job resources (as measured by the JDRS), Psychological Conditions (as measured by the PCQ), and Self-efficacy (as measured by the SES) as independent variables are reported in Table 6.

Table 6

Multiple Regression Analyses with Work Engagement as Dependent Variable and Job Resources, Psychological Conditions and Self-efficacy as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	T	p	F	R^2	ΔR^2
		B	SE	Beta					
1							7,04*	0,08	0,08*
	(Constant)	24,00	1,31		18,29	0,00			
	Organisational Support	0,02	0,03	0,07	0,90	0,37			
	Growth Opportunities	0,10	0,04	0,20	2,39	0,02			
	Advancement	0,08	.072	0,07	1,04	0,30			
2							8,52*	0,16	0,08*
	(Constant)	18,27	2,04		8,98	0,00			
	Organisational Support	-0,01	0,03	-0,03	-0,37	0,71			
	Growth Opportunities	0,06	0,04	0,11	1,38	0,17			
	Advancement	0,08	0,07	0,08	1,16	0,25			
	Psychological Meaningfulness	0,24	0,07	0,24	3,28	0,00*			
	Psychological Availability	0,18	0,10	0,13	1,92	0,06			
3							6,67*	0,17	0,01
	(Constant)	16,30	2,27		7,17	0,00			
	Organisational Support	-0,01	0,03	-0,04	-0,45	0,65			
	Growth Opportunities	0,07	0,04	0,13	1,49	0,14			
	Advancement	0,09	0,07	0,09	1,33	0,18			
	Psychological Meaningfulness	0,24	0,07	0,24	3,30	0,00*			
	Psychological Availability	0,13	0,10	0,09	1,28	0,20			
	Self-efficacy	0,10	0,05	0,14	1,93	0,06			
	Efficacy Others	-0,07	0,13	-0,05	-0,53	0,60			

* $p < 0,05$ – statistically significant

Table 6 shows that Organisational Support, Growth Opportunities and Advancement (as measured by the JDRS) predict 8% of the variance in Work Engagement (as measured by the WES). No variable made a statistically significant contribution to the regression model.

Table 6 also shows that Organisational Support, Growth Opportunities, Advancement (as measured by the JDRS), Psychological Meaningfulness and Psychological Availability (as measured by the PCQ) predict 8% of the variance in work engagement (as measured by the WES). One variable made a statistically significant contribution to the regression model, namely Psychological Meaningfulness (t = 3,28, p<0,01). It is clear that psychological meaningfulness was the strongest predictor of work engagement, with a standardised coefficient of 0,24.

Table 6 further shows that Organisational Support, Growth Opportunities, Advancement (as measured by the JDRS), Psychological Meaningfulness and Psychological Availability (as measured by the PCQ), Self-efficacy and Efficacy Others (as measured by the SES) predict 17% of the variance in Work engagement (as measured by the WES). Only one variable made a significant contribution to the regression model, namely Psychological Meaningfulness (t = 3,30; p < 0,01). The standardised regression coefficient for Psychological Meaningfulness was β = 0,24. It is evident that psychological meaningfulness is the strongest predictor of work engagement.

The results of multiple regression analyses with Psychological Meaningfulness (as measured by the PCQ) as dependent variable, and job demands, job resources (as measured by the JDRS), Psychological Conditions (as measured by the PCQ), and Self-efficacy (as measured by the SES) as independent variables are reported in Table 7.

Table 7

Multiple Regression Analyses with Psychological Meaningfulness as Dependent Variable and Job Demands, Job Resources and Self-efficacy as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	t	P	F	R^2	ΔR^2
		B	SE	Beta					
1							30,43*	0,27	0,27*
	(Constant)	10.20	1,18		8,63	0,00			
	Organisational Support	0,10	0,02	0,28	4,04	0,00*			
	Growth Opportunities	0,16	0,04	0,29	4,01	0,00*			
	Advancement	0,01	0,07	0,01	0,14	0,89			
2							13,34*	0,28	0,01*
	(Constant)	10,54	2,00		5,28	0,00			
	Organisational Support	0,10	0,03	0,28	3,71	0,00*			
	Growth Opportunities	0,15	0,04	0,28	3,68	0,00*			
	Advancement	0,02	0,07	0,01	0,22	0,82			
	Overload	0,04	0,04	0,05	0,88	0,38			
	Physical Load	-0,10	0,15	-0,04	-0,67	0,51			
	Work-home Interference	-0,08	0,07	-0,07	-1,11	0,27			
	Home-work Interference	-0,04	0,09	-0,03	-0,44	0,66			

* $p < 0,05$ – statistically significant

Table 7 shows that Organisational Support, Growth Opportunities and Advancement (as measured by the JDRS) predict 27% of the variance in Psychological Meaningfulness (as measured by the WES). Two variables made a statistically significant contribution to the regression model, namely Organisational Support (t=4,04, p<0,01) and Growth Opportunities (t=4,01, p<0,01). The standardised coefficient for Growth Opportunities is β = 0,29, while the standardised regression coefficient for Organisational Support is β = 0,28. Growth opportunities and organisational support were the strongest contributors to psychological meaningfulness.

Table 7 also shows that Organisational Support, Growth Opportunities, Advancement, Overload, Physical Load, Work–Home Interference and Home-Work Interference (as measured by the JDRS) only predicts 1% of the variance in Psychological Meaningfulness (as measured by the PCQ). Two variables made a statistically significant contribution to the regression model, namely Organisational Support (t=3,71, p< 0,01) and Growth Opportunities (t=3,68, p<0,01). The standardised regression coefficients for both Organisational Support and Growth

Opportunities are 0,28 respectively. It was evident that organisational support and growth opportunities were the strongest predictors of psychological meaningfulness.

The results of multiple regression analyses with Psychological Meaningfulness (as measured by the PCQ) as dependent variable, and job demands, job resources (as measured by the JDRS), and Self-efficacy (as measured by the SES) as independent variables are reported in Table 8.

Table 8

Multiple Regression Analyses with Psychological Meaningfulness as Dependent Variable and Job Demands, Job Resources and Self-efficacy as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*P*	*F*	R^2	ΔR^2
		B	SE	Beta					
1							4,18*	0,07	0,07*
	(Constant)	23,26	1,10		21,19	0,00			
	Overload	0,04	0,03	0,07	1,03	0,30			
	Physical Load	-0,22	0,12	-0,12	-1,80	0,07			
	Work-home Interference	-0,13	0,05	-0,17	-2,45	0,02			
	Home-work Interference	-0,12	0,07	-0,11	-1,62	0,11			
2							6,19*	0,16	0,09*
	(Constant)	17,81	1,53		11,64	0,00			
	Overload	0,05	0,03	0,10	1,57	0,12			
	Physical Load	-0,18	0,12	-0,09	-1,52	0,13			
	Work-home Interference	-0,08	0,05	-0,10	-1,43	0,15			
	Home-work Interference	-0,11	0,07	-0,10	-1,52	0,13			
	Organisational Support	0,08	0,02	0,33	4,08	0,00*			
	Growth Opportunities	-4,77	0,03	0,00	0,00	1,00			
	Advancement	-0,03	0,05	-0,04	-0,55	0,58			

* $p < 0,05$ – statistically significant

Table 8 shows that Overload, Physical load, Work-home Interference and Home-work Interference (as measured by the JDRS) predict 7% of the variance in Psychological Meaningfulness (as measured by the PCQ). Table 8 also shows that Overload, Physical Load, Work-home Interference, Home-work Interference, Organisational Support, Growth opportunities and Advancement (as measured by the JDRS) together predict 16% of the variance in Psychological Meaningfulness (as measured by the PCQ). One variable, namely Organisational Support (t=4,08, p<0,01) made a statistically significant contribution to the regression model. The standardised regression coefficient for Organisational Support is $\beta = 0,33$.

This indicated that organisational support was the strongest predictor of psychological meaningfulness.

The results of multiple regression analyses with Work Engagement (as measured by the WES) as dependent variable and Psychological Conditions (as measured by the PCQ), as independent variables are reported in Table 9.

Table 9

Multiple Regression Analyses with Work Engagement as Dependent Variable and Psychological Conditions as Independent Variable

Model		Unstandardised Coefficients		Standardised Coefficients	t	p	F	R^2	ΔR^2
		B	SE	Beta					
1							27,34*	0,09	0,09*
	(Constant)	23,27	1,25		18,68	0,00			
	Psychological Meaningfulness	0,30	0,06	0,31	5,23	0,00*			
2							17,45*	0,11	0,02*
	Psychological Meaningfulness	0,24	0,06	0,24	3,90	0,00*			
	Psychological Availability	0,23	0,09	0,16	2,64	0,01*			

* $p < 0,05$ – statistically significant

Table 9 shows that Psychological Meaningfulness (as measured by the PCQ) predicts 9% of variance in Work Engagement (R^2 = 0,09). Psychological meaningfulness made a statistically significant contribution to the regression model (t=5,23, $p < 0,01$). The standardised regression coefficient for Psychological Meaningfulness is β = 0,31. Table 9 also shows that Psychological Availability and Psychological Meaningfulness (as measured by the PCQ) predict 11% of the variance in Work Engagement. Psychological Meaningfulness (t=3,90, p<0,01) and Psychological Availability (t=2,64, p<0,01) made statistically significant contributions to the regression model as revealed by the t values. The standardised regression coefficients for Psychological Meaningfulness and Psychological Availability are β = 0,24 and β = 0,16 respectively.

DISCUSSION

The aim of this study was to investigate the relationships between self-efficacy, job demands, job resources, psychological conditions and work engagement. The results showed that overload and psychological meaningfulness were found to be the strongest predictors of work engagement, supporting the findings of May et al. (2004). It was further found that overload is positively related to work-home interference. Growth opportunities and organisational support were the best predictors of psychological meaningfulness, which is also one of the strongest predictors of work engagement.

The correlations in the present study showed that work engagement is directly related to psychological meaningfulness and overload. Overload includes working under pressure, attending to too many things at a time, having too much to do and being confronted by emotionally upsetting situations at work. Psychological meaningfulness is positively related to psychological availability, growth opportunities, organisational support and efficacy others. Psychological availability relates to organisational support and self-efficacy. Organisational support is related to growth opportunities, advancement, self-efficacy and efficacy others. Growth opportunities are related to advancement and efficacy-others (focused feedback from significant others in the working environment like supervisors and colleagues), while overload is related to work-home interference. Psychological availability is the sense of having the resources to personally engage at a particular moment.

Schaufeli and Bakker (2004) found that job resources leads to a motivational process, where the presence of adequate job resources reduces job demands, fosters goal accomplishment and stimulates personal growth and development. Research findings in the literature on burnout/work engagement indicate that work engagement is mainly predicted by resources (Demerouti et al. 2001; Schaufeli & Bakker, 2004). Maslach et al. (2001) made an observation that burnout is particularly related to job demands, but engagement is particularly related to job resources (Schaufeli & Bakker, 2002).

From the regression analyses, the following findings were obtained, indicating that overload (explained as a job demand) was the strongest predictor of work engagement. Psychological meaningfulness was the strongest predictor of work engagement and this was consistently found in the regression analyses. This finding confirms previous research on engagement and psychological meaningfulness (Kahn, 1990; May et al., 2004; Schaufeli, 2003). It was further found that overload and psychological meaningfulness were strong predictors of work engagement. Furthermore, growth opportunities and organisational support were the strongest predictors of psychological meaningfulness. Consistently, organisational support was the strongest predictor of psychological meaningfulness. Also, organisational support was consistently the strongest predictor of psychological meaningfulness in this study.

Growth opportunities (which refer to possibilities of independent thought, freedom in carrying out work activities, influence in planning of work activities, personal growth and variety at work) were found to be the strongest predictor of psychological meaningfulness. Consistent with the findings of May et al. (2004), aspects of job enrichment which encompasses growth opportunities predicted psychological meaningfulness. This finding indicates that individuals will find value in their work goal when it relates to their own ideals and standards. Findings in this study are further confirmed by May et al. (2004) and Olivier and Rothmann (2007).

Results in this study found that organisational support which taps into the individual's relationship with the supervisor, ambiguities regarding work, information, communication, participation and contact possibilities predicted psychological meaningfulness. In summary, findings of this study indicate that both growth opportunities and organisational support are the strongest predictors of psychological meaningfulness, which is also one of the strongest predictors of work engagement. The multiple regression analyses indicate that organisational support, growth opportunities and advancement predict 27% of the variance in psychological meaningfulness. These findings support hypotheses 1 and 2 and both Hypothesis 1 and Hypothesis 2 are accepted.

The outcomes of this study also find in support of May et al. (2004) and Olivier and Rothmann (2007). Psychological availability was found to be positively related to organisational support

and self-efficacy, which means that the extent to which individuals will be emotionally and cognitively available in their roles, is largely dependant on the extent to which individuals feel supported in the workplace by colleagues and supervisors. Linked to that will be the extent to which they feel competent enough to perform their required tasks. A multiple regression analysis showed that overload, physical load, work-home interference, job demands, psychological meaningfulness, availability, self-efficacy and efficacy others predict 31% of the variance in work engagement. These findings are in full support of hypothesis 3, which confirms a positive relationship between psychological conditions and self-efficacy. As a result Hypothesis 3 is accepted.

The conceptualisation by May et al. (2004) asserts that individuals bring along their total sense of being in their work roles. Different work roles carry with them varying levels of physical, cognitive and emotional components. Additionally, jobs carry different demands, including physical, social and organisational aspects that require sustained physical and mental effort. A distinction between quantitative job demands (amount of work required and the available time frame) and qualitative workload (employees' affective reactions to their jobs) is consciously made (Cooper et al., 2001). Past research has also shown that overload and lack of autonomy seem to be the main problems in production workers (De Jonge & Kompier, 1997), interaction with learners contributed to erosion of engagement (Van Horn, Schaufeli, & Enzmann, 1999) and patient demands determine the medical practitioners' level of disengagement (Bakker, Schaufeli, Sixma, Bosveld, & Dierendonck, 2000).

An assertion is made here that the extent to which individuals appraise their work situation as supportive and full of growth and advancement opportunities will contribute to how they will immerse themselves in the work roles. This is also dependent on the individual's perceived self-belief in own competencies to perform and produce the desired results, through personal effort and available resources at any given time or in any situation. The extent to which individuals also experience the sense that others believe in their capabilities and are contributing to their self-belief and self worth at work, affects their levels of work engagement.

Jackson et al. (2006) found that job resources predicted work engagement. This relationship was also confirmed by Coetzer and Rothmann (2004) and Barkhuizen and Rothmann (2006).

This study had various limitations. Firstly, the use of cross-sectional design presented a limitation, even though advanced techniques such as structural equation modelling were used. The sample size used was small and not fully representative in terms of race, gender, education and experience. Only 288 respondents participated in the study, 51% of whom were female and 51 % of participants fell in the 31-40 age group. 40% of the respondents had 11-20 years organisational experiences. The size of the sample had significant limitations in terms of the generalisation of the findings to the total population. Moreover, the present study relied only on self measures as the basis of data gathering without the use of other sources. According to Schaufeli, Enzmann, and Girault (1993), the exclusive use of self report measures in validation studies increases the likelihood that at least part of the shared variances between measures can be attributed to method variance whilst Spector (1987) asserts that there is little evidence of common method variance. Lastly, the reliability of engagement as found in the present study was lower than in the past few studies conducted in the South African context (Coetzee & Rothmann, 2004; Jackson & Rothmann, 2005; Olivier & Rothmann, 2007; Pienaar & Sieberhagen, 2005; Rothmann, 2003). The insufficient alpha coefficient of work engagement can be attributed to item misinterpretation by respondents, language barrier or the manner in which items have been constructed. This impacted on the engagement coefficient.

RECOMMENDATIONS

This study explored the relationships between self-efficacy, job demands, job resources, psychological conditions and work engagement. It reinforces critical lessons for organisations and individuals charged with the responsibility of leading others to ensure availability of resources to counterbalance job demands. This can inherently enhance work-life balance in the lives of employees. Organisations must endeavour to create and promote a work environment that is characterised by support from colleagues and supervisors and provide opportunities for growth and advancement. The diversification of job content need to be in line with personal and physical resources, to avoid individuals experiencing work overload. Organisations are advised

to endeavour to create environments that will encourage individuals to apply themselves fully, using their competencies and skills without limitations.

In conclusion, longitudinal research studies are necessary to explore effects of self-efficacy in different work contexts and in larger samples as part of the interventions crafted specifically for organisational availability.

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CHAPTER 4

ARTICLE 3

PSYCHOLOGICAL CONDITIONS, WORK ENGAGEMENT, HEALTH AND ORGANISATIONAL COMMITMENT IN A SOUTH AFRICAN PARASTATAL

ABSTRACT

The objective of this study was to determine the effects of psychological conditions on work engagement, organisational commitment and health. A cross-sectional survey design was used. An available sample (N=288) of cross functional employees was taken within a South African parastatal. The Psychological Conditions Scale, Work Engagement Scale, Organisational Commitment Questionnaire, General Health Scale and a biographical questionnaire was administered. The results of the study indicated that psychological availability predicted physical and psychological ill health. Psychological meaningfulness inversely predicted psychological ill health. Work engagement was the strongest predictor of normative and affective commitment, while psychological meaningfulness strongly predicted normative commitment.

OPSOMMING

Die doel van hierdie studie was om te bepaal wat die uitwerking van psigologiese kondisies is op werksbegeestering, organisasieverbondenheid en gesondheid. 'n Steekproef (N=288) is geneem uit die beskikbare populasie in 'n Suid-Afrikaanse semi-staatsinstelling. Tesame met 'n biografiese vraelys is gebruik gemaak van die volgende vraelyste: die Algemene Gesondheidskaal, Psigologiese Kondisiesvraelys, Werksbetrokkenheidsvraelys en Organisatoriese Toewydings Vraelys. Die resultate dui daarop dat psigologiese beskikbaarheid swak fisieke en psigologiese gesondheid voorspel. 'n Gebrek aan psigologiese betekenisvolheid voorspel ook swak psigiese gesondheid. Daar is bevind dat werksbetrokkenheid die sterkste voorspeller is van normatiewe en affektiewe verbondenheid. Psigologiese betekenisvolheid was ook 'n sterk voorspeller van normatiewe verbondenheid.

Key words: Work engagement, organisational commitment, health, psychological conditions

Just like any other organisations in the world, most South African organisations are going through extensive transformation processes. Organisations are constantly endeavouring to democratise the workplace, deal with affirmative action, job creation, improvements on quality of products and services, local and global competition, technological advancements and dealing with issues that affect the workforce (Booth, 1995; Human, 1995; Wescott, 1995; Wood, 1995). Employees in current times are also making considerable demands in the workplace that inherently result in modifications to the traditional employment model and conditions (Jackson, 2001).

Howard (1995) asserts that work is one of the most permanent realities that are going to be with us for long and sharing work in different forms and levels will continue for centuries to come. Carrol (1997) indicates that 20% of any workforce may suffer from some form of psychological illness with approximately 90 million lost working days annually and 30-40% of all work-related illness related to emotional disorders and stress. Due to the fact that organisations have put their employees at the centre of their processes, practices and outputs in achieving their strategic objectives and goals, a lot of attention needs to be paid to the general well-being of employees.

Taking into account the fundamental roles played by employees in different organisations and in various occupational groups, there is also a lot of emphasis on employee involvement and participation. This is linked to the involvement or lack thereof of employees in their respective jobs and the extent to which they immerse themselves into those roles for the benefit of their respective organisations (May, Gilson & Harter, 2004). May et al., (2004) emphasise the importance of work engagement as a phenomenon that needs to be taken seriously by organisations, as it is linked to business outcomes in terms of individual, team and organisational performances. But, equally important, is the issue of psychological conditions of meaningfulness, availability and safety at play that enhances and promotes the capacity individuals to be engaged in their work and immerse themselves totally and relentlessly. (May et al., 2004).

Studying constructs related to the workplace that affect employees directly helps organisations to understand and design interventions that will foster an environment conducive to productivity.

Different factors exist like work engagement, psychological conditions, health and organisational commitment which are direct consequences of how the work environment is appraised. The most crucial aspect is to understand and distinguish the variations in terms of employee participation and involvement in the workplace dynamics and decision-making processes (Kahn, 1990)

This study aims to explore the relationships between psychological conditions, work engagement, health and organisational commitment in a parastatal.

Psychological conditions and work engagement

Kahn (1990) theorised that individuals vary in the extent to which they immerse themselves in their roles, but they would use all aspects of themselves to do so – cognitive, emotional and physical. Engagement entails physical energies employed by individuals to accomplish their roles. These energies assist in bunging the self into a role.

Frankl (1992) stated that individuals have a primary motive to seek meaning in their work. Meaningfulness is defined as the value of work goal or purpose, judged in relation to an individual's own ideals and standards (Hackman & Oldman, 1980; May, 2003; Renn, & Vandenberg, 1995). Psychological meaningfulness refers to "a feeling that one is receiving a return on investment of one's self in currency of physical, cognitive or emotional energy" (Kahn, 1990, p. 703-704). Aktouf (1992) alludes to the fact that the lack of meaning in one's work can lead to alienation or disengagement. This also means that the extent to which the work is experienced as meaningful by employees should facilitate both their personal growth and motivation. According to Aktouf (1992), engagement is central to the problem of employees' lack of commitment and motivation. This can be attributed to a number of issues such as meaningless work which is often associated with apathy and detachment from one's work (Thomas & Velthouse, 1990). Engagement has been linked to variables such as employee turnover, customer satisfaction, loyalty, safety and, to a lesser extent, productivity and profitability (May et al. (2004). Phale and Rothmann (in press) also confirmed that psychological meaningfulness is positively related to work engagement. This means that individuals are likely to experience psychological meaningfulness when they feel useful and valuable and this is

influenced by work-role fit and rewarding interpersonal interactions with co-workers (Olivier & Rothmann, 2007). Most authors argue that a perceived "fit" between an individual's self concept and his/her role will lead to a sense of meaning due to the ability of the individual to express his/her values and beliefs (Brief & Nord, 1990; Shamir, 1991). According to Shamir (1991), people seek out work roles that allow them to behave in a way that expresses their genuine self-concepts. In a study conducted by May (2003), a confirmation of this perspective was received where work-role fit had a significant influence on employees' experienced psychological meaningfulness. In summary, work roles that are aligned with individual's self concepts should be associated with a more meaningful work experience.

It is also believed that individuals who have rewarding interpersonal interactions with their co-workers also experience greater meaning in their work. Relationships with significant others in the work context promotes the extent to which individuals perceive that they are being treated with dignity, respect and value for their contributions. This promotes a sense of belonging, a stronger sense of social identity and meaning. Loss of a social identity is negatively associated with psychological meaningfulness (Florian & Snowden, 1989) and psychological meaningfulness displayed the strongest correlation with individuals' perceived social identity. May et al. (2004) state that job enrichment and person-environment fit are positively linked to psychological meaningfulness.

Psychological availability is defined as an individual's belief that he/she has the physical, emotional or cognitive resources to engage the self at work (Kahn, 1990). Psychological availability assesses the readiness or confidence of a person to engage in his/her work role given that individuals are engaged in many other life activities (May et al., 2004). Psychological availability is influenced by resources (cognitive, emotional and physical). Phale and Rothmann (in press) also confirmed that Psychological availability is positively related to work engagement.

Individuals bring their physical, emotional and cognitive resources to bear on role related tasks when they engage themselves at work. Most jobs require some level of physical exertion and some demand intense physical challenges that result in injuries (May & Schowoerer, 1994).

Even the sitting posture at work can put an insurmountable amount of stress on the back (Hollenbeck, Ilgen, & Crampton, 1992). Individuals vary in their abilities to meet these physical demands based on their strength, stamina and flexibility and in the same light cognitive demands and resources also vary by job and person respectively. When physical resources are depleted, this will necessarily result in physical disengagement from one's work role. It is also expected that the availability of resources will lead to greater engagement. May et al. (2004) states that individuals should be more willing to engage themselves in their roles at work if they believe that they have the necessary physical, emotional and cognitive resources to do that.

Psychological safety is defined as "feeling able to show and employ oneself without fear of negative consequences to self image, status or career" (Kahn, 1990, p. 708). Psychological safety is believed to lead to engagement, because it reflects one's belief that a person can employ him/herself without fear of negative consequences. When the relationship between supervisor and co-workers is characterized by support, trust and flexibility in behavioural norms, this may lead to feelings of safety (May et al., 2004). Kahn (1990) further mentions that individuals with rewarding interpersonal relationships as well as the presence of co-worker interactions that foster a sense of belonging and a stronger sense of social identity should experience increased psychological safety. According to May et al. (2004), the following four factors have a direct influence on psychological safety, namely interpersonal relationships, group and intergroup dynamics, management style and process and organisational norms.

Psychological safety ensues when the employee perceives interpersonal relationships as characterised by mutual support, openness, trust, genuineness and flexibility. This inherently creates an enabling environment conducive to learning and growth. Group and intergroup dynamics are expressed unconsciously in different roles and are shaped by social systems and the defined group culture or practice, which in turn would influence psychological safety. According to May et al. (2004), management who are supportive, consistent, and clarifying enhanced their employees' state of psychological safety. This is also dependent on the extent to which employees perceive their managers or supervisors to be competent, focused, driven and visionaries in their own right. According to May et al. (2004), the extent to which employees behave in accordance with the established and appropriate general behaviours or shared

expectations of the system, this tends to improve the employee's psychological safety, contrary to those who subscribed to norms conflicted with those of the system. Phale and Rothmann (in press) could not establish the relationships with psychological safety because of poor factor loading.

Work engagement

The emergence of "positive psychology" (Seligman & Csikszentmihalyi, 2000) expanded the negative concept of burnout in recent years to encompass its most positive component, namely work engagement.

Kahn (1990) conceptualised engagement at work and described it as the "harnessing of organizational members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively and emotionally during role performances" (p. 694). Kahn (1990) highlights the interrelationship between the "self" and "role" wherein the self is the manifestation of personal energies into role behaviours (self employment) and the self within the role (self expression). Hochschild (1983) goes further to explain disengagement as disintegration of the self from the work role and is characterised by withdrawal and application of defense mechanisms during role performances.

The concept of work engagement has evolved over time. In the following section, three conceptualisations are discussed.

Burnout is often defined as the opposite of engagement in that it is explained as "erosion of engagement with the job". (Maslach & Leiter, 1997; p. 23). The purpose of every job is to satisfy personal ambitions and fulfil purposeful living but when the job ceases to satisfy all these critical elements of human existence, this evokes negativity and emptiness (Rothmann, 2003). Engagement is characterised by three dimensions, namely energy, involvement and efficacy which are regarded as opposites of three burnout dimensions namely exhaustion, cynicism and lack of professional efficacy respectively (Maslach & Leiter, 1997).

Kahn (1990, p. 694) defines engagement as "the harnessing of organisation members' selves to their work roles [by which they] employ and express themselves physically, cognitively and emotionally during role performances". In other words, employees who are engaged in their work utilise themselves fully physically, cognitively and emotionally within their jobs. Kahn (1990 p. 700) further explains that personal engagement is "the simultaneous employment and expression of a person's "preferred self" in task behaviours, that promote connections to work and to others, personal presence (physical, cognitive and emotional), and active, full role performances". Personal disengagement is characterised by withdrawal of a person's preferred self, made evident by emotional absence, passivity and uninvolved and uncoordinated performance outputs (Kahn, 1990).

According to Schaufeli, Salanova and Bakker (in press), engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular job, event, individual or behaviour. Engagement is characterized by vigour, dedication and absorption (Schutte, Toppinen, Kalimo, & Schaufeli, 2000; Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). Vigour is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one's work and persistence also in the face of difficulties. Dedication is characterised by a sense of significance, enthusiasm, inspiration, pride and challenge. The third dimension of engagement is called absorption, which is characterised by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties in detaching oneself from work. Studies conducted on work engagement suggest that vigour and dedication constitute the core dimensions of engagement (Hakanen, Bakker & Schaufeli, 2006) and absorption most likely plays a less central role in the engagement concept. While reconciling the work of different researchers, it is clear that engagement has three dimensions, namely physical, cognitive and emotional, which are aligned with vigour, dedication and absorption. Rothmann (2003) ascertained that engagement is characterised by vigour (high activation) and dedication (high identification).

Organisational commitment

Meyer, Allen, and Smith (1993) defined organisational commitment as the extent to which employees feel devoted to their organisation. Organisational commitment has three main facets, namely affective, continuance and normative (Meyer & Allen, 1997).

Normative commitment refers to an employee's feeling of obligation to remain with the organisation, based on the employee having internalised the values and goals of the organisation (Meyer & Allen, 1991). The potential antecedents for normative commitment include co-worker commitment (Meyer & Allen, 1991), organisational dependability and participatory management. Dodd-McCue and Nelson (1996) assert that co-workers' commitment is expected to provide normative signals that influence the development of normative commitment. Organisational dependability and perceived participatory management are expected to instil a sense of moral obligation to reciprocate to the organisation.

Affective commitment refers to the employee's emotional attachment and identification with and involvement in the organisation (based on enhanced feelings of devotion, belongingness and stability towards the organisation) (Meyer & Allen, 1991). The antecedents for affective commitment include perceived job characteristics, organisational dependability and perceived participatory management (Meyer & Allen, 1991). Job characteristics include task autonomy, task significance, task identity, skill variety and supervisory feedback. Organisational dependability is defined as the extent to which employees feel the organisation could be counted on to look after their interests. Perceived participatory management is explained as the extent to which employees feel they can influence decisions on the work environment and other issues of concern to them (Meyer & Allen, 1991).

Continuance (economic/calculative) commitment refers to what the employees will have to give up if they were to leave the organisation, or alternatively, the material benefits to be gained from remaining in the organisation (Allen & Meyer, 1990). This is based on the costs the employee associates with leaving the organisation, committed due to the high cost of leaving (Allen & Meyer, 1990). Potential antecedents of continuance commitment include age, tenure and career

satisfaction. Employees who relate to the organisation based on a continuance commitment remain with the organisation because of the material benefits associated with being in it. Staying in the organisation becomes a morale issue rather than a voluntary process (Jaros, Jernier, Kochler, & Sincich, 1993).

According to Meyer et al. (1993), the abovementioned three types of commitment exhibit a commonality that views commitment as a psychological state that first characterises the employee's relationship with the organisation and secondly has implications for the decision to continue or terminate membership in the organisation. Mowday (1998) and Raju and Srivasta (1994) suggest that committed employees are more valuable to the organisation than those without commitment. Steers and Porter (1979) focused on the identification of organisational factors that can be managed in order to foster employee commitment. Mowday, Steers, and Porter (1979) have identified four variables impacting on organisational commitment, namely personal characteristics (for example, gender), job characteristics (such as task autonomy), work experiences (such as task significance) structural characteristics (which may include organisational commitment), size, organisational culture, leadership style, human resource management practices that influence salary, career prospects and possibilities for further education (Nijhof, De Jong, & Beukhof, 1998).

Organisational commitment is viewed as the joint responsibility of direct supervising managers and the human resources division. This is further emphasised by the way leaders discharge or implement the organisation's human resources policies, which can influence the employee's behaviour. Levels of organisational commitment are positively influenced by supervisors who treat employees fairly, as they implement human resources practices and procedures. This would in turn increase the employee's trust in the organisation and supervisors (Whitener, 2001). Commitment manifests itself in different ways. For example, employees who are committed to the organisation will work through difficult circumstances, employing different strategies, to minimise the impact thereof. However, a non-committed employee will view this as an opportunity to exit the organisation. High organisational commitment in employees leads to increased personal effort (Mayer & Schoorman, 1992). Employees with strong affective commitment tend to work harder and are therefore more productive and have a strong emotional

desire to sustain economical/calculative ties with the organisation (continuance commitment). They will stay because of what they perceive as their investments in the organisation, such as financial benefits, pension funds, social status that goes with the occupation, as well as work and organisational status and acquired skills (Chow, 1990).

Organisational commitment is viewed as a key factor in the relationship between individuals and organisations. Employees exhibit commitment when they willingly continue their association with that organisation and devote considerable effort towards achieving organisational goals (Mowday, 1998; Raju & Srivasta, 1994). High levels of organisational commitment lead individuals to exert high personal effort and this inherently leads to individual and organisational effectiveness. Commitment to the organisation has a motivating effect on employees (Mowday, 1998; Raju & Srivasta, 1994). Chow (1990) found that committed employees are more productive and are willing to assume responsibility.

General health

Many factors affect the general health of employees. According to Cotton and Hart (2003), stress is one of the factors in the workplace that can lead to poor psychological as well as physical health. Muldoon, Barger, Flory, and Manuck (1998) state that quality of life includes the assessment of the functional status of the individual and the individual's appraisal of health, as it affects their sense of well-being. Health can be defined as complete physical, mental and social well-being and not merely the absence of disease.

Psychological health refers to clinical symptoms indicative of stress-induced mental ill-health such as chronic fatigue and irritability. Psychological ill-health could manifest as unexplained physical symptoms, chronic fatigue, increased work accidents and absenteeism (Hothopf & Wesseley, 1997), while physical health refers to physical symptoms often associated with stress such as insomnia/lack of sleep and headaches.

It is crucial to study the relationships between psychological conditions, work engagement, health and organisational commitment, because these constructs are at the centre of any

organisations fitness to function optimally. It also emphasizes the significant role played by organisations in ensuring effective management of employees. Organisations should endeavour to improve their systems and processes, not only to ensure profitability, but also so that employees are equally contributing to and benefiting from sound management applications and are able to apply themselves at work. This study aims to expand on the current theoretical underpinnings and determine a baseline for the parastatal in question, to ensure that systems and processes are improved and adapted accordingly. This will enable continued profitability and a focus on an employee-centric culture in the organisation. Coetzee and Rothmann (2005) found that psychological health was negatively related to the organisation's commitment to its employees and the employee's commitment to the organisation. The organisation's commitment to its employees relates to the extent to which the organisation shows its commitment to its employees through its different structures, policies, practices and general culture. Employees' commitment to the organisation is evident in the way employees apply and involve themselves in achieving organisational goals and objectives (Allen & Meyer, 1990). It is believed that employees who are engaged at work are expected to be loyal and psychologically committed to the organisation. According to Leiter and Maslach (1988), engagement is a useful indicator of commitment, which means that, in all likelihood, employees who are engaged are mostly committed to their organisations.

There is ample evidence in the literature to prove that psychological ill-health leads to physical ill-health (Siu, 2002; Winefield, Gillespie, Stough, Dua, & Hapuararchchi, 2002). Siu (2002) found that organisational commitment was not only related to most physical and psychological outcomes among employees, but has a moderating effect on the stressor-health relationship. Jackson and Rothmann (2004) also found that commitment of the individual to the organisation moderated the effects of occupational stress on the physical and psychological health of South African teachers.

The following hypotheses are formulated with reference to psychological conditions, work engagement, health and organisational commitment.

Hypotheses

H1. Psychological conditions are related to organisational commitment.

H2. Work engagement is related to psychological conditions.

H3. General health (psychological ill health and physical ill health) is related to organisational commitment.

METHOD

Research design

A survey design was used to achieve the research objectives. Specifically, the cross-sectional design was implemented, where a sample is drawn from the target population at a particular time. Cross-sectional designs are also used to assess interrelationships among variables within the target population group (Shaughnessy & Zechmeister, 1997). Questionnaires were used to gather data in a non-random field survey.

Participants

The participants are employees of a parastatal based in different regions (provinces) across South Africa. Paper and electronic questionnaires were sent at random to 300 employees, of which 288 participated in the study. Employees participated voluntarily in the study and confidentiality was maintained. Employees from diverse divisions, occupational groups and education levels, from general staff to executive management, were included. The participants were mostly female (51,4%) and the majority of respondents fell in the 31-40 years age group (51%). Educational level revealed that the majority (47,9%) of participants have grade 10, 11, 12 qualifications. Also, the majority of the participants worked for the company for 11-20 years (40%) and 63,2% of participants have been in a position for 0-5 years.

Table 1

Characteristics of Participants (N=288)

Item	Category	Frequency	Percentage
Race	White	88	30,6
	Black	153	53,1
	Coloured	25	8,7
	Indian	21	7,3
	Other	1	0,3
Gender	Male	140	48,6
	Female	148	51,4
Language	Afrikaans	89	30,9
	English	47	16,3
	Sepedi	23	8,0
	Sesotho	20	7,0
	Setswana	46	16,0
	isiSwati	4	1,4
	Tshivenda	8	2,9
	isiNdebele	1	0,4
	isiXhosa	19	6,6
	isiZulu	28	9,7
	Other	3	1,0
Age distribution	20-30	25	9,0
	31-40	146	51,0
	41-50	87	30,0
	50+	30	10,0
Years in Service	0-5 years	43	15,0
	6-10 years	62	22,0
	11-20 years	114	40,0
	21-30	60	21,0
	30+	9	3,0
Years in Position	0-5 years	182	63,2
	6-10 years	61	21,2
	11-20 years	39	13,5
	20+	6	2,1
Employment category	Executive Management	2	0,69
	Middle management	60	20,8
	Supervisory	20	6,9
	Administrative clerical personnel	83	28,8
	Specialist/Consultant	84	29,2
	Experiential learners	3	1,0
	Branch/Area Managers	17	5,9
	General Staff	19	6,6
Level of education (qualification)	Lower than Grade 10	13	4,5
	Grade 10, 11, 12	138	47,9
	Technical college diploma	56	19,4
	University degree	43	15
	Postgraduate degree	38	13,2
Relationship satisfaction	Very unsatisfied	79	27,4
	2	134	46,6
	3	62	21,5
	4	6	2,1
	Very satisfied	7	2,4
Satisfaction with job	Very unsatisfied	27	9,3
	1		
	2	10	3,5
	3	33	11,5
	4	52	18,1
	Very satisfied	166	57,6

Measuring instruments

Five measuring instruments were used for the purposes of this study, namely the Psychological Conditions Questionnaire (PCQ), the Work Engagement Scale (WES), the General Health Questionnaire (GHQ), the Organisational Commitment Questionnaire (OCQ) and a biographical questionnaire.

The *Psychological Conditions Questionnaire* (PCQ) (May et al., 2004) has been used in the study by Olivier and Rothmann (2007) and all subscales were included, i.e. Psychological meaningfulness was measured by six items (e.g. "the work I do on this job is very important to me"). Psychological safety was measured by 3 items such as item B88 ("I am not afraid to be myself at work"). Psychological availability was measured by 5 items such as item B92 ("I am confident in my ability to think clearly at work"). A principal axis factor analysis with a direct oblimin rotation was subsequently carried out and resulted in the following factors being included: Psychological Meaningfulness (6 items) and Psychological Availability (5 items). The alpha coefficients for the psychological conditions, namely Psychological Meaningfulness, Psychological Safety and Psychological Availability varied between 0,71 and 0,90 in the study of May et al. (2004).

The *Work Engagement Scale* (WES) (May et al., 2004), was used to gather information about how employees react to various aspects of their work and work situation. In all items used for the scale, a 5-point agreement-disagreement Likert format from 1 (*never*) to 5 (*always*) was used. The items reflected each of the three components of Kahn's (1990) conceptualisation of psychological engagement, namely cognitive, emotional and physical engagement. Work engagement was measured by 18 items (α = 0,62). Olivier and Rothmann (2007) found a one factor engagement model consisting of cognitive, emotional and physical resources (α = 0,72), which was consistent to findings by May et al. (2004), that used fewer items that demonstrated good reliability and represented cognitive, emotional and physical engagement items (α = 0,77).

The *Organisational Commitment Questionnaire* (OCQ) (Meyer et al.,1993) is used to measure the organisational commitment of managers and employees. This questionnaire consists of 18

items answered on a Likert 5-point scale varying between 1 (*never*) to 5 (*always*). An example of a question relating to Affective Commitment would be C1 ("I would be very happy to spend the rest of my career in this organisation"), while an example of Continuance Commitment would be C2 ("It would be very hard for me to leave the organisation right now, even if I wanted to"). Lastly, an example of Normative Commitment would be C12 ("My organisation deserves my loyalty"). MacDonald and Makin (2000) reported an alpha coefficient of 0,84, Heymans (2002) reported a reliability coefficient of total score α = 0,80, affective scale α = 0,69, continuance scale α = 0,53 and normative scale = 0,74. The alpha coefficients in this study in support of the South African context are as follows: for Normative Commitment, α = 0,84, for Continuance Commitment, α = 0,74 and for Affective Commitment, α = 0,71.

General Health Questionnaire (GHQ)

The General Health Questionnaire of Goldberg and Hillier (1979) was used to measure physical and psychological ill health and for the purposes of this study 13 items were used. Responses were given on a 5-point Likert scale from 1 (*never*) to 5 (*always*). An example of items representing physical ill health is A4 ("been getting pains in various parts of the body") and an example of items for psychological ill health is A11 ("been getting scared or panicky for no good reason"). The alpha coefficients found from this study are: Psychological ill health (α = 0,80) and Physical ill health (α = 0,85).

Statistical analyses

The statistical analyses were carried out with the SPSS program (SPSS, 2008). Cronbach alpha coefficients (α) were used to assess the internal consistency of the measuring instruments (Clark & Watson, 1995). Descriptive statistics (e.g. means and deviations) were used to analyze the data. An exploratory factor analysis was carried out, to determine the construct validity of the instruments as follows. First, a simple principal components analysis was conducted on the items of the PSI (state in full). The eigenvalues and scree plot were studied to determine the number of factors. Then, principal axis factoring with a direct oblimin rotation was conducted if factors

were related ($r > 0,30$). Lastly, a principal factor analysis with a varimax rotation was used if the obtained factors were not related.

Pearson product-moment correlation coefficients were used to assess the relationships between the variables. Multiple regression analyses were used to investigate whether job/personal characteristics such as work-role fit predict the psychological conditions such as psychological meaningfulness, and whether these psychological conditions predict work engagement. In terms of significance, it was decided to set the value at a 95% confidence interval level ($p < 0,05$). Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

RESULTS

Factor analyses

Exploratory factor analyses were carried out on items of the Health Questionnaire and the Organisational Commitment Questionnaire respectively, to assess the construct validity of the questionnaires.

A principal component analysis was conducted on the 13 items of the Health Questionnaire. The results showed that three components had eigenvalues larger than one, but an analysis of the scree plot show that only two factors could be extracted. These two components explained 50.90 % of the total variance. Subsequently, a principal axis factor analysis with a direct oblimin rotation was carried out on the 13 items. A correlation of 0,58 was obtained between the twee extracted factors. Table 2 shows the results of the principal axis factor analysis.

Table 2

Results of a Principal Factor Analysis with a Direct Oblimin Rotation on the Health Questionnaire

	Factor 1	Factor 2	*h2*
A4 Been getting pains in various parts of your body	**0,85**	-0,16	0,59
A3: Felt that you are ill	**0,71**	0,01	0,52
A13: Been feeling in need of a good medication	**0,69**	0,10	0,57
A1: Been feeling perfectly well and in good health	**-0,61**	0,01	0,36
A2 Been feeling exhausted and fatigued	**0,55**	0,16	0,43
A6: Been getting a feeling of tightness or pressure in your head, neck and shoulders	**0,55**	0,14	0,41
A5: Been having hot or cold flushes	**0,52**	0,01	0,27
A7: Been thinking about yourself as a worthless person	-0,09	**0,78**	0,54
A8: Felt life is entirely hopeless	-0,10	**0,75**	0,49
A11: Been getting scared or panicky for no good reason	0,19	**0,53**	0,43
A10: Been getting edgy and bad tempered	0,21	**0,49**	0,41
A9: Had difficulty in staying asleep	0,31	**0,38**	0,38
A12: Felt overwhelmed by most things in your life	0,15	0,28	0,15
Eigenvalue	5,21	1.41	
Percentage of variance	40,09	10,81	

Factor 1 was labelled **Physical Ill Health,** measuring items such as feeling pain on various parts of the body, need for good medication, feelings of tiredness, exhaustion, tightness in the neck or shoulders and getting hot or cold flushes. Factor 2 was labelled **Psychological Ill Health** and measured aspects such as feelings of worthlessness, hopelessness, being scared or panicky without good reason, being edgy and ill-tempered and difficulty sleeping. Item A1 loaded negatively but sufficiently to be included in the analysis. A12 has not loaded on any of the factors and was excluded from the analysis. The cut-off value of $p < 0,30$ will agree sufficient loading and when the item loads negatively, it means there is an inverse relationship with the dependent variable under study.

A principal component analysis was conducted on the 18 items of the Organisational Commitment Questionnaire. The results showed that five components had eigenvalues larger than one, but an analysis of the scree plot show that only three factors could be extracted. These

three components explained 61,94% of the total variance of organisational commitment. Subsequently, a principal axis factor analysis with a direct oblimin rotation was carried out on the 13 items. A correlation of 0,58 was obtained between the three extracted factors. Table 2 shows the results of the principal axis factor analysis.

Table 3

Results of a Principal Factor Analysis with a Direct Oblimin Rotation on the Organisational Commitment Questionnaire

Item	Factor 1	Factor 2	Factor 3	h^2
C13 This organisation has a great deal of personal meaning for me	**0,85**	-0,04	-0,07	0,75
C12 My organisation deserves my loyalty	**0,83**	-0,09	-0,02	0,65
C18 I owe a great deal to my organisation	**0,60**	0,15	-0,13	0,54
C15 I would not leave my organisation right now because I have a sense of obligation to the people in it.	**0,36**	0,34	-0,18	0,43
C1 I would be very happy to spend the rest of my career in this organisation	**0,35**	0,32	-0,33	0,52
C5 Too much of my life would be disrupted if I decided I wanted to leave my organisation right away	-0,01	**0,66**	-0,08	0,44
C2 It would be very hard for me to leave my organisation right now, even if I wanted to.	0,04	**0,65**	-0,20	0,48
C14 I feel that I have too few options to consider leaving this organisation	0,06	**0,58**	0,20	0,41
C11 One of the few negative consequences of leaving this organisation would be the scarcity of available alternatives	-0,16	**0,56**	0,33	0,43
C6 Even if it were to my advantage, I do not feel it would be right to leave the organisation now.	0,17	**0,46**	-0,25	0,39
C9 I would feel guilty if I leave my organisation now	0,18	**0,42**	-0,32	0,41
C8 Right now, staying with my organisation is a matter of necessity as much as desire	0,05	**0,41**	0,11	0,20
C16 I do not feel a strong sense of belonging to my organisation	-0,09	0,07	**0,63**	0,44
C3 I do not feel any obligation to remain with my current employer.	0,04	-0,21	**0,54**	0,30
C7 I do not feel like "part of the family" in my organisation	-0,14	0,10	**0,53**	0,36
C10 I do not feel "emotionally attached" to this organisation	-0,13	0,02	**0,48**	0,31
C4 I do not feel as if this organisation's problems are my own	-0,08	0,11	**0,42**	0,22
C17 If I had not already put so much of myself into this organisation, I might consider working elsewhere.	0,22	0,20	0,22	0,13
Eigenvalue	5,25	2,75	1,10	
Percentage of variance	29,15	15,29	6,08	

Factor 1 is labelled *Normative Commitment* and measured the extent to which the individual feels a sense of loyalty and obligation to the organisation, with reference to spending their time,

personal resources and career in the organisation for the rest of their lives. Factor 2 is labelled *Continuance Commitment* and measured the extent to which an individual is committed to the organisation, because a movement away from the organisation would cause disruptions in his/ her life. Factor 3 is labelled *Affective Commitment* and measured the extent to which individuals feel that they do not have a strong sense of commitment and obligation, do not feel like a part of the family and do not feel emotionally attached to the organisation and its problems. Item 17 did not load sufficiently on any of the factors and was excluded from the analysis. Item 15 loaded sufficiently on two factors, but although it was a complex item (i.e. it loaded on two factors), it was decided that it would be retained for further analysis.

Descriptive statistics, alpha coefficients and correlations

The descriptive statistics, alpha coefficients and Pearson correlations of the scales are reported in Table 4.

Table 4

Descriptive Statistics, Alpha Coefficients and Pearson Correlations

Scale	Mean	*SD*	A	1	2	3	4	5	6	7
1. Psychological Meaningfulness	21,29	4,35	0,92	-	-	-	-	-	-	-
2. Psychological Availability	21,96	3,08	0,84	0,37*+	-	-	-	-	-	-
3. Work Engagement	29,59	4,28	0,62	0,30*+	0,26*	-	-	-	-	-
4. Physical Ill Health	15,61	5,29	0,85	-0,20*	-0,26*	0,08	-	-	-	-
5. Psychological Ill Health	9,19	3,78	0,80	-0,27*	-0,32*+	-0,01	0,62*++	-	-	-
6. Normative Commitment	17,83	4,60	0,84	0,25*	0,07	0,23*	-0,04	-0,09	-	-
7. Continuance Commitment	22,59	5,55	0,74	-0,09	-0,09	0,04	0,10	0,10	0,50*++	-
8. Affective Commitment	14,12	4,30	0,71	-0,20*	-0,11	-0,24*	0,13*	0,20*	-0,49*++	-0,08

* $p < 0,05$ – statistically significant

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

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

Table 4 shows that Psychological Meaningfulness is statistically and practically significantly related to Psychological Availability (medium effect) (r = 0,37). Psychological Meaningfulness is statistically and practically significantly related to Work Engagement (medium effect) (r = 0,30). Psychological Ill Health is statistically and practically significantly related to Physical Ill Health (large effect) (r = 0,62). Continuance Commitment is statistically and practically significantly related to Normative Commitment (medium effect) (r = 0,50). Affective Commitment is statistically and practically negatively related to Continuance Commitment (large effect) (r = -0, 49).

Regression analyses

The results of multiple regression analyses with Physical and Psychological Ill Health (as measured by the Health Questionnaire) as dependent variables and Psychological Conditions (as measured by the PCQ) as independent variables are reported in Table 5.

Table 5

Multiple Regression Analyses with Physical and Psychological Ill Health as Dependent Variables and Psychological Conditions as Independent Variables

Model	Unstandardised Coefficients		Standardised Coefficients	*T*	*P*	*F*	R^2
	B	SE	Beta				
Physical Ill Health							
						12,00*	0,09
(Constant)	27,38	2,44		11,.23	0,00		
Psychological Meaningfulness	-0,14	0,08	-0,12	-1,83	0,07		
Psychological Availability	-0,40	0,11	-0,23	-3,53	0,00*		
Psychological Ill Health							
						20,21*	0,13
(Constant)	19,45	1,65		11,79	0,00		
Psychological Meaningfulness	-0,16	0,05	-0,18	-2,93	0,00		
Psychological Availability	-0,31	0,08	-0,26	-4,09	0,00*		

* $p < 0,05$ – statistically significant

Table 5 shows that Psychological Meaningfulness and Psychological Availability (as measured by PCQ) explain 9% of the variance in Physical Ill health (as measured by the GHS). One variable, namely Psychological Availability made a statistically significant contribution to the regression model (t = -3,53, $p < 0,01$). The standardised regression coefficient of psychological availability is β = -0,23. Low psychological availability was the strongest contributor to physical ill health with the standard regression coefficient of β = -0,26. This means that low psychological availability leads to physical ill health.

Table 5 also shows that Psychological Meaningfulness and Psychological Availability (as measured by the PCQ) explain 13% of the variance in Psychological Ill Health. One variable, namely Psychological Availability made a statistically significant contribution to the regression model (t=-4,09; p<0,01). The standardised regression coefficient for Psychological Availability is β = -0,26. Low psychological availability is the strongest predictor of psychological ill health.

The results of multiple regression analyses with Normative Commitment, Continuance Commitment and Affective Commitment (as measured by the OCQ) as dependent variables and Psychological Conditions (as measured by the PCQ) as independent variables are reported in Table 6.

Table 6

Multiple Regression Analyses with Normative, Continuance, and Affective Commitment as Dependent Variables and Psychological Conditions as Independent Variables

Model	Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	R^2
	B	SE	Beta				
Normative Commitment							
						9,01*	0,07
(Constant)	13,00	2,09		6,17	0,00		
Psychological Meaningfulness	0,29	0,07	0,26	4,07	0,00*		
Psychological Availability	-0,04	0,10	-0,03	-0,42	0,68		
Continuance Commitment							
						1,42	0,01
(Constant)	26,80	2,63		10,18	0,00		
Psychological Meaningfulness	-0,08	0,09	-0,07	-0,96	0,34		
Psychological Availability	-0,11	0,12	-0,06	-0,90	0,37		
Affective Commitment							
						5,39	0,04
(Constant)	19,20	2,01		9,.56	0,00		
Psychological Meaningfulness	-0,18	0,07	-0,18	-2.,72	0,01*		
Psychological Availability	-0,06	0,10	-0,04	-0,60	0,55		

* $p < 0,05$ – statistically significant

Table 6 shows that Psychological Meaningfulness and Psychological Availability (as measured by PCQ) predict 7% of the variance of Normative Commitment (as measured by OCQ). Only Psychological meaningfulness contributed significantly in the regression model to explain the variance in Normative Commitment (t = 4,07; p<0,01) The standardised regression coefficient for Psychological Meaningfulness is β = 0,26. Psychological meaningfulness is the strongest predictor of affective commitment (β = -0,18).

Table 6 also shows that Psychological Meaningfulness and Psychological Availability (as measured by PCQ) predict 1% of the variance of Continuance Commitment (as measured by OCQ). Table 6 further shows that Psychological Meaningfulness and Psychological Availability (as measured by the PCQ) predicts 4% of the variance in Affective Commitment.

The results of multiple regression analyses with Normative, Continuance and Affective Commitment (as measured by the OCQ) as dependent variables and Work Engagement (as measured by the WES) as independent variables are reported in Table 7.

Table 7

Multiple Regression Analyses with Normative, Continuance and Affective Commitment as Dependent Variables and Work Engagement as Independent Variable

Model	Unstandardised Coefficients		Standardised Coefficients	*T*	*P*	*F*	R^2
	B	SE	Beta				
Normative Commitment							
						14,55*	0,05
(Constant)	10,49	1,93		5,45	0,00		
Work Engagement	0,25	0,06	0,23	3,81	0,00*		
Continuance Commitment							
						0,49	0,00
(Constant)	20,90	2,41		8,69	0,00		
Work Engagement	0,06	0,08	0,04	0,70	0,49		
Affective Commitment							
						15,47*	0,06
(Constant)	21,22	1,80		11,77	0,00		
Work Engagement	-0,24	0,06	-0,24	-3,93	0,00*		

* $p < 0,05$ – statistically significant

Table 7 shows that Work Engagement (as measured by the WES) predicts 5% of the variance in Normative Commitment (as measured by the OCQ). Work engagement made a statistically significant contribution to the regression model (t=3,81; p<0,01). The standardised regression coefficient for work engagement is β = 0,23. Table 7 also shows that Work Engagement (as

measured by WES) does not explain any variance in Continuance Commitment. Work Engagement (as measured by the WES) predicted 6% of the variance in Affective Commitment (as measured by the OCQ). Work engagement made a statistically significant contribution to the regression model (t = -3,93; p<0,01). The standardised regression coefficient for Work Engagement is β = -0,24. Work engagement was statistically negatively related to Normative commitment. This means low work engagement is the strongest predictor of normative commitment.

The results of multiple regression analyses with Normative Commitment (as measured by the OCQ) as dependent variable and Psychological Conditions (as measured by the PCQ) and Work Engagement (as measured by the WES) as independent variables are reported in Table 8.

Table 8

Multiple Regression Analyses with Normative Commitment as Dependent Variable and Psychological Conditions and Work Engagement as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	T	P	F	R^2	ΔR^2
		B	SE	Beta					
1							9,23*	0,07*	0,07*
	(Constant)	12,89	2,09		6,17	0,00			
	Psychological Meaningfulness	0,28	0,07	0,27	4,14	0,00*			
	Psychological Availability	-0,04	0,10	-0,03	-0,46	0,65			
2							8,65*	0,09	0,02*
	(Constant)	9,40	2,45		3,84	0,00			
	Psychological Meaningfulness	0,24	0,07	0,23	3,40	0,01*			
	Psychological Availability	-0,09	0,10	-0,06	-0,89	0,38			
	Work Engagement	0,18	0,07	0,17	2,66	0,01*			

* $p < 0,05$ – statistically significant

Table 8 shows that Psychological Meaningfulness and Psychological Availability (as measured by PCQ) explain 7% of variance in Normative Commitment. Psychological Meaningfulness,

contributed statistically significantly to the regression model (t = 4,14; p < 0,01) . The standardised regression coefficient is β = 0,27. Psychological meaningfulness predicts Normative Commitment. Table 8 further shows that Psychological Meaningfulness and Psychological Availability (as measured by PCQ) and Work engagement (as measured by WES) predicted 9% of variance in Normative Commitment. Two factors, namely Psychological Meaningfulness (t=3,40 p<0,01) and Work Engagement (t=2,66; p<0,01), made a statistically significant contribution to the regression model. The standardised regression coefficients are for Psychological Meaningfulness (β = 0.23) and Work Engagement (β = 0,17) respectively. Psychological meaningfulness and work engagement are the strongest predictors of normative commitment.

The results of multiple regression analyses with Affective Commitment (as measured by the OCQ) as dependent variable and Psychological Conditions (as measured by the PCQ) and Work Engagement (as measured by the WES) as independent variables are reported in Table 9.

Table 9

Multiple Regression Analyses with Affective Commitment as Dependent Variable and Psychological Conditions and Work Engagement as Independent Variables

Model		Unstandardised Coefficients		Standardised Coefficients	*T*	*P*	*F*	R^2	ΔR^2
		B	SE	Beta					
1							4,90*	0,04	0,07*
	(Constant)	19,03	2,02		9,45	0,00			
	Psychological Meaningfulness	-0,17	0,07	-0,18	-2,61	0,01			
	Psychological Availability	-0,05	0,10	-0,04	-0,55	0,58			
2							6,39*	0,07	0,02*
	(Constant)	22,77	2,34		9,73	0,00			
	Psychological Meaningfulness	-0,12	0,07	-0,12	-1,78	0,08			
	Psychological Availability	-0,01	0,09	-0,01	-0,09	0,93			
	Work Engagement	-0,20	0,07	-0,20	-3,01	0,00			

* p < 0,05 – statistically significant

Table 9 shows that Psychological Meaningfulness and Psychological Availability (as measured by the PCQ) explain 4% of the variance in Affective Commitment (as measured by the OCQ). Table 9 further shows that Psychological meaningfulness and Psychological Availability (as measured by the PCQ) and Work Engagement (as measured by WES) explain 7% of the variance in Affective Commitment (as measured by the OCQ). None of the dependent variables made a significant and statistical contribution to the regression model ($p < 0,01$)

DISCUSSION

The aim of this study was to explore the relationship between psychological conditions, work engagement, health and organisational commitment. The results indicated that psychological meaningfulness was statistically and practically significantly related to psychological availability. Psychological meaningfulness was statistically and practically significantly related to work engagement and this finding was found to be consistent with those of May et al. (2004) who also found that Psychological meaningfulness predicted work engagement. The results of the current study indicates that psychological availability was found to be the strongest predictor of physical and psychological ill-health and is consistent with findings by Kahn (1990). This shows that the more individuals perceive themselves as physically and/or psychologically healthy, the greater the possibility of being physically, emotionally and cognitively available to engage themselves in their respective role. This means that individuals experience meaningfulness when they feel useful and valuable, influenced by work role fit and rewarding interpersonal interactions with co-workers (Olivier & Rothmann, 2007). In the absence of this anticipated feeling of meaningfulness in the job, this is much likely to lead to psychological ill health as it is associated with perceived negative thoughts about the self. Findings in this study are in support of Hypothesis 1 and 2 which are accepted.

The health framework clearly articulates that if health issues affect organisational outcomes, it puts pressure on organisations to take health issues seriously. Findings in this study indicate that psychological ill health is statistically and practically significantly related to physical ill health. This further indicates that there is a correlation between psychological complaints and physical complaints in the general health stream.

The findings in this study indicated that continuance commitment is statistically and practically related to normative commitment, whilst affective commitment is statistically and practically significantly related to continuance commitment.

The findings in this research indicate that work engagement is the strongest predictor of normative commitment. Furthermore, work engagement is also the strongest predictor of affective commitment. This refers to the employee's emotional attachment and identification with and involvement in the organisation, based on enhanced feelings of devotion, belongingness and stability (positive feelings or emotions) towards the organisation. This means that the more individuals are engaged in their work, the more likely they are to be affectively committed.

The results also found that psychological meaningfulness is the strongest predictor of normative commitment. This means that if employees experience meaning in their jobs, it is likely that they would experience normative commitment. If employees experience and perceive their work as meaningful and the organisation for which they dedicate their efforts offers a return on investment physically, cognitively and emotionally, it will reinforce a strong sense of obligation (normative commitment) towards the organisation. This manifests through offering one's time, personal resources and career and sharing and taking ownership in organisational problems. There is a direct link between psychological meaningfulness and normative commitment, as they both relate to investment of the self (physically, emotionally and cognitively) in organisational and work roles respectively.

As stated earlier, in this study psychological meaningfulness was found to be statistically and practically significantly related to psychological availability, which is the strongest predictor of psychological ill health and physical ill health. Psychological meaningfulness is statistically and practically significantly related to work engagement, which is the strongest predictor of affective commitment. Findings in this study support Hypothesis 3.

The findings above indicate a relationship between the constructs under examination. An individual in any work setting brings the self in a work role and the extent to which they will immerse themselves fully in those roles, whether physically, emotionally or cognitively, will

determine their level of work engagement. Work engagement is also largely dependent on how an individual appraises and experiences certain conditions or attributes at work. Firstly, an individual would like to experience meaning in the work they perform, which must be reflective of how they see themselves now and in the future. Secondly, when individuals perceive the work content and environment to be representative and reflecting of what they stand for, they are likely to make themselves physically, emotionally and cognitively available in their work roles. Furthermore, when individuals experience Psychological safety at work, they are likely to dedicate themselves fully in their roles. The extent to which an individual will identify and be involved with an organisation through its successes and problems depends on personal motivations and perceived organisational drivers. An individual will experience varying degrees of commitment, namely affective, normative or continuance commitment when they experience variety of emotions emanating from changing personal needs and aspirations and organisational dynamics. Psychological conditions at work contribute to psychological health and physical health). Individual commitment to the organisation moderated the effects of occupational stress on the physical and psychological health of South African teachers (Jackson & Rothmann, 2004)

This study had various limitations. First, a cross sectional design was used which has its own short comings. Secondly, the study relied solely on self-report measures rather than using other alternative sources of data gathering. For future research, more emphasis should be placed on further investigations of the mediating effects of psychological conditions on work engagement, health and organisational commitment in other contexts, as well as with larger samples to increase confidence levels in terms of consistency across other similar groups.

RECOMMENDATIONS

This study explored the relationships between psychological conditions, work engagement, general health and organisational commitment. Organisations have a big challenge in that whatever they introduce as programmes or interventions; it must be addressing workplace issues that will in turn positively impact on organisational commitment. There are important lessons to be learned from this present study for organisations, managers, supervisors and employees. There are different but creative ways that can be employed by managers to enhance

psychological conditions in the work environment. This will take into account the intrinsic and extrinsic nature of the job, including the extent to which individuals will associate with the organisation because of its dependability.

Longitudinal studies are necessary to explore effects of specifically designed intervention, focusing at individual or organisational level on improving perceived psychological conditions, organisational health outcomes and improving organisational commitment levels.

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CHAPTER 5

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this chapter, conclusions are drawn regarding specific objectives of this study. The limitations of the research are discussed, followed by recommendations for the institution and suggestions for future research.

5.1. CONCLUSIONS

The general objective of this research was largely to study work engagement and its relationship with various other antecedents, mediators and outcomes of employees within a parastatal in the South African context. Furthermore, this study aimed to understand the relationships between factors such as work engagement, job demands, job resources, psychological conditions, self-efficacy and the impact of these factors on employees' levels of commitment and health. To these ends, four specific objectives were formulated.

The *first objective* of this study was to investigate the antecedents and outcomes of work engagement in a South African parastatal.

The outcomes of this study confirmed that two psychological conditions, namely psychological meaningfulness and psychological availability, significantly predicted work engagement. According to findings by May, Gilson and Harter (2004), both psychological meaningfulness and psychological availability mediated between their antecedents but this factor could not be confirmed in this study. Furthermore, this study confirmed previous research findings (May et al., 2004; Olivier & Rothmann, 2007) that psychological meaningfulness is the strongest predictor of work engagement. Person-environment fit and growth opportunities in the job were the strongest predictors of psychological meaningfulness. Person-environment fit contributed to psychological meaningfulness, which in turn contributed to work engagement. Person-environment fit was also found to be the strongest predictor of work engagement. This is consistent with the findings of May et al. (2004). Person-environment fit and growth

opportunities in the job contributed to work engagement. From the regression analysis, it was further found that psychological meaningfulness does not mediate the relationships between person environment fit, growth opportunities and colleague support on the one hand and work engagement on the other hand. This partially supported the findings of May et al. (2004), whereby the strong relationship between person-environment fit and Psychological meaningfulness were confirmed and the mediating effect psychological meaningfulness on work engagement was found.

Psychological availability predicted 7% of the variance in work engagement. Kahn (1990) describes psychological availability as individuals' beliefs that they possess the physical, emotional and cognitive resources to engage the "self" at work. This indicates that psychological availability was the strongest contributor to work engagement. Physical resources and self-consciousness predicted 13% of the variance in psychological availability. Physical resources (emotional, cognitive and physical) were found to be the strongest predictor of psychological availability. However, physical resources and self-consciousness did not statistically significantly predict work engagement, which means that the conditions for proving a mediation effect did not exist in line with Baron and Kenny (1986) guidelines. This did not support findings by May et al. (2004) that psychological availability mediates the relationship between resources (i.e. cognitive, emotional and physical resources) and self-consciousness on the one hand and work engagement on the other. The findings further confirmed that resources (emotional, cognitive and physical) was a statistically significant predictor of psychological availability and work engagement. However, psychological availability did not mediate the relationship between self-consciousness and resources (emotional, cognitive and physical) on the one hand and work engagement on the other.

The factor analysis of the psychological conditions items resulted in no items loading on the psychological safety condition and was therefore excluded from the statistical analysis. As a result of this insufficient loading and poor communality, the relationship with psychological safety could not be established. The insufficient loading and poor communality can be attributed to misinterpretation or poor item construction (reliability) of the scale that measured psychological safety. This finding is also consistent with Olivier and Rothmann (2007), who

could not establish any relationship to the condition of psychological safety contrary to May et al. (2004)'s findings who did report a relationship.

The *second objective* of this study was to determine the relationships between self efficacy, job demands (overload, work-home interference and home-work interference), job resources (organisational support, growth opportunities and advancement), psychological conditions and work engagement.

The findings in this study indicate that organisational support, growth opportunities and advancement predicted 27% of the variance in psychological meaningfulness. Moreover, growth opportunities and organisational support were found to be the strongest predictors of psychological meaningfulness. This means that the more individuals experience support in their organisations from both colleagues and supervisors, the more likely they are to experience meaning in their jobs. In summary, growth opportunities and organisational support are the strongest predictors of psychological meaningfulness, which is also one of the strongest predictors of work engagement.

Overload, physical load, work-home interference, home-work interference and psychological meaningfulness and availability predicted 16% of the variance in work engagement. It was consistently found that psychological meaningfulness was the strongest predictor of work engagement. These results are consistent with findings by May et al. (2004) and Kahn (1990).

The outcomes of this study also find in support of May et al. (2004) and Olivier and Rothmann (2007), that psychological meaningfulness and psychological availability predict work engagement. Furthermore, it was found that psychological meaningfulness is related to growth opportunities, organisational support and efficacy-others. Psychological availability was found to be positively related to organisational support and self-efficacy. Job resources motivates individuals in the workplace, with adequate job resources job demands are significantly reduced (Schaufeli & Bakker, 2004). This allows individuals to avail themselves psychologically and immerse themselves in their roles. This state of being then fosters goal accomplishment and stimulates personal growth and development. Research findings in burnout/work engagement

literature indicate that work engagement is mainly predicted by resources (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004). Maslach, Schaufeli and Leiter (2001) made an observation that burnout is particularly related to job demands but engagement is particularly related to job resources (Schaufeli & Bakker, 2002).

The findings in this study also indicated that organisational support was positively related to growth opportunities, advancement, self-efficacy and efficacy others. In contextualising the above findings, the work of May et al. (2004) asserts that individuals bring along their total sense of being in their work roles (Kahn, 1990). It is clear that when individuals appraise their work setting as supportive and full of growth and advancement opportunities, it will contribute to the extent to which they will immerse themselves in their work roles.

Overload, physical load, work-home interference and home-work interference predicted 13% of the variance in work engagement. The multiple regression analyses indicate that overload was the strongest predictor of work engagement. Overload, physical load, work-home interference, psychological meaningfulness and availability, self-efficacy and efficacy others predicted 31% of the variance in work engagement. The multiple regression analyses indicated that overload and psychological meaningfulness were strong predictors of work engagement.

The outcomes of this study indicated that overload and psychological meaningfulness were found to be the strongest predictors of work engagement. This finding is also consistent with findings by May et al. (2004). It was further found that overload is positively related to work/ home interference which also positively related to home/work interference. When an individual experiences more job demands and low personal resources at work, this in turn interferes with the home demands that also affect the work context.

Schaufeli and Bakker (2004) found that job resources lead to a motivational process, where the presence of adequate job resources reduces job demands, fosters goal and accomplishment and stimulates personal growth and development. Research findings in burnout/work engagement literature indicate that work engagement is mainly predicted and related to job resources

(Demerouti et al., 2001; Maslach et al., 2001; Schaufeli & Bakker, 2002; Schaufeli & Bakker, 2004).

The results of this study indicate that self-efficacy is positively related to efficacy others, which means that when individuals feel that they are competent enough to carry out certain tasks, they are more likely to be reinforced by the environmental confirmation, through direct or indirect feedback from colleagues and supervisors.

The *third objective* was to determine the relationship between psychological conditions, work engagement and the impact it has on health and organisational commitment.

The results showed that psychological meaningfulness was statistically and practically significantly related to psychological availability. Psychological meaningfulness is statistically and practically significantly related to work engagement. This finding is consistent with results by May et al. (2004) and findings as reflected in Phale and Rothmann (in press).

The health framework clearly articulates that if health issues affect organisational outcomes, it exerts pressure on organisations to take health issues seriously. Findings in this study indicate that psychological ill health is statistically and practically significantly related to physical ill health. This further indicates that there is a correlation between psychological ill health and physical ill health in the general health stream.

The results indicated that psychological meaningfulness and psychological availability explained 9% of the variance in physical ill health, but psychological availability made a statistically significant contribution to the regression model. Low psychological availability was the strongest contributor to physical ill health. This means that psychological availability is inversely related to physical ill health. The relationship between psychological conditions and health was therefore obtained.

The findings in this study showed that psychological meaningfulness and psychological availability explained 13% of the variance in psychological ill health. Psychological availability

made a statistically significant contribution to the regression model. Low psychological availability was found to be the strongest predictor of psychological ill health. This means that psychological availability id inversely related to psychological ill health. In summary, this research found that low psychological availability is the strongest predictor of both physical ill health and psychological ill health. Whether it be physically or psychologically, ill health impacts on an individual's capacity to be emotionally, physically or cognitively available to engage themselves in their respective roles (Kahn, 1990).

Low psychological meaningfulness is the strongest predictor of psychological ill health. Individuals experience meaningfulness when they feel useful and valuable as influenced by work-role fit and rewarding interpersonal interactions with co-workers (Olivier & Rothmann, 2007). When an individual experiences reduced anticipated feelings of meaningfulness in the job, this factor would most likely lead to psychological ill health, as it is associated with perceived negative thoughts about the self and the job.

Psychological meaningfulness and psychological availability predicted 7% of the variance in normative commitment. Psychological meaningfulness made a statistically significant contribution to the regression model. This further proved that psychological meaningfulness is the strongest predictor of affective commitment, an employee's emotional attachment, identification with and involvement in the organisation (based on enhanced feelings of devotion, belongingness and stability in the form of positive feelings or emotions towards the organisation) (Meyer & Allen, 1991). According to Dodd-McCue and Nelson (1996), normative commitment is also influenced by the co-worker's commitment.

Furthermore, it was found that work engagement is the strongest predictor of normative commitment (which is the sense of obligation towards the organisation) and affective commitment (the employee's emotional attachment and identification with and involvement in the organisation). This clearly indicates that when individuals are engaged and fully immersed in their roles within the organisation, they are most likely to develop a sense of obligation and emotional attachment to their organisation.

In the results, it was also found that psychological meaningfulness is the strongest predictor of normative commitment. This indicates that the extent to which employees experience meaning in their job contributes to the likelihood that they would feel obligated to remain with the organisation, based on the internalised values and goals thereof (Meyer & Allen, 1991).

Through the objectives set, measuring instruments/scales for work engagement, self-efficacy, antecedents, psychological conditions, organisational commitment and ill health were validated and the alpha coefficients were acceptable. However, this was not possible for psychological safety, as low or poor factor loading prevented it from being included in the analyses of the data. The instruments used were generally valid and reliable.

5.2 LIMITATIONS OF THIS RESEARCH

The first limitation of this study was the use of a cross-sectional design. Despite the use of statistically advanced techniques, such as structural equation modelling, no causal connections could be made with regard to relationships between the constructs used in the study. The relationships between constructs could only be analysed, described and interpreted, but not established. Therefore, the identification of relationships in the present study serves only to establish certain patterns consistent with previous theoretical research regarding the sequential relationships of the different variables studied.

The second limitation of this study was presented by the Psychological Conditions Questionnaire, which specifically measured psychological safety. Psychological safety items, as measured by the questionnaire, were not sufficiently reliable and valid even though these have been appropriately validated before sending out questionnaires and to be used in the study. As a result, it could not be included in the analysis.

The third limitation of the present research study was the sample size. The sample size was small, if compared to the large size of the organisation. This can be attributed to the constant manner in which surveys have been conducted in the organisation. Employees tended to ignore these, as no tangible outcomes emanated from those studies. This could be the case, even though

the rationale or reasons of this study have been thoroughly explained and communicated to all employees. The sample composition consisted of 51,4% females and 48,6% males. Different language groups were included in the study, but with low representation, to make any further generalisations in the total population. A total of 52,8% represented a combined African indigenous languages or ethnical group and a total of 47,2% represented a combined Afrikaans and English group.

The fourth limitation of the current research study is its sole reliance on self-report measures which, according to Schaufeli, Enzmann and Girault (1993), constitutes what is commonly known as "method variance". This means that at least part of the shared variances between measures may be attributed to method variance. Several authors argued that this phenomenon is not a major threat if interactions have been found (Dollard & Winefield, 1998; Wall, Jackson, Mullarkey, & Parker, 1996) as it is the case in the present study. Another factor that could have presented a further complication is the fact that no other suitable and relevant data gathering method could be used to supplement the use of self-report measures. Multivariate approaches are being proposed in the study of constructs like work engagement, by including variables inherent to the job, the environment and the individual (Dolan, 1995, Viljoen, 2006).

5.3. RECOMMENDATIONS

5.3.1. Recommendations for the institution

Parastatals are revenue-generating institutions and like any full functioning business entity, they have interdependent business units to ensure the organisational success. Largely, it is employee (human resources) efforts that are critical to organisational achievement of primary and secondary objectives. Therefore, it is important that organisations understand the constructs that are connected to work-related well-being to ensure sustained human resource capital. Organisations, through their senior management teams, can begin a process of improving the work environment, in order for employees to experience psychological meaning and psychological safety in their jobs. This could allow them to be cognitively, physically and emotionally available for their roles (Kahn, 1990).

In order to promote psychological meaningfulness in the job, appropriate decisions related to sound recruitment and selection, placement and induction processes need to be aligned to the organisational strategies. It is imperative for managers to consistently endeavour to find a fit between the inherent role requirements of the job and the individual, in order to promote individual identification with the job that will harness psychological meaningfulness in the role. The organisation must foster a work climate that will be characterised by improved interpersonal relationships between supervisors and colleagues. The supportive working environment is important to create opportunities for growth, advancement and challenging job content. The job outputs should be aligned to personal and physical resources, to avoid individuals experiencing work overload that could in turn negatively affect their work-life balance.

According to Kompier and Kristensen (2001), primary interventions may in the first place be directed at either the work situation or the individual capacity of the employee. Work-oriented interventions aim to improve the fit between an individual and the workplace. Employee-oriented intervention are aimed at teaching employees to deal more effectively with experienced stress or to modify their appraisal of a stressful situation so that the perceived stress threats are reduced.

It is important to note that employees are in a position to avail themselves psychologically in their roles when they have the cognitive, emotional and physical resources needed to carry out their respective roles. This could be achieved with the introduction of robust and reliable processes for job profiling and design, recruitment, selection, placement and induction, employee relations and availing job resources needed for employees to succeed in their jobs.

In order for this organisation to achieve competitiveness, it has to take its workforce seriously. A conducive environment in the workplace enables individuals within the organisation to use parts of themselves fully without hesitation, including their competencies and skills.

Organisations have a big challenge in that whatever they introduce as programs or interventions, they must be addressing workplace issues that will positively impact on organisational

commitment. The organisational values must truly reflect the organisational culture aimed at effective people management. There are important lessons to be learned from this present study for organisations, managers, supervisors and employees respectively, to ensure that employees perform in areas where they could make a difference - not only for themselves, but also for the organisation that they serve. There are different but creative ways that can be employed by managers to enhance psychological conditions. This will take into account the intrinsic and extrinsic nature of the job, as well as personal predispositions that foster motivation and resilience. This will also include the extent to which individuals will associate with the organisation because of its dependability.

Organisations that require their employees to develop organisational commitment, should provide a supportive and mutually benefiting working environment. The organisation should demonstrate commitment to their employees who then, in turn, would give themselves fully. Mutual commitment is demonstrable through adjustment of the work environment, through effective practices like delegation of authority, focused training and development, mentoring and coaching for performance, growth opportunities and the offering of competitive remuneration packages. The organisation must also promote the balance between work, family and leisure to contribute to the building of a workforce that is balanced. Organisational commitment is a result of the perceived and experienced organisational support, demonstrated by supportive colleagues, supervisors (Cherniss, 1995), practices and procedures.

5.3.2 Recommendations for future research

Longitudinal and quasi-experimental research designs are needed to further validate the hypothesised causal relationships in the current study. These studies are necessary to explore effects of specifically designed interventions, focusing at individual or organisational level on improving perceived psychological conditions, organisational health outcomes and improving organisational commitment levels.

Secondly, more emphasis should be placed on further investigations of the mediating effects of psychological conditions on work engagement, health and organisational commitment in other contexts.

Longitudinal research studies are necessary to explore effects of self efficacy in different work contexts and in larger samples, as part of the interventions crafted specifically for dealing with psychological availability. In future research, more emphasis should be placed on further investigations of the mediating effects of psychological conditions such as meaningfulness, safety and availability on work engagement in other contexts. Larger samples should be used as well, to increase confidence levels in terms of consistency across other similar groups.

More research is needed, focusing on the measurement of psychological safety in terms of item construction, as well as validating the instrument of measurement in different work contexts and samples for the South African context.

In conclusion, future research should also focus on the study of appropriate interventions and their impact, using applicable research designs such as probability sampling methods with acceptable sample sizes. The use of intervention mapping in the planning, implementation and research of the effects of interventions and the incorporation of different types of change in terms of the effectiveness of interventions (Vandenberg & Self, 1993) is also recommended.

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