

RESILIENCE, SELF-EFFICACY, AND BURNOUT OF EMPLOYEES IN A CHEMICAL ORGANISATION

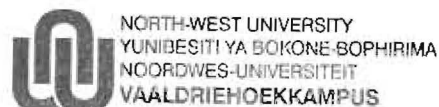
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Commerci in Industrial Psychology in the School of Behavioural Sciences at the Vaal
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REMARKS

The reader is reminded of the following:

- The reference format and the editorial style as prescribed by the *Publication Manual (5th edition)* of the American Psychological Association (APA) were followed in this mini-dissertation. This practice is in line with the policy of the Programme in Industrial Psychology of the North-West University to use APA style in all scientific documents as from January 1999.
- The mini-dissertation is submitted in the form of a research article.

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SUMMARY

TITLE: Resilience, self-efficacy and burnout of employees in a chemical organisation.

KEYWORDS: Positive psychological capacities, state ego-resilience, state self-efficacy, burnout.

The objectives of this study were to investigate the relationship between positive psychological capacities (state ego-resilience and state self-efficacy) and burnout levels of employees ($N = 164$) in a chemical organisation and to determine whether state ego-resilience and state self-efficacy can be used to predict burnout levels of employees in a chemical organisation.

A cross-sectional survey design was used. The Ego-Resiliency Scale (ER89), the State Self-Efficacy Scale (SSES) and the Oldenburg Burnout Inventory (OLBI) were administered to measure the constructs. The research method for this article consists of a brief literature review and an empirical study. Confirmatory factor analyses, Cronbach's alpha coefficients and the inter-item correlation coefficients were used to assess the reliability and validity of the measuring instruments. Descriptive statistics were used to describe data, and Pearson's product moment correlation coefficients, and regression analyses were used to examine the relationships between the constructs employed in this research.

Results obtained confirmed the internal consistency and one-dimensional factor structures of the state ego-resilience and state self-efficacy measuring instruments. Although the two-dimensional factor structure of the OLBI was confirmed, the two subscales were not consistent with the expected factor structure. Consequently, only the total burnout scale (which presented with adequate internal consistency) was used.

A significant statistical and practical correlation was found between state ego-resilience and burnout. State self-efficacy and burnout demonstrated a significant statistical and practical correlation. Regression analyses indicated that both state ego-resilience and state self-efficacy hold predictive value with regard to burnout.

Conclusions were made, limitations of the current research were discussed and recommendations for future research were put forward.

OPSOMMING

TITEL: Veerkrachtigheid, selfdoeltreffendheid en uitbranding van werknemers in 'n chemiese organisasie.

SLEUTELWOORDE: Positiewe psigologiese hoedanighede, staat egoveerkrachtigheid, staat selfdoeltreffendheid, uitbranding.

Die doelwitte van hierdie studie was om die verhouding tussen positiewe psigologiese hoedanighede (staat egoveerkrachtigheid en staat selfdoeltreffendheid) en uitbrandingsvlakke van werknemers ($N = 164$) in 'n chemiese organisasie te ondersoek en te bepaal of staat egoveerkrachtigheid en staat selfdoeltreffendheid gebruik kan word om uitbrandingsvlakke van werknemers in 'n chemiese organisasie te voorspel.

'n Dwarssnitopname-ontwerp is gebruik. Die Ego-veerkrachtigheidskaal (ER89), die Staat Selfdoeltreffendheidskaal (SSDS) en die Oldenburg Uitbrandingsvraelys (OLBI) is toegepas om die konstrakte te meet. Die navorsingsmetode vir die artikel bestaan uit 'n kort literatuuroorsig en 'n empiriese ondersoek. 'n Bevestigende faktor-analise asook Cronbach se alfakoëffisiënte en interitem-korrelasies is gebruik om die geldigheid en betroubaarheid van die meetinstrumente te ondersoek. Beskrywende statistiek is gebruik om die data te beskryf, en Pearson se produkmoment-korrelasiekoëffisiënte asook regressieanalise is gebruik om die verhouding tussen die konstrakte van hierdie navorsing te ondersoek.

Resultate het die interne konsekwenheid en eendimensionele faktorstrukture van beide die staat egoveerkrachtigheid en staat selfdoeltreffendheid meetinstrumente bevestig. Alhoewel die tweedimensionele faktorstruktuur van die OLBI bevestig is, het die twee subskale nie ooreengestem met die verwagte faktorstruktuur nie. Gevolglik, is slegs die totale uitbrandingskaal (wat voldoende interne konsekwenheid getoon het) gebruik.

Daar is 'n beduidende statistiese en praktiese korrelasie tussen egoveerkrachtigheid en uitbranding gevind. Staat selfdoeltreffendheid en uitbranding het 'n betekenisvolle statistiese en praktiese korrelasie getoon. Regressieanalises het getoon dat beide staat egoveerkrachtigheid en staat selfdoeltreffendheid uitbranding voorspel het. Gevolgtrekkings is gemaak, beperkinge van die huidige navorsing is uiteengesit en aanbevelings vir toekomstige navorsing is aan die hand gedoen.

CHAPTER 1

INTRODUCTION

The purpose of this research is to investigate the positive psychological capacities (state ego-resilience and state self-efficacy) and burnout of employees in a chemical organisation.

In this chapter, the problem statement is discussed, and an outline is provided of the research objectives, research method and chapter division.

1. PROBLEM STATEMENT

1.1 Overview of the problem

South African companies no longer have a choice – they must change to survive. Unfortunately, it is not easy to successfully implement the changes (Kreitner & Kinicki, 2004). Today's workplace is undergoing immense and permanent changes. The emergence of a global economy is forcing companies to change in the way they do business. Therefore, external forces and pressures for change originate outside the organisation and because these forces have global effects, they may cause an organisation to question the essence of what business it is in and the process by which the products and services are produced (Kreitner & Kinicki, 2004).

According to Kreitner and Kinicki (2004), organisations have been "re-engineered" for greater speed, efficiency, flexibility and sustainability. This means they are more customer focused, dedicated to continuous improvement, strive for excellence in all they do, learning and development, values driven and structured around teams. These qualities, along with computerised information and operations technology, hopefully enable big organisations to mimic the speed and flexibility of small organisations.

Many organisations have implemented practices that attempt to reduce costs and increase productivity, which often leads to a mentality that favours profitability over the welfare of people (Turner, Barling, & Zacharatos, 2002). The ever-changing world of work and its demands imply increased anxiety in all work systems (Miller, 1993). Therefore, it is

hypothesised that organisations need new ways of thinking and operating to deal with these demands effectively. According to Cascio (2001) and Rothmann and Cilliers (2007), the same is true for industrial and organisational (I/O) psychology focusing on the application of psychology in the workplace.

Referring to its roots, industrial and organisational (I/O) psychology is described as an applied division of psychology concerned with the study of human behaviour related to work, productivity and organisations (Cascio, 2001). Clinical psychology has traditionally focused on psychological deficits and disability. It has rarely advantaged individuals' resilience, resourcefulness and capacity for renewal. However, in the USA, Professor Martin Seligman and his colleagues have begun laying the foundations for positive psychology to complement deficit-based approaches (Seligman, 2002; Seligman & Csikszentmihalyi, 2000; Snyder & Lopez, 2002). According to Seligman (2002) and also suggested by Rothmann and Cilliers (2007), the fundamental objective of positive psychology is to understand, recognise, appreciate and facilitate happiness and personal well-being. The field of positive psychology at the subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present) (Seligman & Csikszentmihalyi, 2000). This new branch of psychology is primarily concerned with the scientific study of human strengths and happiness (Carr, 2004).

According to Luthans (2004), positive psychology has now emerged as a widely recognised approach and research domain, although to date, applications have almost all been in clinical, educational and even athletic arenas. Until recently, limited attention has been given in industrial and organisational (I/O) psychology and organisational behaviour to state-like psychological strengths and capacities. According to Luthans (2002a; 2002b), the purpose of such research is to begin to fill some of this void by presenting proposed positive organisational behaviour strengths that meet the particular criteria of being not only positive, but also comparatively unique to the organisational behaviour field, based on theory, research and valid measures (Luthans, 2004). According to Bandura (1997), resiliency and self-efficacy develops from mastering experiences in which goals are achieved through diligence, perseverance and overcoming obstacles.

Positive psychological capital (PPC) provides a framework that enables research into positive organisational behaviour (POB). POB, which comprises resilience, self-efficacy (confidence),

hope, and optimism, was introduced by Luthans, Luthans, and Luthans (2004) as a measure comparable and complimentary to measures of human (or intellectual), social and traditional physical capital (Page & Donohue, 2004).

While a positive psychology perspective is necessary, harsh realities exist that contribute to poor health, occupational stress and burnout (Cherniss, 1995). Stordeur, D'hoore, and Vandenberghe (2001) note that when an individual becomes unable to cope with an enduring source of stress, burnout may appear. Schaufeli and Enzmann (1998, p. 36) define burnout as "a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterised by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work." Leiter and Harvie (1998) report that burnout results from the gap between the individual's expectations to fulfil his or her professional role and the structure in place within the organisation. According to Leiter and Harvie (1998), when the workplace does not support professional goals, exhaustion and cynicism increase and professional efficacy decreases. According to Maslach, Schaufeli, and Leiter (2001), the exhaustion component of job burnout relates to the basic individual stress aspect of burnout, referring to feelings of being overextended and depleted of one's emotional and physical resources. The cynicism or depersonalisation component represents the interpersonal context dimension of burnout, referring to negative, callous or excessively detached responses to various aspects of the job. The reduced efficacy (confidence) or accomplishment component is linked to the self-evaluation dimension of burnout, referring to feelings of incompetence and a lack of achievement and productivity at work. Emotional exhaustion and depersonalisation are related to job stressors, whereas lack of personal accomplishment is more strongly related to lack of adequate resources (Bakker, Kilmer, Siegrist, & Schaufeli, 2000).

Instead of the Maslach Burnout Inventory (MBI), Demerouti, Bakker, de Jonge, Janssen, and Schaufeli (2001) used a newly developed German questionnaire – the Oldenburg Burnout Inventory (OLBI; Demerouti, Bakker, Vardakou, & Kantas, 2003) – that includes both core dimensions of burnout (i.e. exhaustion and disengagement) that are conceptually similar to those of the MBI-GS (i.e. exhaustion and cynicism). However, contrary to the MBI-GS, both OLBI dimensions are measured by negatively phrased items as well as by positively phrased items. By doing so, Demerouti et al. (2001; 2003) offer a third alternative to the operationalisation of burnout and engagement. While Maslach and Leiter (1997) argue that

burnout and engagement are the end points of a continuum that is spanned by the MBI, and (Schaufeli, Salanova, Gonz  les-Rom  , & Bakker, 2002a; Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002b) argue that burnout and engagement are independent states that should be measured separately by different instruments, the OLBI is constituted by two bipolar scales that include positive engagement items as well as negative burnout items (Schaufeli & Bakker, 2004).

Thus, conceptualising burnout as a syndrome of work-related negative experiences includes feelings of exhaustion and disengagement from work. Therefore, the exhaustion subscale includes items on the affective, physical and cognitive aspects of burnout, and the disengagement subscale includes items that relate to distancing one from one's work. Exhaustion is defined as a consequence of extended and intense physical, affective and cognitive strain as a result of prolonged exposure to specific work conditions and stressors (Demerouti, Bakker, Nachreiner, & Ebbinghaus, 2002). As opposed to the conceptualisation of exhaustion in terms of the Maslach Burnout Inventory (MBI), exhaustion is viewed as comprising not only affective aspects (e.g. feeling emotionally drained), but also physical and cognitive aspects (e.g. the need for a longer resting time) of exhaustion, making the OLBI more applicable to both employees who perform physical work and those whose jobs mainly relate to information processing instead of dealing with people. The disengagement scale of the OLBI refers to emotions regarding work tasks (e.g. uninteresting), as well as to a devaluation and mechanical execution of one's work (Bosman, 2005).

In terms of the antecedents of burnout, Maslach et al. (2001) report that research has indicated that burnout is related to job characteristics such as overload, role conflict, role ambiguity and lack of social/group support. Furthermore, burnout is related to occupational characteristics such as the requirement to be emotionally sympathetic, to suppress emotions of the job, difference in terms of workload, and fairness. Schaufeli and Bakker (2004) developed the Comprehensive Burnout and Engagement (COBE) Model to explain positive and negative behaviour at work. The COBE Model assumes two psychological processes, namely an energetic and a motivational process (Rothmann & Cilliers, 2007; Schaufeli & Bakker, 2004). See Figure 1.

This COBE Model process links job demands with health problems via burnout and can be illuminated by Hockey's (1993, 1997) state regulation model of compensatory control. This model offers a cognitive–emotional framework for understanding human performance under stress. It is concerned with the continuance of performance stability under demanding conditions, which requires the mobilisation and management of mental effort. When confronted with high job demands, an active coping response is basically adaptive in the short run, but it is likely to be maladaptive as a regular pattern of response to work or, if sustained over a prolonged period, it might deplete the individual's energy resources.

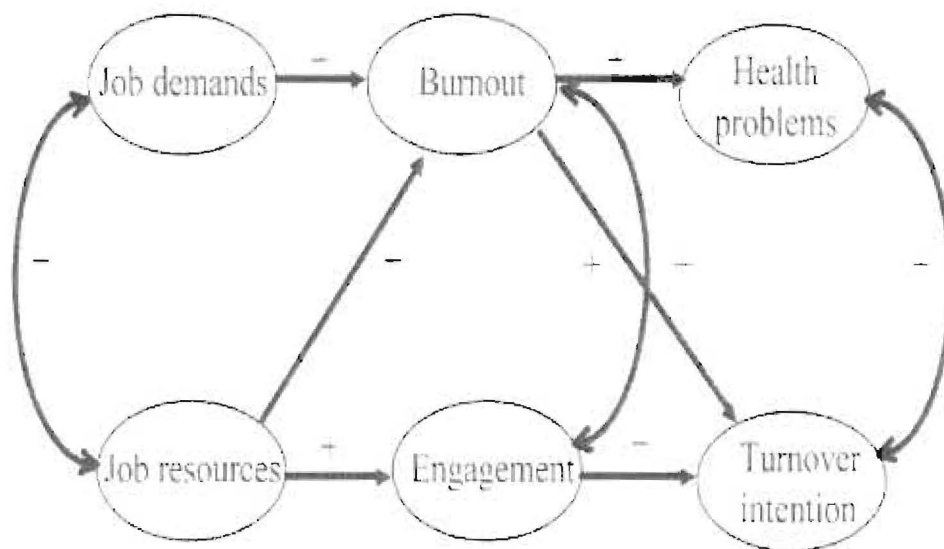


Figure 1. The Comprehensive Burnout and Engagement Model (Schaufeli & Bakker, 2004).

According to Maslach (1993) and Rothmann and Rothmann (2006), burnout is caused by high job demands (such as pace and amount of work, having to remember much detail and/or emotional demands) that drain the employee's energy, and in an attempt to cope with the resulting exhaustion, the employee withdraws mentally. This obviously results from giving too much for too long and is energy depleting, which leads to exhaustion and/or lacking resources (personal and/or job resources, such as resilience).

This COBE Model process links job resources via engagement with organisational outcomes (e.g. turnover intention). However, from the definition, job resources may play either an intrinsic motivational role because they encourage employees' growth, learning and development, or they may play an extrinsic motivational role because they are instrumental in achieving work goals. According to the self-determination theory (Deci & Ryan, 1985), work contexts that support psychological autonomy, competence and relatedness enhance well-

being (i.e. vitality) and increase intrinsic motivation (Ryan & Frederick, 1997). Therefore, the job characteristics theory (JCT) hypothesises that job characteristics are linked – through so-called critical psychological states – with positive outcomes such as high-quality work performance, job satisfaction, and low turnover and absenteeism (Schaufeli & Bakker, 2004).

As noted by Rothmann (2003), tracking employees' effectiveness in coping with the demands of the new world of work and stimulating their growth and development in areas that could possibly impact on individual well-being and organisational efficiency and effectiveness are crucial. As noted, the field of positive psychology is rapidly gaining momentum in I/O psychology in the past few years (Snyder & Lopez, 2002; Wright, 2003). Fredrickson's (1998) "broaden-and-build" theory of positive emotions states that positive emotions, including, joy, interest, contentment, satisfaction and happiness, all share the ability to "broaden" an individual's momentary thought-action repertoires. In addition, these positive emotions assist in building the individual's enduring personal resources. The tendency to experience the positive is proposed to be central to one's ability to flourish, mentally thrive and psychologically grow (Rothmann & Cilliers, 2007). This theory explains how positive affective experiences signal personal well-being and also contribute to personal growth and development (Carr, 2004). Studies have indicated that inducing positive emotional states in people facilitates flexible, effective problem solving, decision making and evaluation of events (Rothmann & Rothmann, 2006). Considering the changes employees have to deal with and the underprivileged background of much South Africans, great importance has been placed on research about causes, moderators, mediators and effects of positive emotions (Rothmann & Cilliers, 2007).

According to Rothmann and Rothmann (2006), job resources (especially organisational support and growth opportunities) have a strong effect on individual well-being/wellness (i.e. low distress and burnout and high eustress and engagement). The concept of eustress is important in any discussion of stress, especially occupational stress and interventions designed to relieve or reduce occupational stress (Le Fevre, Kolt, & Matheny, 2006). As Selye (1956) originally proposed, and as later authors (Le Fevre, Matheny, & Kolt, 2003) have supported, a major determinant of whether any given stimulus eventually represents or invokes stress (distress) in an individual depends on his or her perception and interpretation of that stimulus in the broad context in which it is presented. Aspects important to the interpretive act may include the timing, source and perceived desirability of the stimulus and

the degree to which the individual perceives he or she has control over it (Le Fevre et al., 2003). Without the useful term "eustress" or "good stress" to represent positive responses to external stressors, and to differentiate them from the negative or distressful responses that are the frequent single topic of study, discussion of the broad area of stress becomes rather one-sided, stilted, and difficult to construct. Edwards and Cooper (1988) describe eustress as a positive discrepancy between perceptions and desires (provided that the discrepancy is significant to the individual). Nelson and Simmons (2003) also suggest that eustress and distress are separate and independent aspects of the overall stress response. The point these authors hold in common is that eustress is primarily a result of positive perception of the stressors, and that distress, therefore, is a result of negative perception of the stressors (Le Fevre et al., 2006).

According to Rothmann and Rothmann (2006), employees who have less resilience are more inclined to perceive high job demands and anxiety, a lack of resources, and to experience more distress and less eustress. In their study, distress (i.e. burnout) contributed strongly to physical and psychological ill health, while eustress (i.e. low burnout and high work engagement) contributed strongly to organisational commitment.

Resilience refers to recuperation and a source of strength, but it could also include constructive and growth-enhancing consequences of challenges and adversity (Strümpfer, 2003). The process of resilience helps people sustain lives of health and hope, despite adversity (Johnson & Wiechelt, 2004). According to Werner (1993), resilient individuals are people who, despite being raised in environments characterised by environmental hardships and extreme stressors, are able to lead successful and meaningful lives. Characteristics of these resilient individuals include having positive temperaments, having well-developed cognitive and academic skills, having an internal locus of control, having realistic educational and vocational plans, taking pleasure in hobbies, assuming responsibility and accountability, helping others, taking advantage of opportunities during periods of transition, having at least one unconditional relationship, and having religious affiliation and inner faith (Rickwood, Roberts, Batten, Marshall, & Massie, 2004).

According to Weber (2005), differing theories have been anticipated to support resilience as a theoretical basis to encourage success among those exposed to repeated stress. Resilience as a

model suggests that, as one is exposed to repeated stressors, a threshold level of stress induces learning and development that modifies future behaviour, alleviating stress and improving overall performance (Weber, 2005). However, researchers such as Garmezy (1985) and Rutter (1987) used resilience as a descriptive label that they applied to individuals who appeared to function surprisingly well under environmental conditions judged to be adverse and stressful.

Early research tended to focus on understanding the major protective factors that positively influence or contribute to stress resistance or resilience (Weber, 2005). Resilience has been characterised in three ways. It has been equated with coping, defined as efforts to restore or maintain internal or external equilibrium under significant threat by means of human activities, through thought and action (Weber, 2005). Masten, Best, and Garmezy (1991) also state that resilience has been viewed as recovery in the face of trauma such as abuse or injury. Finally, resilience has been recognised as the presence of protective factors that moderate the relationship between stress and risk on one hand and coping or competence on the other. Therefore, resilience is related to stress, coping and risk paradigms (Weber, 2005).

Strümpfer (2003) argues that there are psychological variables, subsumed under the heading of resilience, including engagement, meaningfulness, subjective well-being, positive emotions, and proactive coping, that enhance fortigenesis, thus furthering resistance (to burnout and ill-health, for example). Resilience remains latent until activated, and is therefore situationally contextualised by becoming temporarily activated by passing situational influences (Fleming, 1982; McClelland, 1985; Mischel & Shoda, 1995, 1998). According to Kim-Cohen, Moffitt, Caspi, and Taylor (2004), resilience is partly heritable, and protective processes operate through both genetic and environmental effects. From the literature it is evident that resilience is both state- and trait-like, and although resilience is heritable, it is also affected by external constituencies.

According to Strümpfer (2001), the viewpoint demanding resilience from a particular individual is co-produced by issues such as gender, age, genetic constitution, present and past levels of physical and psychological health, personality variables, physical strength and fitness, bodily intactness, family situation and role, socio-economic and educational status, past history of trauma and adversity, economic, political/legal systems and conditions, and global variables.

Positive psychological capital (PPC) is a model characterised by dimensions that assist in measuring the human contribution to organisations in subtle ways. Therefore, it can be noted that resiliency and self-efficacy (confidence) are interrelated constructs that are well served by a process of integration under positive psychological capital (PPC). There is a subtle distinction between some of the states: each, however, adds some unique value (Page & Donohue, 2004).

The construct of self-efficacy, which was developed by Bandura (1982, 1989), is described as the belief of individuals in their capability to organise and implement actions necessary to attain desired performance levels (Bandura, 1982, 1986; Schunk, 1985, 1994). People who are self-efficacious (self-confident) choose challenging tasks and events, extend motivation and effort to successfully accomplish their goals, and persevere when faced with obstacles (Bandura, 1986).

Self-efficacy beliefs are an element of social cognitive theory (Bandura, 1977, 1986, 1997). Self-efficacy beliefs are context-specific; however, people do not feel equally efficacious in all situations. Self-efficacy is simply stated as people's beliefs about their capabilities to perform particular tasks (Bandura, 1986; 1997). It is believed that people can perform a task successfully when they attempt a particular task and believe they can perform it successfully, as opposed to those who do not believe that they can perform the task successfully, even if they have the same ability. Bandura (1986) maintains that self-efficacy is an inferential process in which the relative contribution of ability and inability factors with regard to performance successes and failures must be weighed.

Bandura (1986) described four ways in which people acquire self-efficacy expectations: personal performance accomplishments (direct experiences of success or failure); vicarious learning (observing others succeed or fail); social or verbal persuasion (encouragement from parents, teachers, peers and other people); and physiological arousal (heightened anxiety often leads to lower self-efficacy expectations). Generally, personal performance accomplishment is the most powerful source of self-efficacy information. Thus, Bandura's (1986) self-efficacy concepts offer an explanation for the phenomenon that people with equal levels of proficiency/skill often do not perform at the same level. People who expect to achieve success in a particular task are said to have positive self-efficacy expectations for the task, and those people who expect to fail in their task have negative self-efficacy expectations

(Bandura, 1986). Self-efficacy refers to an individual's belief (or confidence) about his or her abilities to gather cognitive resources, mobilise the motivation as well as the courses of action needed to successfully execute a specific task within a given context (Stajkovic & Luthans, 1998).

According to Appelbaum and Hare (1996, p. 33), "self-efficacy beliefs are the most central and pervasive influence on the choices people make, their goals, the amount of effort they apply to a particular task, how long they persevere at a task in the face of failure or difficulty, the amount of stress they experience and the degree to which they are susceptible to depression".

From the above literature review, it is perceived that psychological states such as resilience and self-efficacy may affect burnout levels. Hence, the purpose of this research is to investigate the relationship between state ego-resilience, state self-efficacy and burnout.

The following research questions can be formulated based on the above-mentioned description of the research problem:

- How are the constructs state ego-resilience, state self-efficacy, and burnout, as well as the relationships between these constructs conceptualised in the literature?
- What is the relationship between state ego-resilience, state self-efficacy and burnout levels of employees in a chemical organisation?
- Can state ego-resilience be used to predict burnout levels of employees in a chemical organisation?
- Can state self-efficacy be used to predict burnout levels of employees in a chemical organisation?

In order to answer the above research questions, the following research objectives are set.

2. RESEARCH OBJECTIVES

The research objectives are divided into general and specific objectives.

2.1 General objective

The general objective of this research is to examine the relationship between state ego-resilience, state self-efficacy and burnout.

2.2 Specific objectives

The specific objectives of this research are:

- To conceptualise state ego-resilience, state self-efficacy and burnout according to the literature.
- To determine the relationship between state ego-resilience, state self-efficacy, and burnout according to the literature.
- To determine the internal consistency and construct validity of the measuring instruments of state ego-resilience, state self-efficacy and burnout in a sample of employees in a chemical organisation.
- To examine the relationship between state ego-resilience, state self-efficacy and burnout within a sample of employees in a chemical organisation.
- To determine whether state ego-resilience can be used to predict burnout levels of employees in a chemical organisation.
- To determine whether state self-efficacy can be used to predict burnout levels of employees in a chemical organisation.
- To make recommendations for future research.

3. PARADIGM PERSPECTIVE OF THE RESEARCH

A certain paradigm perspective that includes the intellectual climate and the market of intellectual resources (Mouton & Marais, 1992) directs the research.

3.1 Intellectual climate

The intellectual climate refers to the variety of non-epistemological convictions that are endorsed by a discipline in a specific period. They are convictions, values and assumptions

that are not directly connected to the epistemological aims of the specific research practice (Mouton & Marais, 1992). These convictions are often not directly testable or are not meant to be testable. It postulates underlying testable judgements. In order to determine the intellectual climate of the research, the disciplinary relevance and meta-theoretical assumptions are discussed.

3.2 Discipline

Industrial and organisational psychology (also known as I/O psychology, occupational psychology, work psychology, work and organisational psychology, personnel psychology or talent assessment) is concerned with the application of psychological theories, research methods, and intervention strategies to workplace issues (Wikipedia, 2007).

This research falls within the boundaries of the behavioural sciences and more specifically industrial psychology. According to Wikipedia (2006), industrial psychology is the study of behaviour of people in the workplace. Industrial psychology attempts to apply psychological results and methods to aid workers and organisations.

The sub-disciplines of industrial psychology that are focused on in this research are personnel psychology and psychometrics. Personnel psychology is the application of psychological research, theory and methods to assess personnel techniques and programmes in organisations. Psychometrics is the field of study concerned with the theory and technique of psychological measurement, which includes the measurement of knowledge, abilities, attitudes and personality traits. The field is primarily concerned with the study of differences between individuals. It involves two major research tasks, namely (i) the construction of instruments and procedures for measurement; and (ii) the development and refinement of theoretical approaches to measurement (Wikipedia, 2006).

3.3 Meta-theoretical assumptions

Five paradigms are relevant to this research. Firstly, the literature review is done within the humanistic paradigm and systems theory, and secondly the empirical study is done within the behaviouristic, positivistic and functionalistic paradigms.

3.3.1 Literature review

The literature review is done within the humanistic paradigm and the systems theory.

According to Bergh and Theron (2004), the humanistic approach, like many others, is not based on one single theory but comprises of a variety of theories within the phenomenological, existential and self theories. Compared to other personality theories, these are not really personality theories but rather philosophical ideas about how people exist and find meaning in life. The humanist paradigm is a school of thought that emphasises self-actualisation and striving for the attainment of joy, care, love, positiveness, health and creativity. This paradigm is against the view that individuals can evolve toward fully functioning or self-actualised people and live meaningfully without necessarily being enslaved by circumstances. According to Rowan (2001), although much of humanistic psychology tends to have a positive outlook on life and human nature, as reflected in the works of Maslow and Rogers, the discipline is not exclusively optimistic. It also includes thinkers such as Schneider (2003), May (1982) and Bugental (1964), who are not particularly optimistic (Anon, 2006). The main assumptions are:

- Humans are inherently good.
- Humans have a free will and therefore not all behaviour is determined.
- All individuals are unique and have an inherent drive to achieve their potential.
- Psychology should research areas that are meaningful and important to human existence, and should not avoid them because they are too difficult.
- Psychology should study both the internal experience and the external behaviour.
- Positivism forms the basis of human nature.
- Human beings are more than the sum of their separate parts (Anon, 2006).

The systems theory/perspective is one way to view an organisation and that is "to consider all the possible interactions between persons and groups, their relationships and relatedness to other contexts within and outside the organisation" (Bergh & Theron, 2004, p. 420). In this regard, it considers an individual as a fully-fledged system consisting of a number of subsystems (such as body, mind, intelligence, emotions and motivation) that are influenced by the function within many other systems and subsystems, for instance political,

government, nation, culture, work group, religion, family relations and marriage (Bergh & Theron, 2004, p. 394).

According to Bergh and Theron (2004) the interactive and circular influence of factors on an individual and his or her behaviour and the context of a person's behaviour should always be taken into consideration. Organisations are also seen as complex in that they are systems consisting of interrelated parts. They function in terms of various inputs, involving the individual, work groups, the work itself, and economic and technological factors, which are transformed to outputs that reflect the organisation's effectiveness. In this paradigm, the individual is part of an interpersonal system, and resistance should be handled in a flexible and creative way.

According to French, Bell, and Zawacki (2005), Ackoff defines a system as a set of two or more elements that satisfies the following three conditions:

- The behaviour of each element has an effect on the behaviour of the whole.
- The behaviour of the elements and their effects on the whole are interdependent.
- However, each of the subgroups of the elements that are formed has an effect on the behaviour of the whole, and none has an independent effect on it.

According to French et al. (2005), for an organisation to function effectively as a whole system, boundary permeability between an organisation and its environment and among subunits within the organisation must be maintained at an optimal level.

3.3.2 Empirical study

The empirical study is done within the behaviouristic, functionalist and positivistic paradigms, the approach to psychology which argues that the only appropriate subject matter for scientific psychological investigation is observable, measurable behaviour. It was with Watson's polemical reaction to the subject of introspectionism in the 1910s that true behaviourism was born (Watson, 2002).

According to Bergh and Theron (2004), the behaviouristic paradigm view of humankind is related to their scientific orientation and beliefs that human behaviour can be controlled, manipulated and assessed accurately. They believe that people's existence is dependent on their abilities to repeat those behaviours that are needed in their environments. The following assumptions explain the underlying beliefs and foundations of this paradigm:

Learning is defined as an observable change in behaviour. Behaviourists believe that mental processes are unimportant since they cannot be observed or measured. Thus, these internal cognitive processes are largely excluded from scientific study. Learning is studied most objectively through the framework of stimuli and responses. The stimulus is something from the environment while the response comes from the learner. Organisms are born as blank slates. Behaviourists believe that all behaviour and personality development are no more than learned responses and habits, which are behaviours in a given situation (Bergh & Theron, 2004). In this research, the behaviouristic paradigm is relevant to the training and interventions in interpersonal effectiveness.

The functionalistic paradigm emphasises that big, meaningful components of psychological phenomena should be studied in terms of their functional relevance by asking what relevance it has for the survival of mankind. According to Darwin's theory, natural selection, adaptation to the environment and variability contribute to survival (Bergh & Theron, 2004). Functionalism is the oldest dominant theoretical perspective in sociology and other social sciences. This perspective is built upon twin emphases: application of the scientific method to the objective social world and use of a comparison between the individual organism and society (Anon. 2000).

In this research this paradigm is applicable to the researcher's unbiased approach toward the behaviour being studied, and the objective and strictly scientific methods and techniques that will be used. Functionalism was the dominant sociological perspective. Functionalist assumptions concerning families have, however, been subject to sustained criticism. This paradigm has the following assumptions:

- Functions: institutions meet social needs. Traditionally, these functions have been divided into "essential" and "non-essential". This idea of the shedding of tasks and of increasing specialisation is central to the functionalist notion of the division of labour and the

coming of industrial society. This specialisation is known as differentiation. For individuals, the essential function is the stabilisation of the adult personality and the socialisation of children.

- History: the history of the family is seen as evolutionary, and this evolution takes the form of adaptation by the family to processes of social change.
- Universalism: functionalists argue that the family is a universal social institution founded on biological attributes, and that gender roles within families are the result of such attributes (Anon, 2000).

The positivistic paradigm or positivistic concept can be known as relating to positivism, positive thinkers, positivist doctrine, and positive philosophy. Therefore, a *philosophy* as such is a doctrine contending that sense perceptions are the only admissible basis of human knowledge and precise thought. It will also have the application of this doctrine in logic, epistemology, and ethics. The system of Auguste Comte (1856) is designed to supersede theology and metaphysics and, depending on a hierarchy of the sciences, begins with mathematics and culminates in sociology (Anon, 2005). Any of the several doctrines or viewpoints, often similar to Comte's, emphasises attention to actual practice over consideration of what is ideal: Positivism became the "scientific" base for authoritarian politics. It is also the state or quality of being positive (Anon, 2003).

Some positivistic approaches are characterised by essentialism and seek understanding of cause and effect (forces, determinism). Positivistic approaches also have an "objective" explanation as their goal, and true objectivity is impossible, and every observer is to a degree contaminated by personal, political and ideological sympathies (Anon, 2005).

The emphasis on scientific method leads to the assertion that one can study the social world in the same ways as one will study the physical world. Thus, functionalists see the social world as "objectively real", as observable with such techniques as social surveys and interviews. Furthermore, their positivistic view of social science assumes that study of the social world can be value free, in that the investigator's values will not necessarily interfere with the disinterested search for social laws governing the behaviour of social systems (Anon, 2005).

3.3.3 Market of intellectual resources

The market of intellectual resources refers to assumptions with epistemological status as scientific hypotheses, in other words, with their status as knowledge claims (Mouton & Marais, 1992). It is divided into theoretical and methodological beliefs.

3.3.3.1 Theoretical beliefs

Theoretical beliefs can be described as all beliefs that yield testable results regarding social phenomena (Mouton & Marais, 1992). The following theoretical hypotheses serve as a starting point for this research and are divided into conceptual definitions, models and theories.

A. Conceptual definitions

The relevant conceptual definitions are given below:

Burnout refers to employees' feelings that their physical and mental resources have been exhausted as a result of the continuous striving toward a work-related objective and is often the result of too much work pressure and stress, particularly if the pressure arises from unattainable work goals (Gerber, Nel, & Van Dyk, 1999). Maslach and Pines (1977) state that when there is a case of burnout, employees tend to disengage themselves from customers and their work, therefore changing their attitude from caring to indifference. The Oldenburg Burnout Inventory (OLBI) is a recently developed alternative to the traditionally used Maslach Burnout Inventory (MBI) that was used as a measure of burnout. The OLBI includes both core dimensions of burnout known as exhaustion and disengagement (cynicism/depersonalisation) (Demerouti et al., 2003).

State Ego-resilience is defined as the "positive psychological capacity to 'hounce back' from adversity, uncertainty, conflict, failure, or even positive change, progress and increased responsibility" (Luthans, Avolio, Walumbwa, & Li, 2005. p. 254). Similarly, resilience is described as "the capacity for successful adaptation, positive functioning or competence despite high-risk status, chronic stress, or following prolonged or severe trauma" (Egeland, Carlson, & Sroufe, 1993, p. 517). Individual resilience is often described as a personality

trait, such as "hardiness" (Kobasa, 1982) or "sense of coherence" (Antonovsky, 1987). According to Antonovsky (1987) and Kobasa (1982), resilience as a personality trait includes factors such as the will to live, perception of a situation as challenging, sense of commitment and control, sense of meaning, self-efficacy and learned resourcefulness (Kimhi & Shamai, 2004). Resilience is also the "capacity to withstand exceptional stresses and demands without developing stress-related problems" (Carr, 2004, p. 300). A highly resilient person tends to be creative, change adaptable, and persistent in dealing with adversity, resulting in enhanced performance in the rapid changing and transforming workplace (Luthans et al., 2005).

State self-efficacy is a set of ideas embedded within a more "current" social-cognitive theory of personality (Bandura, 1997, 1999). Perceived self-efficacy refers to beliefs that we hold about our capability of organising and performing tasks within specific domains to effectively lead to specific goals (Carr, 2004). Emotional states are regulated by efficacy beliefs by allowing people to deduce potentially challenging and threatening demands as manageable challenges and by reducing worrying and negative thinking about potential challenges and threats. Efficacy beliefs also regulate emotional states by facilitating coping mechanisms to manage potentially threatening environmental circumstances of problems; by enabling people to seek social support to act as a buffer against stress; and by facilitating the use of self-soothing techniques such as humour, relaxation and exercise to reduce arousal associated with potentially threatening situations (Carr, 2004).

B. Models and theories

A model is aimed at the simplified expression of relationships between main components of a process. It does not only classify phenomena, but also tries to systematise the relationships among them (Mouton & Marais, 1992).

A theory is defined as "a set of interrelated constructs of constructs (concepts), definitions and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena" (Kerlinger & Lee, 2000, p. 11).

3.3.4 Methodological beliefs

Methodological beliefs can be defined as beliefs that make judgements as to the disposition and structure of science and scientific research (Mouton & Marais, 1992). This includes scientific-philosophical traditions and the most important methodological models (qualitative and quantitative).

The measurement concepts which are primarily used in the intrapersonal effectiveness and personality characteristics are based on psychometric principles and technology (Bergh & Theron, 2004). A quantitative approach was followed to gather data on behavioural changes in participants. Measuring instruments that have been used for this research are the *State Ego-resiliency Scale* (ER89), the *State Self-Efficacy Scale* (SSES) and the *Oldenburg Burnout Inventory* (OLBI). Data were interpreted quantitatively (by means of statistical analysis) and also qualitatively.

4. RESEARCH DESIGN

A cross-sectional survey design was used to describe the information on the population collected at that time. According to Crowther, Smit, and Herbst (1994) and McMillan and Schumacher (2001), as cited in Maree (2007, p. 155), in survey research, researchers select samples of respondents before administering questionnaires or conducting interviews to collect information about their attitudes, values, habits, ideas, demographics, feelings, opinions, perceptions, plans and beliefs. This design can also be used to evaluate interrelationships among variables within a population (Shaughnessy & Zechmeister, 1997).

A quantitative survey design (correlational design) (Huysamen, 1993) is used to test the hypothesis of the study. The sample, drawn from the population, is measured on two or more variables at the same point in time, and the relationship between the measurements is determined. Therefore, relationships between the variables are studied with a view to eventual planned intervention. The research is thus descriptive and explanatory (Mouton & Marais, 1992).

5. RESEARCH METHOD

This research, pertaining to the specific objectives, consists of two phases, namely a literature review and an empirical study.

5.1 Phase 1: Literature review

In Phase 1, a complete review regarding the following is done:

- Burnout.
- State ego-resilience.
- State self-efficacy.

In the literature review, the focus is on previous research that has been done on positive psychological capacities (state ego-resilience and state self-efficacy), and burnout.

The following databases were consulted:

- Internet.
- Library catalogues.
- Textbooks.
- Repertorium of journals.
- Ebscohost.
- Emerald.

5.2 Phase 2: Empirical study

Phase 2 consists of the following steps in the form of descriptive research:

5.2.1 Study population

The study population consists of a sample of employees from a business unit within a chemical organisation ($N=450$). The employees are distributed across the various disciplines and functions, such as operations (process and engineering, planning and scheduling, safety, health, environment, risk, quality (SHERQ) section), marketing, logistics, finance, human resources, training and development, technical support group and administration.

5.2.2 Measuring instruments

The following measuring instruments were used in this research:

The *Oldenburg Burnout Inventory* (OLBI) (Demerouti et al., 2003), a recently developed alternative to the traditionally used Maslach Burnout Inventory (MBI), was used as a measure of burnout. The OLBI includes both core dimensions of burnout, known as exhaustion and disengagement (cynicism/depersonalisation). The OLBI consists of 16 items, which are measured on a 4-point Likert-type scale, ranging from "1" (*strongly agree*) to "4" (*strongly disagree*). Eight items are phrased positively, for example "I always find new and interesting aspects in my work" and the remaining eight are phrased negatively, for example "There are days when I feel tired before I arrive at work". The exhaustion subscale, comprising of items 2, 4, 5, 8, 10, 12, 14 and 16, includes items on the affective, physical and cognitive aspects of burnout. The disengagement subscale, comprising of items 1, 3, 6, 7, 9, 11, 13 and 15, includes items that relate to distancing one from one's work. An example of an item from the exhaustion scale would be, "During my work, I often feel emotionally drained", whereas an example of an item from the disengagement scale would be, "I find my work to be a positive challenge". The OLBI, as opposed to the MBI, has an advantage because it includes both positively and negatively worded items within each factor (Halbesleben & Demerouti, 2005). Schaufeli (2003) indicates that in a study conducted by Demerouti et al. (2002), it obtained Cronbach's alpha coefficients of 0,85 (exhaustion) and 0,84 (disengagement) respectively. In a recent study conducted in South Africa among earthmoving equipment employees, Le Roux (2004) found that two factors could be extracted with a different pattern matrix from that which was initially defined by Demerouti et al. (2003). These two factors were labelled engagement, where all the positive items clustered together, and disengagement, where all the negative items clustered together. In this study, the Cronbach's alpha coefficient of engagement was 0,71 and the Cronbach's alpha coefficient of disengagement was 0.82 (Le Roux, 2004). Brand (2006) found a similar factor structure as Le Roux (2004) in the insurance industry but labelled the factors exhaustion and mental distance. She obtained the following alpha coefficients: exhaustion (0.73) and mental distance (0,85).

It is important to note that the OLBI is based on a somewhat different conceptual basis than the MBI. The OLBI attempts to capture more forms of exhaustion, and the nature of burnout is a matter of sustained conceptual and empirical argument. Future research that either

develops clinical cut-off scores based on the OLBI or develops new measures for which cut-off scores are inherent will be valuable to the burnout literature to the extent that they can facilitate treatment and an understanding of the epidemiological impact of burnout (Halbesleben & Demerouti, 2005).

The *Ego-resilience Scale* (ER89) (Block & Kremen, 1996; Klonhlen, 1996), a 14-item self-report inventory scale (e.g. "I am generous with my friends" and "I like to take different paths to familiar places") with a maximum score of 56, was administered and used in determining the amount of state ego-resilience experienced by the employees of the chemical organisation. The measure uses a 4-point Likert scale that ranges from "1" (does not apply at all to me) to "4" (applies very strongly to me). The Cronbach's alpha reliability coefficient for resiliency was 0,84 (Block & Kremen, 1996; Klonhlen, 1996). In a recent South African study Malindi (2007) found a reliable Cronbach's alpha coefficient for resiliency of 0,81.

The items of the *State Self-Efficacy Scale* (SSES) (Schwarzer, 1993) have been reformulated to measure state as opposed to trait self-efficacy. Therefore, an adapted questionnaire will be used to measure a participant's current state of self-efficacy. The original General Perceived Self-Efficacy Scale (GPSES), which consists of 10 items (e.g. "I can always manage to solve difficult problems if I try hard enough" and "I am confident that I could deal efficiently with unexpected events"), was adapted to measure the current state of participants during the here and now. Therefore, the recently adapted SSES consists of 10 items (e.g. "In my current job I am able to solve difficult problems if I try hard enough" and "I am confident that I could deal efficiently with unexpected events in my current job"). All items are scored on a 4-point frequency rating scale ranging from "1" (not at all true) to "4" (exactly true). According to Schwarzer (1993), alpha coefficients of the GPSES vary from 0,75 to 0,90 and it is valid in terms of convergent and discriminant validity. The research of Rothmann and Van Rensburg (2001) illustrated a reliability coefficient of 0.80.

5.2.3 Research procedure

The measuring battery was compiled, and then the purpose of the research was explained prior to handing out the relevant questionnaires to the line managers of the chemical organisation's section, who then co-ordinated the process. It was delivered to a central point, whereby anonymity was guaranteed and maintained. The results were then analysed, and

feedback will be given to the management team of the section once the research has been completed. Thereafter, interventions will be advised accordingly and facilitation will be provided on request.

5.2.4 Statistical analysis

The statistical analysis will be carried out with the SPSS programme (SPSS Inc, 2007). Descriptive statistics (means, standard of deviations, skewness and kurtosis values) will be computed. Furthermore, Cronbach's alpha coefficients will be used as a measure of internal consistency of the measuring instruments. Confirmatory factor analysis will be used to assess the construct validity of the measuring instruments. Pearson's product-moment correlation coefficients will be used to specify the relationships between the variables. A cut-off point of 0,30 (medium effect) is set for the practical significance of correlation coefficients. Regression analysis will also be used to indicate the predictive value of the psychological states with regard to burnout. A cut-off point of $p \leq 0,05$ is set for statistical significance.

6. CHAPTER DIVISION

The chapters in this mini-dissertation are presented as follows:

Chapter 1: Introduction, problem statement and objectives.

Chapter 2: Research article: Resilience, self-efficacy, and burnout of employees in a chemical organisation.

Chapter 3: Conclusions, limitations and recommendations.

7. CHAPTER SUMMARY

In this chapter, the problem statement and motivation were discussed. The general and specific objectives of the research were formulated, and the research method was indicated.

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Resilience, self-efficacy and burnout of employees in a chemical organisation

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ABSTRACT

The objectives of this study were to investigate the relationship between positive psychological capacities (state ego-resilience and state self-efficacy) and burnout levels of employees ($N = 164$) in a chemical organisation and to determine whether state ego-resilience and state self-efficacy can be used to predict burnout levels of employees in a chemical organisation. The Oldenburg Burnout Inventory (OLBI), State Ego-Resilience (ER89) Scale and State Self-Efficacy Scale (SSES) were used as measuring instruments. Practically significant relationships were found between state ego-resilience and burnout, as well as between state self-efficacy and burnout. Furthermore, regression analyses indicated that both state ego-resilience and state self-efficacy held predictive value with regard to burnout.

OPSOMMING

Die doelstellings van hierdie studie was om die verhouding tussen positiewe psigologiese hoedanighede (staat egoveerkragtigheid en staat selfdoeltreffendheid) en uitbrandingsvlakke van werknemers ($N = 164$) in 'n chemiese organisasie te bepaal en om te bepaal of staat egoveerkragtigheid en staat-selfdoeltreffendheid gebruik kan word om die uitbrandingsvlakke van werknemers in 'n chemiese organisasie te bepaal. Die Oldenburg Uitbrandingsvraelys (OLBI), Staat Egoveerkragtigheidskaal (ER89) en die Staat Selfdoeltreffendheidskaal (SSES) is gebruik as meetinstrumente. Betekenisvolle praktiese verwantskappe is gevind tussen staat egoveerkragtigheid en uitbranding, sowel as tussen staat selfdoeltreffendheid en uitbranding. Regressieanalises het verder getoon dat beide staat egoveerkragtigheid en staat selfdoeltreffendheid voorspellingswaarde met betrekking tot uitbranding het.

According to Turner, Barling, and Zacharatos (2002), during the last few decades the organisational environment underwent incredible changes. Among these changes are the increased use of information and communication technology, the rapid expansion of the service sector, the globalisation of the economy, the changing structure of the workforce, the increasing flexibility in the world of work, the creation of the 24-hour economy and the use of new production concepts (e.g. team-based work, telework, downsizing, outsourcing and subcontracting) (Guest, 2004).

The environment in which employees have to function demands more of them than ever before (Rothmann, 2003). Another factor impacting on the world of work is the pervasiveness and urgency of change. Advances in technology lead to the speeding up of the world of work. Speed and flexibility of response form an important basis for a competitive advantage (Guest, 2004). Many organisations have implemented practices that attempt to reduce costs and increase productivity, which often leads to a mentality that favours profitability over the well-being of people (Turner et al., 2002). The numbers employed in many workplaces are also getting smaller (Guest, 2004), and the nature of work has changed from manual work to having significantly more mental and emotional demands, which may leave people angry, demoralised and anxious (Barling, Zacharatos, & Hepburn, 1999; Turner et al., 2002).

As noted by Rothmann (2003), tracking employees' effectiveness in coping with the demands of the new world of work and stimulating their growth in areas that could possibly impact on individual well-being and organisational efficiency and effectiveness are therefore crucial, with burnout and engagement being specific focus areas for research and intervention, both from a pathogenic and fortigenic perspective (Maslach, Schaufeli, & Leiter, 2001).

In the field of psychology, there has been concern and debate throughout the years on the relative emphasis and conceptualisation of the situationally based, state-like psychological capacities versus the relatively fixed, trait-like personality constructs (e.g. Allen & Potkay, 1981). Drawing from positive psychology (Seligman, 1998; Seligman & Csikszentmihalyi, 2000; Snyder & Lopez, 2002), the positive organisational behaviour (POB) approach (Luthans, 2002a; 2002b; 2003) incorporates overlooked state-like positive psychological strengths and capacities such as hope, optimism, resilience and self-efficacy. These positive states may have important implications for *inter alia* employee work motivation (Stajkovic,

2003) and authentic leadership (Avolio, Gardner, & Walumbwa, 2005; Gardner, Avolio, Luthans, May, & Walumbwa, 2005; Luthans & Avolio, 2003).

Psychological well-being refers to the achievement of one's full psychological potential. This construct is central to the humanistic tradition, whereas social well-being refers to positive states associated with optimal functioning within one's social network and community (Carr, 2004).

According to Fredrickson (2002), it was found that there is good evidence that positive mood states broaden thought-action repertoires and that positive emotions and positive affective experiences not only indicate personal well-being but also contribute to personal growth and development (Carr, 2004). Positive mood states help people build enduring and lifelong personal resources and relationships; there are also individual differences in people's capacity to use positive emotions to effectively cope with stressful situations (Carr, 2004).

Maslach and Leiter (1997) described the origins of the disruption in work organisations in terms of less intrinsic worth, global economics, technology, the distribution of power, and failing corporate citizenship. Bandura (1997) notes that, the heightened anxiety creation as a result from job loss, frequent changes or transfers, tends to create feelings of uncertainty and stress for employees. These factors, in turn, produce personal consequences. Individuals feel overloaded, lack control over what they do, are not rewarded for their work, experience a breakdown in community and their social life, are not treated fairly and have to deal with conflicting principles and values (Strümpfer, 2003).

Burnout can be described as growing out of gradual disillusionment in a quest to derive a sense of existential significance from work. It is also stated that "the cause of burnout lies in our need to believe that our lives are meaningful and that the things we do are useful, important, and even heroic" (Pines, 1993, p. 391). People need to believe that they are significant in the larger, cosmic scheme of things, a need that religion could fill. However, owing to the dilution or absence of religion for many, work has become a frequently chosen alternative source of meaning and purpose. This happens particularly in the lives of idealistic and highly motivated individuals "who work hard because they expect their work to make their lives matter in the larger scheme of things and give meaning to their existence"

(Pines, 1996, p. 83). When they fail in these efforts, they burn out. It emerges out of the experience of meaninglessness, but is intertwined with hopelessness (Strümpfer, 2003).

Pines (1993; 1996) were not alone in leaning towards existential significance. Maslach and Leiter (1997, p. 17) indicated that "burnout is the index of the dislocation between what people are and what they have to do. It represents an erosion of values, dignity, spirit and will – an erosion of the human soul". Obviously, this interpretation goes much deeper than the popular view that burnout is the consequence of workaholism or of over-achievement (Strümpfer, 2003).

According to Greenglass (2001), burnout may be described as a state of physical, mental and emotional exhaustion that results from long-term participation in work situations that are emotionally demanding. Burnout is inconsistent with a sense of self-determination or self-efficacy; it diminishes the potential for subsequent effectiveness (Greenglass, 2001). A great deal of research has been devoted to the understanding of factors contributing to burnout and its consequences for individuals. Research indicates that stress and burnout are major factors in the development of both physical and psychological illness (Greenglass, 2001).

Emotional exhaustion is described as feelings of being emotionally overextended; cynicism refers to an indifferent or distant attitude towards work; personal efficacy (confidence) refers to satisfaction with past and present accomplishments and an individual's expectations of continued effectiveness for the future as well as at work (Greenglass, 2001).

There are significant interconnections between the burnout experiences of individuals and the relationships among employees of organisations. There are two related kinds of burnout: isolated or individual burnout and organisational instances of burnout where employees suffer jointly due to destructive organisational forces and interactions that would not have developed in another setting. Various European studies on socially induced and contagious burnout confirmed this phenomenon (Bakker, Demerouti, & Schaufeli, 2000; & Schaufeli, 1999; Bakker, Van Dierendonck, & Schaufeli, 2000; Strümpfer, 2003).

Burnout is a particular, multidimensional and chronic stress reaction that goes beyond the experience of mere exhaustion, and is seen as the final step in a progression of unsuccessful attempts to cope with a variety of negative stress conditions (Rothmann, Jackson, &

Kruger, 2003). According to Maslach et al. (2001, p. 399), burnout is conceptualised as "a psychological syndrome in response to chronic interpersonal stressors on the job". Schaufeli and Enzmann (1998, p. 36) define the concept as "a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterised by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work." Burnout results from the gap between individuals' expectations to fulfil their professional roles and the structures in place within the organisation. When the workplace does not support professional goals, exhaustion and cynicism increase and professional efficacy decreases (Leiter & Harvie, 1998). Therefore, to determine the burnout levels in an organisation, the Oldenburg Burnout Inventory (OLBI) can be used as a measurement instrument (Halbesleben & Demerouti, 2005).

Demerouti, Bakker, Vardakou, and Kantas (2002) have developed and offered initial construct validity evidence for the Oldenburg Burnout Inventory (OLBI). The OLBI is based on a model similar to that of the Maslach Burnout Inventory (MBI); however, it consists only of two scales, namely exhaustion and disengagement. The most current version of the OLBI contains questions that have balanced positive and negative wording (Bakker, Demerouti, & Verbeke, 2004). Furthermore, the OLBI features questions designed to assess cognitive and physical components of exhaustion, consistent with past suggestions in the burnout literature (Pines, Aronson, & Kafry, 1981; Shinn, 1982). This marks a significant advance of the OLBI above the MBI as it captures a broader conceptualisation of burnout that is simply missing from the MBI. The OLBI is similar to the Maslach Burnout Inventory - General Survey (MBI-GS; Schaufeli, Leiter, Maslach, & Jackson, 1996), in that both instruments are designed to reflect a conceptualisation of burnout that is not restricted to human service professions, with questions that apply to any occupational group (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

The more developed employees' positive psychological states become, the higher their psychological capital to draw from dealing with the increasing demands and pressures of today's organisations (Luthans, Avolio, Walumbwa, & Li, 2005). Resilience is defined as the "positive psychological capacity to 'bounce back' from adversity, uncertainty, conflict, failure, or even positive change, progress and increased responsibility" (Luthans, 2002a, p. 702). Work in clinical and positive psychology (e.g. Block & Kremen, 1996; Coutu, 2002; Masten (2001) suggest that highly resilient individuals tend to be more effective in a variety

of conditions threatening the course of life. In the workplace, resilience has been given only surface attention (Hamel & Välikangas, 2003; Horne & Orr, 1998; Reivich & Shatte, 2002). Hans Selye (1936), as the noted international authority on stress and author of the first published scientific paper on stress in 1936, stated, "It is not what happens to you that matters, but how you take it" (Naser & Sandman, 2000, p. 111). In the face of traumatic events, people cope and adapt in varied ways and show varying degrees of resilience (Naser & Sandman, 2000). People who obtain high scores on ego-resilience (Block & Kremen, 1996) show faster cardiovascular recovery following stress than those who obtain low scores, and this recovery is mediated by experiencing positive emotions (Carr, 2004).

Naser and Sandman (2000) indicated that in some studies, ego-resilience has been primarily examined within the perspective of coping with extreme adversity, while others have focused on specific personality domains and/or traits. Over the last decade, the term *resilience* has come into increasing use, most notably focusing on stress resistance. Attempts have been made to understand the protective processes underlying resilience (Naser & Sandman, 2000). Resilience is the capacity to bounce back from adversity, uncertainty, failure, or even positive but seemingly overwhelming changes and challenges such as increased responsibility and accountability. The three recognised components of resilience are: a staunch acceptance of reality; a deep belief, often reinforced by strongly held values, that life is meaningful; and an uncanny ability to improvise and adapt to significant change (Luthans, 2004).

Recently, there have been a few attempts to conceptually link resilience to workplace performance (Coutu, 2002; Sutcliffe & Vogus, 2003; Youssef & Luthans, 2005). As part of the psychological capital, resilience is positively related to performance. This is because highly resilient individuals are likely to be creative, adaptive to change, and persistent in dealing with adversity, resulting in improved performance in the rapidly transforming workplace. Block (1950) identified the role of ego control and ego-resilience in the behaviour of organisations and found strong connections between effective functionality in diverse areas of life and ego-resilience. There are many different definitions for resilience, ego-resilience, but one that recognises the state-like nature of resilience is: "the capability of individuals to cope successfully in the face of significant change, adversity, or risk. This capability changes over time and is enhanced by protective factors in the individual and environment" (Stewart, Reid, & Mangham, 1997, p. 22).

General self-efficacy appears to be a universal construct that yields meaningful relations with other psychological constructs. The self-efficacy concept was developed at the end of the 1970s by Bandura (1977; 1986; 1995), who stated it as the individual's confidence in his or her capability to perform successfully the activities necessary for achievement of the projected goal. This self-perception of the individual is formed in the context of behaviours and develops gradually in an ongoing learning process in which the individual collects information from a variety of sources with regard to the capability to function in various areas. Although Bandura's initial definition focused on individuals' belief in their ability to perform a specific task, he and other researchers expanded the concept, and it was suggested that self-efficacy should be seen as a general characteristic representing an individual's belief in abilities to reach achievements in various areas and to perform well in a variety of tasks (Eden, 1988, 1996; Gardner & Pierce, 1998; Hackett & Betz, 1995). This broad view led to the distinction between situational self-efficacy and general self-efficacy (GSE). Situational self-efficacy refers to the individual's perception of the capability to perform one specific task, a perception that might change in different circumstances (Bandura, 1997). General self-efficacy, on the other hand, refers to the individual's self-beliefs regarding the general and permanent level of ability to perform a wide variety of tasks in different situations (Eden, 1996; Shelton, 1990). For the majority of applications, perceived self-efficacy should be conceptualised in a situation-specific manner (Bandura, 1997). General self-efficacy, however, may explain a broader range of human behaviours and coping outcomes when the context is less specific (Bandura, 1997).

According to Luszczynska, Scholz, and Schwarzer (2005), self-efficacy beliefs influence cognitions and shape behaviours and may also help to deal with stressful circumstances (Bandura, 1997). Self-efficacious individuals focus on their future and develop possible success scenarios of their actions. Therefore, they are expected to be more committed to planning. Self-efficacy has a regulatory function in different health domains, such as adherence to medical recommendations (e.g. adoption of a physically active lifestyle), positive and negative affect, dealing with pain, and coping with stress. Individuals with stronger self-efficacy are more likely to engage in healthy behaviours, to maintain them, and to recover after setbacks (Luszczynska et al., 2005).

State self-efficacy is one's confidence in his or her ability to mobilise the motivation, cognitive resources and courses of action necessary to execute a specific course of action

within a given context (Luthans, 2004). People who are self-efficacious (self-confident) choose challenging tasks and events, extend motivation and effort to accomplish their goals successfully, and persevere when faced with obstacles (Luthans, 2004).

Optimistic self-beliefs about one's own competence create positive affective states instead of negative ones, such as anxiety. Self-efficacious individuals may experience a low level of negative emotions in a threatening situation and, as a result, may feel capable of mastering the situation (Bandura, 1997). Individuals who are burdened with self-doubts suffer distress and negative emotions, such as anxiety and depression. In addition, negative emotions may generate cognitive confusion, leading to worse solutions and health problems (Luszczynska et al., 2005).

According to Luszczynska et al. (2005), perceived self-efficacy represents the confidence that one can use the skills necessary to resist temptation, cope with stress and mobilise resources required to meet situational demands (Bandura, 1997). Once an action has been taken, a person with high self-efficacy invests more effort and persists longer than those who are low in self-efficacy. Therefore, one might expect that the former would select active coping strategies and use fewer strategies that are passive or focused on negative emotions than the latter. People with strong self-efficacy recognise that they are able to overcome the obstacles and focus on opportunities (Luszczynska et al., 2005). Self-efficacy leads to effective and successful problem solving (Luszczynska et al., 2005).

According to Luthans et al. (2005), this newly emerging positive organisational behaviour (POB) is defined as "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" as cited in Luthans (2002b, p. 59). Therefore, to be included as part of positive organisational behaviour (POB), the following criteria must be met: (a) positive, strength-based, and relatively unique to the organisational behaviour field; (b) theory and research-based with valid measures; and, most important for human resource development (HRD); (c) state-like and thus open to development and performance management. Along with other several positive psychology constructs, resilience has been determined to meet these positive organisational behaviour (POB) criteria (Luthans, 2002a; Masten, 1994, 2001; Masten & Reed, 2002; Youssef & Luthans, 2005). Therefore, resilience is having self-efficacious (confidence) to take on the

necessary effort to succeed at challenging tasks, and when overwhelmed by problems and adversity, sustaining and bouncing back to be able to attain success is resilience (Luthans et al., 2005).

According to Maslach (1993), burnout is caused by high job demands that drain the employee's energy, and in an attempt to cope with the resulting exhaustion, the employee withdraws mentally. Obviously, giving too much for too long is energy depleting and leads to exhaustion. According to Rothmann and Rothmann (2006), high scores on burnout usually result from high job demands (such as pace and amount of work, having to remember much detail and/or emotional demands), and/or lacking resources (personal and/or job resources, such as resilience).

The COBE Model indicates two psychological processes, namely an energetic and a motivational process (Rothmann & Cilliers, 2007; Schaufeli & Bakker, 2004). See Figure 1. This COBE Model offers a cognitive–emotional outline for the ability to understand the element of human performance under stress. It continually seeks to gain the performance stability under challenging conditions, which requires the mobilisation and managing of the individual's mental effort. Therefore, when an individual is confronted with high job demands, an active coping response is mainly adaptive in the short term, but is likely to be maladaptive as a regular pattern of response to work or, and if it is continued over a long-standing period, it might exhaust the individual's energy resources.

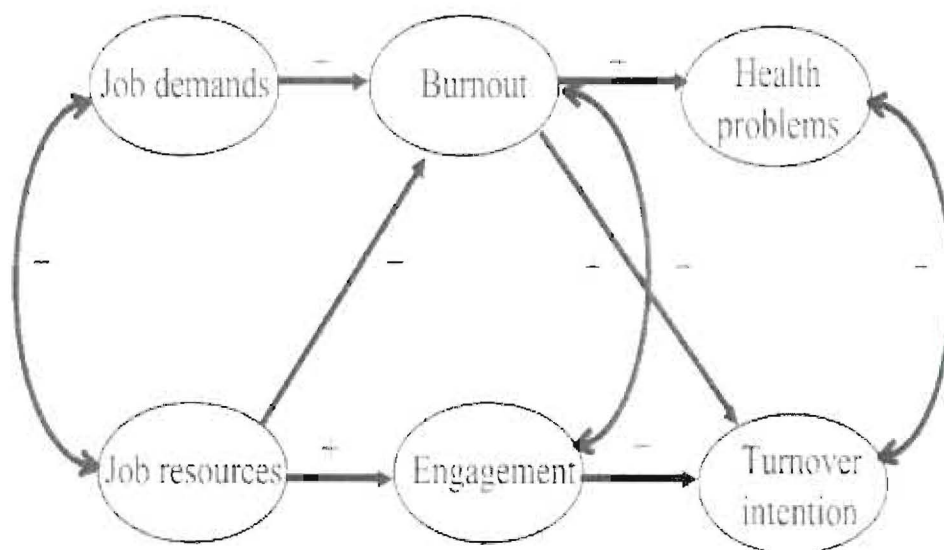


Figure 1. The Comprehensive Burnout and Engagement Model (Schaufeli & Bakker, 2004).

Burnout is caused by high job demands that may drain individuals energy, and in an effort to cope with the consequential exhaustion, the individual withdraws mentally. This may result from giving too much for too long and is energy depleting, which leads to exhaustion and/or lacking resources, e.g. resilience (Maslach, 1993; Rothmann and Rothmann, 2006).

Therefore, it can be hypothesised that the constructs of state ego-resilience and state self-efficacy can be correlated with burnout.

Based on the above-mentioned research problem, the following hypotheses are proposed:

H1: State ego-resilience holds predictive value with regard to burnout.

H2: State self-efficacy holds predictive value with regard to burnout.

METHOD

Research design

A cross-sectional survey design was used to describe the information on the population collected at that time. According to Crowther, Smit, and Herbst (1994) and McMillan and Schumacher (2001), as cited in Maree (2007, p. 155), in survey research, researchers select samples of respondents before administering questionnaires or conducting interviews to collect information about their attitudes, values, habits, ideas, demographics, feelings, opinions, perceptions, plans and beliefs. This design can also be used to evaluate interrelationships among variables within a population (Shaughnessy & Zechmeister, 1997).

Participants

The entire population of 450 employees working in a section of the chemical organisation in the Free State was targeted in this research, although a response rate of only 164 participants (36%) was obtained and utilised. The employees are distributed across the various disciplines and functions, such as operations (process and engineering, planning and scheduling, safety, health, environment, risk, quality (SHERQ) section, marketing, logistics, finance, human resources, training and development, technical support group and administration. The

population includes workers from all levels, ranging from semi-skilled workers to professionals. The employees at the lowest level are of a literacy level adequate enough to allow for the valid completion of the questionnaires. The biographical characteristics of the participants are given in Table 1.

Table 1: *Characteristics of the Participants (N = 164)*

Item	Category	Frequency	Percentage
Home language	Afrikaans	78	48
	English	26	16
	Sotho	38	23
	Xhosa	8	5
	Zulu	10	6
	Other	4	2
	Total	164	100
Marital status	Single	43	26
	Married	94	57
	Divorced	12	7
	Separated	2	1
	Remarried	2	1
	Engaged	11	7
	Total	164	100
Qualification	Up to Grade 11/Std 9	20	12
	Grade 12/Std 10	88	54
	One year Diploma	19	12
	3 year Diploma	18	11
	Degree	10	6
	Honours	7	4
	Masters	2	1
	Doctoral	0	0
	Total	164	100
Tenure	Less than 2 years	44	27
	2 – 4 years	7	4
	5 – 9 years	20	12
	10 – 14 years	29	18
	15 – 19 years	11	7
	20 – 24 years	17	10
	Longer than 25 years	36	22
	Total	164	100
Permanent/ Temporary	Permanent	136	83
	Temporary	28	17
	Total	164	100
Age	<25 years	37	23
	25 – 29	14	9
	30 – 34	26	16
	35 – 39	12	7
	40 – 44	17	10
	45 – 49	23	14
	50 – 54	18	11
	54 +	17	10
	Total	164	100
Gender	Male	137	84
	Female	27	17
	Total	164	100

Table 1 indicates that 23% of the study population were 25 years and younger and 16% were between 30 to 34 years. Regarding educational level, 54% of the study population indicated that they had at least a Grade 12 (Standard 10) qualification, whilst 27% of the participants had been employed in the organisation for less than two years and 22% for longer than 25 years. The sample consisted mainly of Afrikaans-speaking (48%) married (57%) males (84%).

Measuring instruments

The *Oldenburg Burnout Inventory* (OLBI) (Demerouti, Bakker, Vardakou, & Kantas, 2003), the *State Ego-Resilience Scale* (ER89) (Block & Kremen, 1996; Klonhlen, 1996) and the *State Self-Efficacy Scale* (SSES) (Schwarzer, 1993) were used in this study. Biographical information was also gathered regarding home language, marital status, qualifications, tenure, job level, permanent/temporary appointment, age and gender.

The *Oldenburg Burnout Inventory* (OLBI) (Demerouti et al., 2003), a recently developed alternative to the traditionally used Maslach Burnout Inventory (MBI) was used as a measure of burnout. Originally, the OLBI consisted of 15 items, with seven items (three positively worded and four negatively worded) being representative of the exhaustion scale. A sixteenth item has been added recently, however, in order to have an equal number in both subscales. The OLBI includes both core dimensions of burnout, known as exhaustion and disengagement (cynicism/depersonalisation). The OLBI consists of 16 items, which are measured on a four-point Likert-type scale, ranging from "1" (*strongly agree*) to "4" (*strongly disagree*). Eight items are phrased positively, for example "I always find new and interesting aspects in my work" and the remaining eight are phrased negatively, for example "There are days when I feel tired before I arrive at work." The exhaustion subscale comprises of 8 items measuring affective, physical and cognitive aspects of burnout. The disengagement subscale comprises of 8 items that relate to distancing one from one's work. An example of an item from the exhaustion scale would be, "During my work, I often feel emotionally drained", whereas an example of an item from the disengagement scale would be, "I find my work to be a positive challenge." Demerouti et al. (2002) obtained Cronbach's alpha coefficients of 0.85 (exhaustion) and 0.84 (disengagement) respectively. Le Roux (2004), found a reliable Cronbach's alpha coefficients of 0.71 (engagement) and 0.82 (disengagement) respectively in a South African study. In a recent study conducted in South Africa among earthmoving

equipment employees, Le Roux (2004) found that two factors could be extracted with a different pattern matrix from that which was initially defined by Demerouti et al. (2003). These two factors were labelled engagement, where all the positive items clustered together, and disengagement, where all the negative items clustered together. In this study, the Cronbach's alpha coefficient of engagement was 0.71 and the Cronbach's alpha coefficient of disengagement was 0.82 (Le Roux, 2004). Brand (2006) found a similar factor structure as Le Roux (2004) in the insurance industry but labelled the factors exhaustion and mental distance. She obtained the following alpha coefficients: exhaustion (0.73) and mental distance (0.85).

The *State Ego-Resilience Scale* (ER89) (Block & Kremen, 1996; Klonhlen, 1996), a 14-item self report inventory scale (e.g. "I am generous with my friends" and "I like to take different paths to familiar places") with a maximum score of 56, was administered and used in determining the amount of resilience experienced by the employees of the chemical organisation. The measure uses a 4-point Likert scale that ranges from "1" (does not apply at all to me) to "4" (applies very strongly to me). Cronbach's alpha reliability coefficient for resilience was 0.84 (Block & Kremen, 1996; Klonhlen, 1996). In a recent South African study a reliable Cronbach's alpha coefficient for resiliency of 0.81 was found (Malindi, 2007).

The *State Self-Efficacy Scale* (SSES) (Schwarzer, 1993) was used to measure participants' current state of self-efficacy. The SSES consists of 10 items (e.g. "In my current job I am able to solve difficult problems if I try hard enough" and "I am confident that I could deal efficiently with unexpected events in my current job"). All items are scored on a 4-point frequency rating scale ranging from "1" (not at all true) to "4" (exactly true). According to Schwarzer (1993), alpha coefficients of the GPSES vary from 0.75 to 0.90 and it is valid in terms of convergent and discriminant validity. The research of Rothmann and Van Rensburg (2001) illustrates a reliability coefficient of 0.80 for the GPSES. It is the first time that the SSES is being used; hence no reliability statistics are available from previous studies.

Statistical analysis

The statistical analysis was carried out with the SPSS programme (SPSS Inc., 2007). According to Field (2005), Cronbach's alpha measures how well a set of items (or variables) measures a

single one-dimensional latent construct. Cronbach's alpha is not a statistical test - it is a measure of the coefficient of reliability (or consistency) of a scale (Field, 2005). Inter-item correlation coefficients have suggested that the mean of inter-item correlations for a scale provides information about whether that scale is unidimensional or not. More information about the dimensionality of a scale is provided by the frequency distribution function of inter-item correlations (Briggs & Cheek, 1986). Confirmatory factor analyses (which are a version of factor analysis in which specific hypotheses about the structure and the relations between the latent variables that underlie the data is tested) were used to determine the validity and reliability of the state ego-resilience, state self-efficacy and burnout measuring instruments (Field, 2005). Descriptive statistics (means, standard deviations, skewness and kurtosis) were also used to analyse data. The mean indicates the average score obtained by the research group on each measuring instrument, and the standard deviation indicates the extent to which individual scores differ from the mean obtained. In terms of skewness and kurtosis, the values must ideally be as close as possible to zero. Skewness is a measure of "lack of symmetry". A distribution or data is a measure that describes how far the distribution deviates from symmetry. If the data set is spread to the left (or negatively skewed) and if it is more spread to the right (or positively skewed) of the centre point. Kurtosis indicates whether a data set is 'peaked' or 'flat' relative to a normal distribution. Data sets with high kurtosis tend to have a distinct peak near the mean, decline rather rapidly, and have heavy tails. Data sets with low kurtosis tend to have a flat top near the mean rather than a sharp peak (Maree, 2007).

The Pearson product moment correlation coefficients (is a standardised measure of the strength of relationship between two variables) were determined to indicate the extent to which one variable is related to another. Regression analyses (simple regression is a linear model in which one variable or outcome is predicted from a single predictor variable, and multiple regression is an extension of simple regression whereby it is a linear combination of two or more predictor variables) were used to determine the amount of predictive value that the independent variables hold in terms of the dependent variables (Field, 2005).

RESULTS

Construct validity of the measuring instruments

A simple Principal Component Analysis was conducted on the 14 items of the Ego-Resiliency (ER89) scale. Analysis of Eigenvalues and the scree plot indicated that one factor, explaining 33,47% of the variance could be extracted. All communalities and loadings of items on factors fell at an acceptable level. A simple Principal Component Analysis of the State Self-efficacy Scale (SSES) indicated that one factor, explaining 51,36% of the variance could be extracted, with all communalities and item loadings falling at an acceptable level.

Lastly, a Principal Component Analysis of the Oldenburg Burnout Inventory (OLBI) inventory was performed. Analysis of Eigenvalues and scree plot confirmed a two-factor structure, which explained 35,95% of the variance. Next, a principle axis factor analysis was followed using a Direct Oblimin rotation to perform further factor analysis.

The results of the factor analysis on the OLBI are indicated in Table 2. The loading of variables on factors, as well as communalities and percentage of variance, is indicated.

Table 2

Factor Loadings, Communalities (h^2), Percentage Variance for Principal Factors Extraction and Direct Oblimin Rotation on OLBI Items

Item	F ₁	F ₂	h^2
1. I always find new and interesting aspects in my work	0,18	0,61	0,65
2. There are days when I feel tired before I arrive at work	0,26	0,22	0,49
3. It happens more and more often that I talk about my work in a negative way	0,39	0,39	0,54
4. After work, I tend to need more time than in the past in order to relax and feel better	0,08	0,21	0,61
5. I can tolerate the pressure of my work very well	0,66	0,02	0,65
6. Lately, I tend to think less at work and do my job almost mechanically	0,64	0,07	0,61
7. I find my work to be a positive challenge	0,38	0,43	0,44
8. During my work, I often feel emotionally drained	0,51	0,07	0,71
9. Over time, one can become disconnected from this type of work	0,53	0,16	0,50

10. After working, I have enough energy for my leisure activities	-0,40	0,58	0,59
11. Sometime I feel sickened by my work tasks	0,69	-0,01	0,72
12. After my work, I usually feel worn out and weary	0,50	0,07	0,50
13. This is the only type of work that I can imagine myself doing	-0,37	0,16	0,60
14. Usually, I can manage the amount of my work well	0,53	-0,01	0,72
15. I feel more and more engaged in my work	0,09	0,70	0,62
16. When I work, I usually feel energized	-0,01	0,83	0,70
Percentage variance explained	25,86	10,09	

Items 5, 6, 8, 9, 11, 12, 13, and 14 loaded on the first factor, with items 1, 15, 16 loading on the second factor. Items 2 and 4 loaded poorly on both factors, whereas item 3, 7, and 10 loaded heavily on both factors. The factor loadings as obtained in this study do not correspond with the intended factor structure (Demerouti et al., 2003) or any previous South African studies (e.g. Bosman, 2005; Brand, 2006; Le Roux, 2004). Given the purpose of the factor analyses, which was to do a confirmatory as opposed to an exploratory factor analyses, no items were removed, nor was an attempt made to rename the subscales of the OLBI. Given the poor factor structure use was only made of the total OLBI scale in subsequent analyses.

The descriptive statistics, alpha coefficients and inter-item correlations of the one factor of the ER89 Scale, one factor of the SSES and one factor of the OLBI are indicated in Table 3.

Table 3

Descriptive Statistics, Cronbach's Alpha Coefficients and Inter-item Correlation Coefficients of the Measuring Instruments (N=164)

Items	Mean	SD	Skewness	Kurtosis	Inter-item r	α
Ego-resilience	2,95	0,46	-0,18	-0,53	0,27	0,84
State self-efficacy	3,08	0,57	-0,29	-0,72	0,45	0,89
Total burnout	2,31	0,34	0,04	1,40	0,03	0,76

Table 3 indicates that acceptable Cronbach's alpha coefficients varying from 0,76 to 0,89 were obtained. These alpha coefficients compare reasonably well with the guideline of 0,70 (0,55 in basic research), demonstrating that a large portion of the variance is explained by the dimensions (internal consistency of the dimensions) (Nunnally & Bernstein, 1994). Sometimes it is found

that although a scale presents with good internal consistency, a too high average inter-item correlation coefficient is obtained, suggesting that the high Cronbach's alpha may be a function of all items included being overly similar. The average inter-item correlation coefficients of both the ego-resilience scale and the state self-efficacy scale were considered acceptable compared to the guideline of $0,15 \leq r \leq 0,50$ (Clark & Watson, 1995), suggesting that the items included in the respective scales are not overly diverse or similar. The inter-item correlation coefficients of the OLBI were found to be somewhat low, falling below 0,15. Practically, this means that the individual items included in the OLBI may be somewhat diverse (Nunnally & Bernstein, 1994).

Pearson's product moment correlations were used to determine the degree to which one variable is related to another. The correlation coefficients between the various constructs measured in this research are indicated in Table 4.

Table 4

Product-Moment Correlation Coefficients between the ER89, SSES, and OLBI

Item	1	2	3
1. State Ego-Resilience	.	.	.
2. State Self-Efficacy	0.65 ^{**†}	.	.
3. Burnout (OLBI)	-0.40 ^{†*}	-0.45 ^{†*}	.

+ Statistically significant $p \leq 0.01$

* Correlation is practically significant $r > 0.30$ (medium effect)

** Correlation is practically significant $r > 0.50$ (large effect)

From Table 4, it can be seen that state ego-resilience and burnout presented with a practically significant negative correlation of medium effect. State self-efficacy and burnout also presented with a practically significant negative correlation of medium effect.

The results of a multiple regression analysis with burnout as dependent variable and demographic variables and ego-resilience as independent variables are reported in Table 5. Demographic variables were entered as control variables in the first step and state ego-resilience in the second.

Table 5

Regression Analysis – Demographic Variables and State Ego-resilience: Burnout

ANALYSIS OF VARIANCE					
Model 1: Demographic variables					
$R: 0,33$	Source of variation	df	Sum of	Mean	
$R^2: 0,11$			squares	Square	
Adjusted $R^2: 0,07$	Regression	7	14,32	2,05	
Standard Error: 0,88	Residual	148	114,02	0,77	
$F = 2,66 \quad p = 0,013$					
Model 2: Demographic variables and Ego-resilience					
Demographic variables	Source of variation	df	Sum of	Mean	
Ego-resilience			squares	Square	
$R: 0,49$	Regression	8	30,92	3,87	
$R^2: 0,24$	Residual	147	97,43	0,66	
Adjusted $R^2: 0,20$	$F = 5,83 \quad p = 0,000$	237	57,75	0,24	

Model 1:	VARIABLES IN THE EQUATION				
INDEPENDENT VARIABLES	B	SEB	Beta	t	p
Age	-0,05	0,07	-0,13	-0,69	0,49
Qualifications	0,15	0,08	0,22	1,76	0,08
Gender	-0,05	0,21	-0,02	-0,23	0,82
Marital status	0,03	0,06	0,04	0,45	0,65
Language	-0,07	0,06	-0,10	-1,22	0,23
Years service	-0,05	0,07	-0,12	-0,67	0,50
Job level	-0,10	0,07	-0,21	-1,47	0,14

Model 2:	VARIABLES IN THE EQUATION				
INDEPENDENT VARIABLES	B	SEB	Beta	t	p
Age	-0,02	0,06	-0,05	-0,27	0,79
Qualifications	0,18	0,08	0,27	2,31	0,02*
Gender	-0,07	0,19	-0,03	-0,35	0,73
Marital status	0,05	0,06	0,06	0,82	0,41
Language	-0,03	0,05	-0,05	-0,62	0,54
Years service	-0,05	0,07	-0,13	-0,81	0,42
Job level	-0,12	0,07	-0,24	-1,88	0,06
Resilience	-0,74	0,15	-0,37	-5,00	0,00*

* Statistically significant difference: $p \leq 0,05$

In Step 1, it can be seen that none of the demographic variables delivered statistically significant p -values. In Step 2, the p -value of qualification became statistically significant, implying that the impact of qualification on burnout might run through resilience. Resilience delivered a statistically significant p -value. The adjusted R^2 increased from 7% in Step 1 to 20% in Step 2, suggesting that ego-resilience predicts 13% of the variance in burnout, thus lending support to hypothesis 1.

The results of a multiple regression analysis with burnout as dependent variable and demographic variables and state self-efficacy as independent variables are reported in Table 6. Demographic variables were entered as control variables in the first step and self-efficacy in the second.

Table 6

Regression Analysis – Demographic Variables and State Self-efficacy: Burnout

ANALYSIS OF VARIANCE					
Model 1: Demographic variables					
$R: 0.34$	Source of variation	df	Sum of	Mean	
$R^2: 0,11$			squares	Square	
Adjusted $R^2: 0,07$	Regression	7	14,60	2,09	
Standard Error: 0,87	Residual	150	114.17	0.77	
	$F = 2,74 \quad p = 0.010$				
Model 2: Demographic variables and Self-efficacy					
Demographic variables	Source of variation	df	Sum of	Mean	
Self-efficacy			squares	Square	
$R: 0.50$	Regression	8	32.62	4.08	
$R^2: 0.25$	Residual	149	96.15	0.65	
Adjusted $R^2: 0,21$	$F = 6,32 \quad p = 0.000$	237	57.75	0.24	
Standard Error: 0,80					
Model 1: VARIABLES IN THE EQUATION					
INDEPENDENT VARIABLES	B	SEB	Beta	t	P
Age	-0.05	0.07	-0.13	-0.74	0.46
Qualifications	0.15	0.08	0.23	1.84	0.07
Gender	-0.07	0.20	-0.03	-0.33	0.75

Marital status	0,03	0,06	0,04	0,45	0,65
Language	-0,07	0,06	-0,10	-1,23	0,23
Years service	-0,05	0,07	-0,12	-0,69	0,50
Job level	-0,10	0,07	-0,21	-1,50	0,14

Model 2:	VARIABLES IN THE EQUATION				
INDEPENDENT VARIABLES	B	SEB	Beta	<i>t</i>	<i>p</i>
Age	0,03	0,43	0,08	0,50	0,70
Qualifications	0,19	0,06	0,30	2,54	0,01*
Gender	-0,03	0,19	-0,01	-0,16	0,90
Marital status	0,04	0,06	0,05	0,65	0,52
Language	-0,04	0,05	-0,06	-0,79	0,43
Years service	-0,05	0,06	-0,13	-0,81	0,42
Job level	-0,15	0,06	-0,30	-2,34	0,02*
Self-efficacy	-0,66	0,13	-0,42	-5,30	0,00*

* Statistically significant difference $p \leq 0,05$

In Step 1, it can be seen that none of the demographic variables delivered statistically significant p -values. In Step 2, the p -value of qualification and job level became statistically significant, implying that the impact of qualification and job level on burnout might run through self-efficacy. Self-efficacy delivered a statistically significant p -value. The adjusted R^2 increased from 7% in Step 1 to 21% in Step 2, suggesting that state self-efficacy predicts 14% of the variance in burnout, thus lending support to hypothesis 2.

DISCUSSION

The objectives of this research were to examine the relationship between positive psychological capacities (state ego-resilience and state self-efficacy) and burnout levels of employees in a chemical organisation and to determine whether state ego-resilience and state self-efficacy can be used to predict burnout levels of employees in a chemical organisation.

Results obtained in this study confirmed the internal consistency and one-dimensional structures of both the state ego-resiliency and state self-efficacy measuring instruments. Although the two dimensional structure of the OLB1 was confirmed, the item loadings did not correspond with the intended factor structure (Demerouti et al., 2003) or any previous South African studies (Bosman, 2005; Brand, 2006; Le Roux, 2004). Bosman (2005) and

Le Roux (2004) both found that the OLBI items tend to cluster into engagement (all positively phrased items) and disengagement (all negatively phrased items) scales, whereas Brand (2006) found exhaustion and mental distance subscales. Consequently, only the total burnout scale (which presented with adequate internal consistency) was used in this study.

Burnout is caused by high job demands (such as pace and amount of work, having to remember much detail and/or emotional demands), and/or lacking resources (personal and/or job resources, such as resilience) (Maslach, 1993; Rothmann & Rothmann, 2006). According to Rothmann and Rothmann (2006), employees who have less resilience are more inclined to perceive high job demands and a lack of resources, and to experience more distress and less eustress. People who are self-efficacious (self-confident) choose challenging tasks and events, extend motivation and effort to successfully accomplish their goals, and persevere when faced with obstacles (Bandura, 1986). For this reason, it is hypothesised that both state ego-resilience and state self-efficacy hold predictive value with regard to burnout.

The results of this study confirm significant statistical and practical relationships between state ego-resilience and burnout, as well as between state self-efficacy and burnout. The regression analyses indicate that both state ego-resilience and state self-efficacy hold predictive value with regard to burnout. Based on these findings, both hypotheses 1 and 2 can be accepted.

LIMITATIONS

This study had several limitations. Vos, Strydom, Fouché, and Delport (2007) suggest that a response rate of 100 (20%) to a total sample of 500 is sufficient for controlling for sampling errors. Therefore, the overall response rate of 164 (36.4%) to a total sample of 450 can be considered acceptable. Nevertheless, the size and the scope of the sample may be considered a limitation that placed restrictions on the statistical analyses that could be conducted, as well as the generalisability of the research findings.

Regarding research design, future studies should focus on longitudinal and experimental designs where causal inferences can be made and interventions can be tested. Cross-sectional designs do not allow one to determine the direction of the relationship between the variables (Kerlinger & Lee, 2000). The sample for the research should also be extended to include employees working in various other geographical locations and industry niches.

Despite the limitations, this study has made an empirical contribution in helping to understand the relationships between state ego-resilience, state self-efficacy and burnout among employees of a chemical organisation. This study has also helped to lay a foundation for future research efforts, both with regard to further exploration of relationships and development of instruments for measuring these positive psychological capacities (state ego-resilience and state self-efficacy), and research regarding potential mechanisms for increasing positive organisational capacities in the workplace and the impact thereof on dimensions of work wellness.

RECOMMENDATIONS

The old adage states "prevention is better than cure". This notion is in line with the emergent positive psychology perspective, which emphasises human strengths in managing stress rather than trying to heal the damage (Iwasaki, Mactavish, & Mackay, 2005, as cited by Seligman & Peterson, 2003).

According to Luthans (2004), there is a general misconception that resilience is an extraordinary gift; a magical, mystical, rare capacity; a trait that results only from genetic or long-term environmental variables; or a "super material" that distinguishes survivors from failures. Resilience is a lifelong developmental journey that people undertake in daily, progressive steps. Resilience is a process, rather than an end goal (Luthans, 2004).

Masten (1994) presented the following ten protective factors that play a role in resilience: effective parenting; connections to other competent adults; appeal to other people, mainly adults; good intellectual skills; areas of talent or accomplishment valued by self and others; self-efficacy, self-worth, and hopelessness; religious faith or affiliations; socio-economic advantages; good schools and other community assets; and good fortune. Similarly, the

protective factors held in common in predicting resilience include higher intelligence scores; good positive relationships with peers, employees, colleagues, parents, and teachers; and healthy coping mechanisms as manifested during childhood (Johnson & Wiechelt, 2004).

In order to develop resilience, organisations can adapt three strategies recommended by Masten (1994): asset-focused, risk-focused, and process-focused. Risk-focused strategies concentrate on reducing the risks and stressors that can increase the productivity of undesired outcomes. Organisations can offer healthcare benefits, wellness programmes and employee assistance programmes in order to reduce the likelihood of physical and psychological risks such as health problems, stress, burnout and alcohol and drug abuse. With regard to asset-focused strategies, emphasise and enhance resources that increase the probability of positive outcomes despite the presence of risks. Therefore, the development of human, social and positive psychological capital of managers and employees can equip them better to deal with setbacks at the personal and organisational levels. Finally, process-focussed strategies involve the mobilisation of the power of the adaptation systems necessary for the utilisation of one's inventory of assets to manage emerging risk factors. It is to enhance an organisation's preparedness to deal with crises through effectively capitalising on its human and material resources to flexibly and swiftly adapt to new realities (Luthans, 2004).

As research on organisational resilience progresses, more guidelines will emerge. Knowledge of organisational resilience principles and theory should help organisations and researchers to gain a deeper understanding of how to build resilient organisations with people who are indeed resilient. By learning from the many research streams on resilience, we can derive principles for managing resilient behaviour in organisations (Mallak, 1998).

Mallak (1998, p. 13) proposes the following principles to foster resilience:

- Perceive experience constructively. Even if the experience causes pain, find the positive angle and move forward.
- Perform positive adaptive behaviour. Perceive change as an opportunity, not danger. Allow responses to adapt to the needs of the situation rather than execute ineffective "programmed" responses.

- Ensure adequate external resources. Ensure access to adequate resources to allow positive adaptive response to approach a wide variety of possible events.
- Expand decision-making boundaries. Provide greater decision-making authority to support positive adaptive responses and the use of resources to achieve the objective.
- Practise bricolage. Develop the ability to create solutions on the spot using materials on hand.
- Develop tolerance for uncertainty. Develop the ability to make decisions with less than the desired amount of information.
- Build virtual role systems. In a team, individuals have a shared understanding of the team's mission and can fill in wherever needed to ensure smooth functioning of the team.

According to Mallak (1998), in order to build a resilient organisation, implementation of these principles in a variety of conditions with the objective of improving the organisation and its work environments is recommendable.

However, Johnson and Wiechelt (2004) mention that a protective factor for a group of individuals may not necessarily be a protective factor for other individuals or even the same group in a different framework. As the world shrinks, attempting to understand to what degree the effects of self-efficacy are universal across cultures seems more critical than ever. Cross-cultural research will help clarify how efficacy beliefs are created and shaped and developed as a result of different cultural practices (Pajares, 2006).

According to Bandura (1997), self-efficacy also develops through observing others succeed through sustained effort (vicarious experience). People's self-efficacy beliefs may be strengthened if they are persuaded that they can succeed and then given manageable challenges that confirm their coach's persuasive exhortations (social persuasion). Finally, people's self-efficacy beliefs are enhanced by pursuing goals when physically fit and in a positive mood (physical and emotional states).

Also, further studies should be expanded to include other relevant constructs such as job demands and resources, job satisfaction, organisational commitment, performance, absenteeism, health and turnover. The more developed people's positive psychological states

become, the higher their psychological capital to draw from in dealing with the increasing demands and pressures of today's challenging organisations. According to Luthans et al. (2005), leaders can invest in, build and improve psychological capital through encouraging learning among employees and adjusting to organisational change and challenges (Luthans, 2002a, 2002b, 2003; Luthans & Avolio, 2003; Luthans & Jensen, 2002; Luthans & Youssef, 2004).

Positive psychological capital requires a transformed organisational ideology that views employees through a positive lens as confident (self-efficacious), hopeful, optimistic and resilient (Luthans, 2004). This psychological capital, which is largely untapped, can be developed and managed toward long-term success and competitiveness. For example, self-efficacy is a domain-specific psychological capacity. New employees who may have been self-efficacious in their previous jobs will not necessarily be confident in their new jobs, unless proactive developmental efforts are extended on the part of themselves and their managers and peers to enhance self-efficacy in their new jobs (Luthans, 2004).

The Oldenburg Burnout Inventory (OLBI) (Demerouti et al., 2003) is a more recently developed alternative to the Maslach Burnout Inventory (MBI). The OLBI presented with item loadings that did not correspond with the originally intended factor structure as per the Demerouti et al. (2003) design, which appears to be the case in other South African studies as well. More research is required into the use of the OLBI in a South African context.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this chapter, conclusions regarding the literature study and the results of the empirical research are made. Shortcomings of the research are presented, and recommendations for the industry and future research are suggested.

3.1 CONCLUSIONS

Conclusions regarding the specific theoretical objectives and the results of the empirical research are made.

3.1.1 Conclusions regarding the specific theoretical objectives

The general objective of this research was to examine the relationship between state ego-resilience, state self-efficacy and burnout. The first objective was to conceptualise state ego-resilience, state self-efficacy and burnout and the second objective was to determine the relationships between these constructs according to the literature.

Resilience is the capability to rise above adversity and create long-lasting strengths in any situation (Engel, 2007). Key to resilience is a rebound from troubles in childhood and the emergence of strong and healthy adult years later, which enables a person to lead a full and gratifying life. Resilient individuals tend to walk a long path and have strengths within them. These very strengths can help them to cope with the difficulties, problems and challenges of today. These individuals thrive despite crushing hardship, heartache and bounce back from obstacles with strength, courage and problem-solving skills.

Basically, resilience refers to recuperation, but it could also include the constructive and growth-enhancing consequences of challenges or adversity. The term "thriving" is used by some authors (e.g. Carver, 1998) for a situation in which the individual does not only return to a previous level of functioning but somehow surpasses it. In the case of recovering from burnout, it would clearly be a matter of resiliency, whereas averting or surpassing it may turn out to be thriving (Strümpfer, 2002).

Coutu (2002) stated that many of the early theories about resilience stressed the role of genetics. The argument was that some people are just born resilient. There is some truth to that, but an increasing body of empirical evidence shows that resilience – whether in children, adults, survivors of ‘concentration camps’ or businesses/organisations back from the verge of failure – can be learned (Coutu, 2002). Resilient people possess three characteristics: a staunch acceptance of reality; a deep belief, often embedded by strongly held values and beliefs, that life is meaningful and purposeful; and an uncanny ability to improvise. People can bounce back from hardship with just one or two of these qualities, but will truly only be resilient with all three. These three characteristics also hold true for resilient organisations (Coutu, 2002).

Self-efficacy draws from the extensive theory and research of Albert Bandura, and is defined as “one’s confidence in his or her ability to mobilize the motivation, cognitive resources, and courses of action necessary to execute a specific course of action within a given context” (Luthans & Youssef, 2004, p. 20).

According to Luthans, Vogelgesang, and Lester (2006), some positive psychology constructs may serve as conduits to develop and/or moderate one’s resilience capacity; nowhere is this more apparent than in the relationship between resilience and efficacy (confidence) (Prilleltensky, Nelson, & Peirson, 2001). Efficacy, as described by Bandura (1997), is the belief that a person has to successfully perform a specific task and as a factor of psychological capital have the self-belief to take on and put in the necessary effort to succeed at tough and challenging responsibilities and tasks. The more confident and efficacious people are in task accomplishment; the more likely it is that they have a pathway to resilience in which they structure a negative event or failure as a learning and development experience. Bandura (1997, p. 3) notes that efficacy influences one’s “resilience to adversity”. Thus, the proactive, process-focused development of resilience relies heavily on Bandura’s conception of efficacy, but the reactive use of resilience draws upon other mechanisms or pathways in order to move past adverse events. Resilience allows people to keep trying and to restore their self-efficacy even after it has been challenged and predicted to decrease due to setbacks (Luthans, Youssef, & Avolio., in press; Youssef & Luthans, 2005).

Since research has established a clear and important link between beliefs regarding one’s abilities and outcomes in important domains such as academics, home environment and peer

relationships, the positive improvement in self-efficacy beliefs demonstrated in this study suggests potential value in the promotion and attainment of wellness activities (Steese et al., 2006).

According to Strümpfer (2002), individuals experience burnout when they perceive a net loss, which cannot be replenished, of personal resources, specifically physical vigour, emotional robustness, and cognitive agility. This net loss is experienced in response to external demands (stressors), and cannot be compensated for by expanding or borrowing other resources or in other ways in attempts to replenish the original loss. A burnt-out person may aggravate his or her losses by entering an escalating spiral of losses. Then he or she may reach an advanced stage of burnout in which hopelessness, helplessness, depression and anxiety become the predominant emotions.

Halbesleben and Demerouti (2005) describe that burnout was conceptualised as a psychological syndrome characterised by a chronic, negative work-related state of mind that occurs in response to continual interpersonal work stressors. Within the theoretical framework of the OLBI, which was used as a measure of burnout in this research, burnout was conceptualised as a two-dimensional construct consisting of the subscales exhaustion and disengagement (Halbesleben & Demerouti, 2005). Exhaustion was defined as relating to extensive and intense physical, affective and cognitive strain as a result of prolonged contact to specific work conditions/stressors. The disengagement scale was conceptualised as relating to emotions regarding work tasks, as well as to a devaluation and mechanical execution of one's work (Halbesleben & Demerouti, 2005).

Hobfoll (1988, 1989) described burnout as growing out of a gradual disillusionment in pursue to develop a sense of existential significance from work. She wrote, "The cause of burnout lies in our need to believe that our lives are meaningful and that the things we do are useful, important, and even heroic" (Pines, 1993, p. 391). We need to believe that we are significant in the larger, cosmic scheme of things, a need that can be filled by faith and religion. However, in the absence or dilution of faith and religion for many, work has become a commonly chosen alternative source of purpose and meaning. This happens particularly in the lives of idealistic and highly motivated individuals "who work hard because they expect their work to make their lives matter in the larger scheme of things and give meaning to their

existence" (Pines, 1996, p. 83). When they fail in these efforts, they burn out (Strümpfer, 2002).

Burnout is caused by high job demands (such as pace and amount of work, having to remember much detail and/or emotional demands), and/or lacking resources (personal and/or job resources, such as resilience) (Maslach, 1993; Rothmann & Rothmann, 2006). According to Rothmann and Rothmann (2006), employees who have less resilience are more inclined to perceive high job demands and a lack of resources, and to experience more distress and less eustress. People who are self-efficacious (self-confident) choose challenging tasks and events, extend motivation and effort to successfully accomplish their goals, and persevere when faced with obstacles (Bandura, 1986). For this reason, it is hypothesised that both state ego-resilience and state self-efficacy hold predictive value with regard to burnout.

3.1.2 Conclusions regarding the specific empirical objectives

The third objective was to determine the internal consistency and construct validity of the measuring instruments of the constructs. Results obtained in this study confirmed the internal consistency and one-dimensional structures of both the state ego-resilience and state self-efficacy measuring instruments. Although the two-dimensional structure of the OLBI was confirmed, the item loadings did not correspond with the expected factor structures. Consequently, only the total burnout scale (which presented with adequate internal consistency) was used.

The fourth objective was to examine the relationship between state ego-resilience and state self-efficacy and burnout within a sample of employees in a chemical organisation. Results indicated that higher levels of state ego-resilience are associated with lower levels of burnout. Similarly, higher levels of state self-efficacy were found to be related to lower levels of burnout. The fifth and sixth objective was to determine whether state ego-resilience and state self-efficacy can be used to predict burnout levels. Regression analyses indicate that both state ego-resilience and state self-efficacy held predictive value with regard to burnout. Consequently, hypotheses 1, which states that state ego-resilience holds predictive value with regard to burnout, and hypotheses 2, which states that state self-efficacy holds predictive value with regard to burnout, were accepted.

3.2. LIMITATIONS OF THE RESEARCH

Vos, Strydom, Fouche, and Delport (2007) suggest that a response rate of 100 (20%) to a total sample 500 is sufficient for controlling for sampling errors. Therefore, with the overall response rate of 164 (36,4%) to a total sample of 450, the sample can be considered acceptable. Nevertheless, the size and the scope of the sample may be considered a limitation that placed restrictions on the statistical analyses that could be conducted and the generalisability of the research findings.

This research was conducted in a specific geography and industry that probably possess certain unique characteristics and influences. These characteristics (as well as cultural influences) could have influenced the participants' perceptions and responses. By implication, the results cannot be generalised to other contexts or professions.

The cross-sectional design does not allow for relationship directionality to be determined between variables (Kerlinger & Lee, 2000). A further limitation of this study was its dependence on self-reporting measures. A number of participants also may have doubted the confidentiality with which their responses were handled, which may have influenced a proportion of the resultant outcomes.

3.3 RECOMMENDATIONS

Recommendations are made below with regard to the applicable industry and with regard to future research.

3.3.1 Recommendations for the industry

Unlike positive psychology, positive organisational scholarship or many human resource management approaches that emphasise factors such as positive personality traits and individual differences, positive organisational behaviour (POB) focuses on state-like (as opposed to dispositional, fixed and trait-like) variables that can be developed within members of organisations through workplace interventions and proactive management. Moreover, positive organisational behaviour (POB) incorporates only psychological states that are validly measurable and that can result in performance improvement. Interventions can be

developed for enhancing managers' and employees' resilience, efficacy (confidence), hope, and optimism. Thus, positive psychological capital can be managed and its effectiveness can be objectively assessed, both in terms of enhanced positive psychological capital (PPC) and bottom line impact and results. Similar to traditional forms of capital, positive psychological capital can be assessed as to the return of investment and impact on competitive advantage (Luthans, 2004).

The findings of this study suggest a negative relationship of state ego-resilience and state self-efficacy to burnout. Research by Bandura (1997) has clearly demonstrated that self-efficacy can be increased in four key ways. The most observable way is through enactive mastery (when there are direct experiences that are successful in the training context or on the job), vicarious learning (through modelling in a training context or on the job through mentoring/shadowing programmes), simple verbal persuasion and social support for lower level jobs and strategic development for higher level jobs. Therefore, organisations may transform by providing their employees learning tools to enable them to adapt to any situation, thus stimulating state ego-resilience and state self-efficacy. Such tools may comprise of interventions so that they can be equipped to stimulate state ego-resilience and state self-efficacy; such as leadership skills, personal insight workshops, performance management workshops, diversity management and visionary workshops, adult learning and development processes, coaching and experiential learning.

Luthans and Peterson (2002) make various suggestions on how to improve manager state self-efficacy. They suggest guided mastery, which includes instructive modelling to acquire a skill or competency, guided skill perfection, and then transferring the training back to the work situation to ensure self-directed managerial success. As for the more complex situations that are on the increase in the modern workplace, there are ways to boost a manager's efficacy for decision making and problem solving. This is referred to as cognitive mastery modelling so as to learn thinking skills and how to apply them by observing the decision rules and reasoning strategies. Successful models are in use that will enable managers to find solutions to problems and be able to make effective and sustained decisions. One study taught managers how to generate new ideas to improve the quality of organisational functioning and customer focus by providing them with guidelines and practice in innovative problem solving (Gist, 1989). Luthans and Peterson (2002) also suggest the learning and development of self-regulatory competencies (i.e. self-motivation or self-management). The development of this

increasingly important self-management involves a variety of interlinked self-referent processes such as self-efficacy appraisal, personal goal-setting, self-monitoring, and use of self-motivation incentives. In other words, both employee engagement and manager self-efficacy can be developed, and, as this study has shown, each can positively affect the other to lead in a synergistic, strengthening manner to better, more effective management and leading of today's employees (Luthans & Peterson, 2002).

According to Knight (2007), resilience as a state indicates a set of personal characteristics associated with healthy development. Benard (1991), as cited in Wolin and Wolin (1993), proposes a three-dimensional framework for resilience:

- Emotional competence.
- Social competence.
- Being future oriented.

Research has identified a number of qualities required to develop emotional competence, including having a positive self-concept and an internal locus of control, being autonomous and possessing a sense of humour. Research also suggests that when people have supportive relationships with people in their lives, they are more resilient when faced with challenges and hardship. Therefore, being future-oriented means having a clear sense of purpose and feeling that one's life has meaning, a sense of optimism, the ability to engage in problem solving situations and critically reflect on situations, and also the ability to be flexible and adaptive in new situations (Knight, 2007).

Masten (2001) suggests that, in order to develop resilience, organisations can adapt three recommended strategies: asset-focused, risk-focused, and process-focused. Risk-focused strategies concentrate on reducing the risks and stressors that can increase the development of undesired outcomes. Organisations can offer healthcare benefits, wellness programmes and employee assistance programmes in order to reduce the likelihood of physical and psychological risks such as health problems, stress, burnout and alcohol and drug abuse. With regard to asset-focused strategies, organisations can emphasise and enhance resources that increase the probability of positive outcomes despite the presence of risks. Therefore, the development of human, social and positive psychological capital of managers and employees can better equip them to deal with setbacks, both at the personal and organisational levels

(Luthans, 2004). Finally, process-focussed strategies involve the mobilisation of the power of the adaptation systems necessary for the utilisation of one's inventory of assets to manage emerging risk factors. It is to enhance an organisation's preparedness to deal with crises through effectively capitalising on its human and material resources to adapt to new realities flexibly and swiftly (Luthans, 2004).

Human resource development (HRD) can implement these three strategies to proactively head off stress resulting from upsetting negative (or positive) events. However, this approach is simply reactive in that it is how an individual responds to a negative (or positive) event. Both reactive and proactive human resource development (HRD) strategies become necessary to the development of resilience because we cannot always control the external environment, but we can do our best to anticipate the future (Luthans et al., 2006).

The more developed people's positive psychological states become, the higher their psychological capital to draw from in dealing with the increasing demands and pressures of today's organisations and life in general. According to Luthans, Avolio, Walumbwa, and Li (2005), managers can invest in, build and improve psychological capital through encouraging learning and development among workers and adjusting to organisational change (Luthans, 2002a, 2002b, 2003; Luthans & Avolio, 2003; Luthans & Jensen, 2002; Luthans & Youssef, 2004).

Organisations would in all likelihood benefit from increased well-being of staff and their related increased productivity by designing their places of work to sustain positive learning and development of energy, vigour, dedication, absorption and effectiveness (Maslach, Schaufeli, & Leiter, 2001). Iwasaki, Mactavish, and Mackay (2005) argue that leisure provides opportunities for promoting life balance, whereby the intentional creation of leisure space becomes an oasis for personal physical, psychological and emotional renewal that facilitates a sense of balance, survival and resilience, or the capacity to cope proactively with or counteract stress.

Resilience is achieved by individuals finding the strengths within themselves that can serve as and complement protective factors, and by building their self-esteem. Enhancers of resilience include one's attitude, the ability to learn from mistakes (a cognitive focus), and having role models. Resilient qualities are assets or protective factors that help people

increase their self-esteem by growing through adversity. Applying resilience reinforces people's moving away from limitation and toward self-efficacy (Richardson, 2002) so that they can rise above the storms and tribulations of life (Engel, 2007).

These recommendations are in line with the positive psychological perspective, which emphasises human strengths in managing stress proactively rather than trying to heal already caused damage.

3.3.2 Recommendations for further research

Future studies should focus on the bias and equivalence of the various measuring instruments for different cultural and language groups, and also include other constructs such as job demands and resources, performance, job satisfaction, absenteeism, turnover, health and organisational commitment. Furthermore, measuring instruments should be translated into other South African languages to ensure absolute clarity in understanding is achieved by all cultural groups participating in further studies. It is also recommended that future studies explore other types of organisations in the South African context.

Concerning the research design, future studies should concentrate on longitudinal and experimental designs from which causal inferences may be made and internal validity may be optimised (Kerlinger & Lee, 2000). Such designs will also allow for the testing of the efficacy of interventions aimed at increasing positive organisational capacities and its relationship to work wellness.

The OLBI presented with item loadings that did not correspond with the originally intended factor structure as per Demerouti, Bakker, Vardakou, and Kantas (2003) design, which appears to be the case in other South African studies as well. The OLBI does not deliver consistent results in terms of construct validity in terms of South African studies. More research is required into the use of the OLBI in a South African context, either in terms of an alternative burnout measuring instrument or in terms of adapting the current version.

3.4 CHAPTER SUMMARY

In this chapter, conclusions regarding the theoretical and empirical objectives were made. The limitations of the research were pointed out and recommendations were made for the industry in which the study was conducted, as well as for future research. All theoretical and empirical objectives formulated for this research, have been attained.

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