

**THE RELATIONSHIP BETWEEN BURNOUT AND COGNITION IN A
SOUTH AFRICAN METAL MANUFACTURING COMPANY**

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COMMENTS

The reader is reminded of the following:

- The references as well as the editorial style as prescribed by the *Publication Manual* (5th edition) of the American Psychological Association (APA) were followed in this 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. The name of the study leader appears on the article as it was submitted for publication.

DEDICATION

During my master's studies I was blessed with the opportunity of moving into a middle management position at BHP Billiton. The challenges at times seemed insurmountable and the learning curve was certainly steep for someone 'fresh out of university'. In the midst of all the challenges of making a success of my newly found career, I was determined to complete my master's studies. My parents never faulted in reminding me of the importance of continuous learning and the importance of formal qualifications. Mom, dad thank you for your genuine interest in my trials and successes and thank you for constantly reminding me that it is foolish to stand still after a victory and that the next opportunity is always there for the taking. To Abiseshen, thank you for your constant support and your unfailing belief in my ability to achieve. Your work ethic is a true inspiration to me.

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SUMMARY

Subject: The relationship between burnout and cognition in a South African metals manufacturing company

Key terms: Burnout, cognition, job demands, job resources, manufacturing

Employees in South African organisations are faced with increasing work pressures as economic and business factors (such as globalisation) lead to extensive restructuring, cost cutting and initiatives to continuously improve organisational processes. These conditions are conducive to the occurrence of burnout in the South African private sector. Burnout has been extensively researched in areas such as health services and law enforcement, however, the subject has received less focus in the private sector. Given the negative impact of burnout on employees and organisations, it becomes valuable to study burnout in this context. The aim of this study was to investigate the relationship between job demands, job resources, cognition and burnout.

A cross-sectional survey design was used. Stratified random samples ($N = 80$) were taken from employees at a South African metals manufacturing company. The Maslach Burnout Inventory (MBI), Cognitive Flexibility Scale (CFS) and Job Demands-Resources Scale (JDERS) were administered. The reliability of the measuring instruments was assessed with the use of Cronbach alpha coefficients. Descriptive statistics (e.g., means and standard deviations) were used to analyse the data. Pearson correlations and multiple regression analyses were used to assess the relationships between job demands, job resources, burnout and cognition.

The correlation coefficients indicated that cynicism is negatively related to growth opportunities and organisational support. Professional efficacy was positively related to organisational support, growth opportunities, advancement and cognitive flexibility. Multiple regression analysis showed that job demands, job resources, and cognitive flexibility predicted 18% of the variance in the exhaustion of employees. Job demands, job resources, and cognitive flexibility predicted 28% of cynicism and 44% of the variance in professional efficacy.

Recommendations for future research were made.

OPSOMMING

Onderwerp: Die verband tussen uitbranding en kognisie in 'n Suid-Afrikaanse metaalvervaardigingsmaatskappy.

Sleutelterm: Uitbranding, kognisie, werkseise, werkhulpbronne, vervaardiging

Werkers in Suid-Afrikaanse organisasies dra die gevolge van ekonomiese en besigheidsfaktore (soos byvoorbeeld globalisering) wat veroorsaak dat organisasies herstruktureer, kostes verminder en prosesse verbeter. Werkers is dus in gevaar van uitbranding. Uitbranding is nagevors in areas soos gesondheidsdienste en wetstoepassing. Uitputting is nie grootliks in die privaatsektor nagevors nie. Aangesien uitbranding 'n negatiewe uitwerking het op werkers en maatskappye, is dit belangrik om uitputting in hierdie konteks te studeer. Die doel van hierdie studie was om die verband tussen werkseise, werkhulpbronne, kognitiewe buigzaamheid en uitbranding te bepaal.

Daar is gebruik gemaak van 'n dwarsdeursnee-opnameontwerp. Gestratifiseerde ewekansige steekproewe ($N = 80$) is geneem van werkers in 'n metaalvervaardigingsmaatskappy in Suid-Afrika. Die Maslach-Uitbrandingsvraelys, die Kognitiewe-buigzaamheidskaal (KBS) en die Werkseise-Hulpbronne-Skaal (WEHS) is gebruik. Die betroubaarheid van die meetinstrumente is bepaal deur die gebruik van Cronbach alfakoëffisiënt. Beskrywende statistiek (rekenkundige gemiddeldes en standaardafwykings) is gebruik om die data te ontleed. Pearson korrelasies en meervoudige regressie-analise is gebruik om te bepaal of werkeise en werkhulpbronne en kognitiewe buigzaamheid uitputting kan voorspel.

Die resultate het aangetoon dat daar 'n praktiese betekenisvolle negatiewe korrelasie tussen sinisme en organisasie-ondersteuning en ontwikkelingsgeleenthede bestaan. Die korrelasiekoëffisiënte het aangedui dat professionele doeltreffendheid positief verband hou met groeigeleenthede, organisasie-ondersteuning, bevordering en kognitiewe buigzaamheid. 'n Regressie-analise met uitputting as afhanklike veranderlike het aangedui dat kognitiewe buigzaamheid, werkseise en werkhulpbronne 18% van die variansie van hierdie veranderlike voorspel. Werk-

hulpbronne en kognitiewe buigsaamheid het 28% van die variansie in sinisme voorspel en 44% van die variansie in professionele doeltreffendheid voorspel.

Aanbevelings vir toekomstige navorsing is aan die hand gedoen.

CHAPTER 1

INTRODUCTION

This mini-dissertation concentrates on the relationship between burnout, cognitions, job demands and job resources of employees in a metals manufacturing industry.

This chapter aims to delineate the problems statement as well as the research objectives of the mini-dissertation. Furthermore, the research methods are also detailed in this chapter.

1.1. PROBLEM STATEMENT

Rapid technological changes and the increasing global nature of competition are forcing South African businesses to distribute their products more widely and rapidly, adapt to environmental change and to reduce costs. Future successful businesses are required to regard the entire world as their domain when satisfying demand for their products and services (Hough, Neuland, & Bothma, 2004).

This change in the contemporary business environment has resulted in great pressure on South African organisations to become more competitive in order to remain profitable and sustainable. Furthermore, the health of a nation's economy affects individual organisations and industries, because economic factors will affect the nature of and direction of the economy in which an organisation operates, as explained by Elhers and Lazenby (2004). Organisations are thus compelled to study the economic environment to identify changes and trends and resultant strategic implications.

South African organisations' constant monitoring of and adjusting to economic or business environments as a means of staying competitive has also led to often drastic measures being taken by the organisation. One of the most observable measures has been the decision to downsize or restructure organisations. The impact of such actions has resulted in leaner organisations that aim to produce more with reduced human and other resources.

The metal manufacturing company with its export bias, has also been affected by the dynamics described in the previous paragraphs. Subsequently, the organisation was

restructured from a labour compliment of 1500 employees to little over 450 employees. This change in the organisational structure was deemed as essential for the organisation to cut costs and therefore remain globally competitive.

Grout (1994) explains that the downsizing of many organisations results in increased workloads for those who remain behind. Paradoxically, the fear of imminent unemployment has also increased. Partially in reaction to this, burnout has come to be a prominent occurrence and research into this concept has ensued. Burnout is prolonged job stress that results from work pressures and expectations which tax or exceed an individual employee's emotional, mental and physical resources (Weisberg, 1994). In addition to this definition, Schaufeli and Enzmann (1998), define burnout as a persistent, negative, work-related state of mind which develops over time in so-called 'normal' individuals.

According to Schaufeli and Enzmann (1998), burnout is characterised by an array of physical, psychological and attitudinal symptoms. Maslach and Jackson (1986) conceptualised burnout as encompassing the components of emotional exhaustion, depersonalisation, and reduced personal accomplishment. Schaufeli, Maslach, Jackson and Leiter (1996) then went on to refine the components burnout to incorporate three dimensions, namely exhaustion, cynicism and professional efficacy. Exhaustion refers to the depletion of emotional resources. Cynicism can be described as a negative or excessively detached response to the job or the organisation. Professional efficacy, in turn, refers to the self-evaluation dimension of burnout and can be expressed as a feeling of competence, productivity and achievement at work.

Weisberg (1994) has highlighted the negative impact that employee burnout has on business organisations. According to Low, Cravens, Grant, and Moncrief (1993), employee burnout results in decreased job satisfaction, decreased organisational commitment, and increased intention to leave the organisation. Schaufeli (2003) offers a slightly different perspective by demonstrating that, strictly speaking, the relationship between burnout and economically costly negative employee behaviours (absenteeism, job turnover, poor performance) are not consistent, yet some indications do exist that such a relationship exists (at least to some degree). Schaufeli (2003) also agrees that recent evidence suggests that objective work characteristics (for example, job autonomy and workload) are related to burnout.

Burnout was originally observed principally among people who work with people or who provide human services of some kind. However, Maslach, Jackson, and Leiter (1996) developed the Maslach Burnout Inventory- General Survey (MBI-GS) to measure burnout in occupational groups other than human services. This is indicative that the phenomenon of burnout has spread to a variety of occupations and industries. According to Schaufeli (2003), the MBI-GS can be used both in human services and non-human services, where human services refer to occupations where employees do work that is aimed almost exclusively at assisting, rehabilitating or supporting people. Most burnout studies using the MBI-GS have, nevertheless, focussed on people doing human services. The largest single occupational groups studied worldwide are teachers (22%), nurses (17%) and social workers (7%), (Schaufeli & Enzmann, 1998).

A study in the Netherlands by Bakker, Schaufeli, and Van Dierendonck (2001b) summarised the prevalence of burnout in the following manner: occupational physicians 11,3%, general practitioners 8,2%, nurses 7,8%, hotel and catering industry 12,2%, teaching 9%, commercial services 5,4% and public governance 5,4%. In the United States of America studies by Schaufeli and Enzmann (1998) showed that, as compared to the Dutch prevalence rates, levels of burnout were significantly higher across most industries. In South Africa, studies have focussed on the health industry (33,8%), teaching (26,6%) and law enforcement (3,4%) (Wiese, Rothmann, & Storm, 2003). Research demonstrates very few studies in the private sector in South Africa. However, given the prevalence of burnout in most industries globally, it is worthwhile to conduct more studies in private industries (such as the metals manufacturing company) to gauge the prevalence of burnout in this sector.

It thus becomes clear that it is important to understand burnout both in order to reduce the negative psychological impact on employees as well as to reduce the negative impact on organisations. According to Schaufeli and Bakker (2004), research on burnout showed that some individuals, regardless of high job demands and long working hours, were not burned out. Instead, they seemed to derive energy from high work loads and severe job demands. This finding points to the possibility that there are individual and situational factors that may cause the occurrence of burnout. Individual factors are related to inherent factors within the individual, whilst situational factors refer to more objective factors that may often lie outside of the employee's sphere of influence.

According to Schaufeli (2003), burnout is a complex, multi-causal process that involves various factors at different levels of aggregation. Various antecedents have been linked to burnout in empirical research (Schaufeli & Enzmann, 1998). It also becomes evident that every occupation has its own specific causal factors. For example, burnout of employees in call centres is primarily caused by dissonance between their genuine feelings and those that can be shown towards clients (Zapf, Vogt, Seifert, Mertini, & Isic, 1999). The most important causal factors for production workers, as described by De Jonge and Kompier (1997), are a combination of work load and a lack of autonomy. Similarly, the most prominent determinant of burnout in educators is the interaction with learners (Van Horn, Schaufeli, & Enzmann, 1999).

Demerouti, Bakker, Nachreiner, and Schaufeli (2001) developed the Job-Demand-Resources (JD-R) model, which presupposes that although every occupation may have its own specific work characteristics associated with well-being, it is possible to model these characteristics in two broad categories (job demands and job resources). Job demands refer to those physical, psychological, social or organisational aspects of the job that require sustained physical and psychological (cognitive and emotional) effort and are therefore associated with physiological or psychological costs. Examples of job demands could include overload, job insecurity, and high work pressure. Job resources are those physical, psychological, social or organisational aspects of the job that may be functional in facilitating the achievement of work goals, reducing job demands and stimulating personal growth. Resources may be located at organisational level (e.g., salary and growth opportunities); at the interpersonal or social level (e.g., supervisor support); at the organisation of work level (e.g., role clarity) or at the level of the task (e.g., performance feedback and autonomy).

The JD-R Model of Demerouti et al. (2001) classifies the antecedents of burnout into situational factors that are objective job characteristics lying outside of the employee's control. However, given that burnout is multi-causal and given that regardless of external work circumstances many employees do not experience burnout, it is important to explore the role of individual factors and their impact on burnout.

Research conducted by Rothmann, Van Rensburg, and Malan (2000) has indicated that personality traits may have an impact upon employees' levels of burnout. Schaufeli and Bakker (2004), stating that research on burnout showed that some individuals, regardless of

high job demands and long working hours were not burned out, also provide a platform for the concept that there are individual factors that may moderate the occurrence of burnout. From a positive psychology perspective individuals are able to engage in their work, deriving pleasure from dealing with job demands and working hard. In fact, according to Nelson and Simmons (2003), meaningful work can lead to a state of so-called 'eustress' in which the employee is able to eloquently engage in work even if the environment is demanding.

Eustress reflects the extent to which cognitive appraisal of the situation is seen to either benefit or enhance an individual's well-being (Nelson & Simmons, 2003). It could therefore be possible that depending on how an employee cognitively evaluates or thinks about his working environment the employee would be more or less likely to experience burnout.

In the United States of America specific research into the role to be played by Rational Emotive Behaviour Therapy on employees' level of burnout due to prolonged exposure to workplace stress has also been conducted, as emphasised by Anderson (2000). Rational Emotive Therapy theorises that emotions are derived from cognitions which are derived from individuals' appraisals and thoughts about their environment (Betensky, 1999). Thus emotions associated with burnout, for example, emotions associated with exhaustion, cynicism or a low professional efficacy (the dimensions of burnout), may also be prompted by or derived from employees' cognitions and cognitive appraisals of their environment. This is especially in light of research by Folkman, Lazarus, Gruen, and DeLongis (1986) that shows that a person's cognitive and behavioural efforts to manage (reduce, minimise or tolerate) internal and external demands (e.g., job demands) may mediate the perceived taxing of person-environment resources (e.g., job resources).

It could therefore be suggested that individuals who experience irrational cognitions are prone to perceive certain life events in a more distressing or disturbing manner and are thus in greater danger of experiencing stress and anxiety, as propagated by Cramer and Buckland (1995). The importance of exploring a theory or model for determining how employees think about or appraise their working environment then becomes plausible in light of possibly moderating burnout.

Martin and Reuben (1995) describe the concept of cognitive flexibility. Cognitive flexibility refers to the individual's ability to accurately appraise or evaluate the environment, evaluate

alternative behaviours or options and subsequently learn new responses or behaviours. The basic premise is that there is an essential interaction between the way individuals construe their world and their prospects for the future, the way in which they feel and behave and the manner in which they are able to effectively respond, as explained by Beck and Greenberg (1974). If how employees cognitively evaluate or think about their working environment determines whether the employee would be more or less likely to experience burnout, it is important to study how cognition affects burnout.

Simply focusing on a relationship between cognitions and burnout would, however, provide a very one sided approach to the study being conducted. It is therefore important to also investigate job characteristics (situational factors) as described by Demerouti et al. (2001) via the Job-Demand-Resources (JD-R) model. It is valuable to study the relationship between burnout and irrational cognitions, whilst factoring in the possible relationship of these factors with job demands and job resources. This study may provide greater insight into burnout and thereby serve to shed more light on how burnout can be controlled in companies such as the metals manufacturing company.

Since employees are vital drivers in ensuring that organisational goals and strategies are attained and actualised, as propagated by Robbins (1998), it stands to reason that employee burnout must be understood with an aim to reducing it. Ulrich (1997) furthers this view by promoting the philosophy that organisations remain competitive by focussing on people strategies rather than product strategies. In fact, Ulrich states that people issues are becoming a source of competitive advantage once restructuring has taken place. Simply stated, competitors can copy structures, strategies or products yet it is almost impossible to copy employee behavioural competence and performance. Subsequently, it is probable that assisting employees in understanding and managing burnout may offer South African business organisations a competitive advantage in terms of employee psychological well-being.

Given the research problem discussed in preceding sections, the following research questions arise:

- What are the relationships between burnout, irrational cognitions, job demands and job resources?

- Which variables (irrational cognitions, job demands or job resources) have the strongest effect on burnout?

1.2. RESEARCH OBJECTIVES

The research objectives are divided into general and specific objectives.

1.2.1 General aim

The general aim of this study is to gain greater insight into the nature and characteristics of burnout by exploring a possible link or relationship between burnout, job demands and job resources and irrational cognitions.

1.2.2 Specific objectives

The specific objectives of this study are as follows:

- To determine the relationships between burnout, irrational cognitions, job demands and job resources.
- To identify whether irrational cognitions, job demands or job resources predict burnout.

1.3 RESEARCH METHOD

In conducting the research, a literature review as well as an empirical study was conducted.

1.3.1 Literature review

The literature review concentrates on previous research conducted on burnout, cognition, job demands and job resources. The review therefore focuses on how burnout, cognitions and job demands and job resources are conceptualised in literature.

1.3.2 Empirical study

The empirical study conducted focuses on the following elements: research design, participants, measuring instruments and statistical analysis. According to Shaughnessy and Zechmeister (1997), this design is ideally suited to descriptive and predictive statistics when drawing correlations between variables.

1.3.2.1 Research design

A cross-sectional survey design whereby a sample is drawn from a population at one time was used. According to Shaughnessy and Zechmeister (1997), this design is ideal when descriptive and predictive statistics are used in finding correlations between variables.

1.3.2.2 Participants

The participants were 80 employees from a metals manufacturing company across various levels and functions within the organisation. One hundred and fifty questionnaires were distributed across the company. Eighty questionnaires were returned.

1.3.2.3 Measuring instruments

The Maslach Burnout Inventory – General Survey (MBI-GS) (Maslach & Leiter, 1997) is used to measure the burnout of participants. The MBI-GS consists of 16 items in three sub-scales, namely Exhaustion, Cynicism, and Professional Efficacy. Together the sub-scales of the MBI-GS provide a three-dimensional perspective on burnout. Internal consistencies (Cronbach coefficient alphas) reported by Maslach et al. (1996) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy) (Maslach et al., 1996). The MBI-GS was consistently related to other constructs, as expected. A series of principal component analyses found Exhaustion to be associated with mental and physical strain, work overload and role conflict at work. Professional Efficacy was related to satisfaction, organisational commitment, job involvement and access to resources. Cynicism was related to the same constructs as Exhaustion. These results support the validity of the MBI-GS (Maslach et al., 1996).

The Job Demands-Resources Scale (JDERS), developed by Barkhuizen, Rothmann, and Tytherleigh (2004) is used to measure job demands and job resources for employees. The JDERS consists of 48 items. The questions are rated on a four point scale 1 (*never*) and 4 (*always*). The dimensions of the JDERS include pace and amount of work, mental load, variety in work, opportunities to learn, independence in work, relationships with colleagues, relationship with immediate supervisor, ambiguities about work, information, communications, participation, contact, uncertainty about the future, remuneration and career opportunities. According to Strydom and Rothmann (in press) five factors can be extracted from this measuring instrument, these factors are: growth opportunities, organisational support, advancement, overload and job insecurity. Strydom and Rothmann (in press) found that these factors show highly acceptable alpha coefficients, ranging from 0,76 to 0,92 as advised by Nunnally and Bernstein (1994).

The Cognitive Flexibility Scale (CFS) (Martin & Reuben, 1995) is used to measure the extent to which an individual is aware that there are options and alternatives in any given situation; prepared to adapt his behaviour to suit a new situation, and reassess a situation and learn new responses. The CFS, according to Martin and Reuben (1995), provides a reliable indication of cognitive constructs related to psychological wellness. The scale is composed of 12 items, rated on a six-point scale. The higher the total scores the higher the cognitive flexibility. Martin and Reuben (1995) also report a test-retest reliability of 0,83. Furthermore, a Cronbach alpha coefficient of 0,83 is reported. One factor was extracted from this measuring instrument. This factor was confirmed through the use of a principle components analysis with an oblimin rotation with a Kaiser Normalisation. This factor was termed cognitive flexibility.

1.3.2.4 Statistical analysis

The SPSS-program is used to carry out statistical analysis regarding reliability and validity of the measuring instruments, descriptive statistics, correlation coefficients, and multiple regression analysis (SPSS Inc., 2003). Cronbach alpha coefficients are used to determine the internal consistency of the measuring instruments as discussed by Clark and Watson (1995). Coefficient alpha conveys important information regarding the proportion of error variance in a measuring instrument.

Descriptive statistics are used to analyse the data. Pearson product-moment correlation coefficients are used to assess the relationship between the variables. A cut-off point of 0,30 was set for the practical significance of correlation coefficients. The level of statistical significance is set at $p < 0,05$. Effect sizes are used to decide the significance of findings. Regression analysis is used to determine the proportion of variance in exhaustion, cynicism and professional efficacy that is attributable to job characteristics and cognitive flexibility.

1.4 DIVISION OF CHAPTERS

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

Chapter 1: Introduction

Chapter 2: Research article

Chapter 3: Conclusions, limitations and recommendations.

1.5 CHAPTER SUMMARY

Chapter 1 centred on the problem statement, objectives and research method in this study.

Chapter 2 contains the research article.

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CHAPTER 2

RESEARCH ARTICLE

THE RELATIONSHIP BETWEEN BURNOUT AND COGNITION AMONGST EMPLOYEES IN A METALS MANUFACTURING COMPANY

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ABSTRACT

The objective of this study was to assess the relationship between the job demands, job resources, cognitive flexibility, and burnout. A cross-sectional design was used. Stratified random samples ($N = 80$) were taken from employees at a South African metal manufacturing company. The Maslach Burnout Inventory (MBI), Cognitive Flexibility Scale (CFS) and Job Demands-Resources Scale (JDRS) were administered. One factor, namely cognitive flexibility was extracted from the CFS. The results showed that there is a practically significant correlation between professional efficacy and cognitive flexibility. Job characteristics and cognitive flexibility explained 44% of the variance in professional efficacy, 18% of the variance in exhaustion and 28% of the variance in cynicism.

OPSOMMING

Die doel van hierdie studie was om die verband tussen werkseise, werkhulpbronne, kognitiewe buigsaamheid en uitbranding te bepaal. Daar is gebruik gemaak van 'n dwarsdeursnee-opnameontwerp. Gestratifiseerde ewekansige steekproewe ($N = 80$) is geneem van werkers in 'n metaalvervaardigingsmaatskappy in Suid-Afrika. Die Maslach-Uitbrandingsvraelys, die Kognitiewe Buigsaamheidskaal (KBS) en die Werkseienskappe-skaal (WES) is gebruik. Die resultate het aangetoon dat daar 'n praktiese betekenisvolle korrelasie tussen professionele doeltreffendheid en kognitiewe buigsaamheid bestaan. Een faktor is uit die KBS onttrek, naamlik kognitiewe buigsaamheid. Werkhulpbronne en kognitiewe buigsaamheid voorspel 44% van die variansie in professionele doeltreffendheid; 18% van die variansie in uitputting en 28% van die variansie in sinisme.

The contemporary workplace has become a volatile, demanding and often hostile environment, both from an economic as well as a psychological paradigm (Maslach & Leiter, 1997). The evolutionary process of globalisation may be seen as contributing toward the

creation of such contemporary workplaces. Globalisation, as expounded upon by Gordon (1999), involves the evolution of a global marketplace wherein business organisations are able to conduct their activities (within and across national boundaries).

The process of globalisation within South African business organisations, although often expansionary in nature, has also yielded numerous challenges. Continuous changes in the global economic environment, rapid technological advancements and an increased emphasis on organisational competitiveness are only some of the challenges presented by globalisation trends (Prahalad & Hamel, 1998).

The consequent organisational restructuring and re-engineering, employed as an attempt to deal with the challenges presented by globalisation, has served to contribute to South African employees' job related anxiety and insecurity (Probst & Brubaker, 2001). Hence, from the work of Probst and Brubaker, it becomes evident that the contemporary workplace may often be challenging and anxiety provoking to employees. Rothmann (2003), expounds on the challenges faced by employees by indicating that employees have to cope with many additional demands often with limited resources and a lack of control. An important occurrence which has accompanied this increased anxiety and pressure faced by employees is burnout (Low, Cravens, Grant, & Moncrief, 2001). Recent research is beginning to show that burnout is related to a wide-range of behaviours and attitudes within high-stress work environments, as detailed by Lee and Ashford (1996).

Burnout is thus becoming a role-player in employee behaviour and performance within contemporary workplaces and thus also in manufacturing industries. Subsequently this phenomenon has been researched not only in terms of its nature and characteristics and its consequent impact on employees and organisational variables, but also in terms of individual and situational determining or causal factors. For example, research conducted by Rothmann, van Rensburg and Malan (2001) has indicated that personality traits may have an impact upon employees' levels of burnout. Further revision of current literature also yields evidence of possible links between individuals' cognitive thought patterns and burnout. For instance, Low et al. (2001) state that a relationship exists between burnout and employees' cognitive frameworks as evidenced in attitudes, perceptions and behaviour. Research has thus focused on the role to be played by cognitive thought patterns (delineated as dysfunctional attitudes, assumptions and schemata) on anxiety, stress and depression.

The organisation being studied underwent a major and intensive restructuring in 2001. This restructuring was dictated by global economic forces and the need to remain competitive and profitable. The labour compliment was reduced by more than half (from 1500 employees to 480 employees) and production targets were, in turn, increased. Furthermore, a culture of cost reduction and continuous improvement was introduced and entrenched over the last 4 years. The result has been greater pressure on employees to achieve more (greater production targets) with fewer resources (a leaner compliment and continuous cost reduction).

Inevitably, many employees have demonstrated lower morale and a generally negative perception of the developments in the organisation. Employees experience frustration at not being able to take annual leave or sick leave without adversely impacting on already lean and overly stretched work teams. Managers are also required to carefully balance and manage limited resources to ensure that targets and key performance indicators are attained. Such conditions are conducive to the occurrence of burnout. It would be expected that employees would run a high risk of burnout as job demands often exceed job resources. However, it is interesting to note that many individuals are star performers and are able to attain their key performance indicators regardless of restrictions on job demands, whilst retaining high energy levels and an optimistic outlook. This phenomenon would point to the existence of moderating factors that determine whether an employee would be susceptible to burnout or not.

The objective of this study was to investigate the relationship between job demands, job resources, cognitive flexibility and burnout among employees of a South African Metals Manufacturing company that has recently been restructured to remain globally competitive.

Burnout, job demands, job resources, and cognition

Simply stated, burnout is prolonged job stress that results from work pressures and expectations which tax or exceed an individual employee's emotional, mental and physical resources (Weisberg, 1994). Similarly, Cordes and Dougherty (1993) as well as Low et al. (2001) view burnout to be a response syndrome to psychological erosion due to prolonged job stress, which is characterised by multiple yet interrelated dimensions or facets. Schaufeli

and Enzmann (1998), define burnout as a persistent, negative, work-related state of mind which develops over time in so-called 'normal' individuals.

Maslach and Jackson (1986), through their early research, developed a definition of burnout that is often alluded to. This definition states that burnout is a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment among individuals who do 'people work' of some kind. Subsequent research, as detailed by Schaufeli (2003), has shown that the symptom 'depersonalisation' is accurate only when studying persons who do 'people work of some kind'. Demerouti, Bakker, Nachreiner, and Schaufeli (2001) characterise depersonalisation as a specific kind of withdrawal or mental distancing from recipients, which in other jobs (which do not involve people work) may manifest itself as alienation, disengagement or cynicism concerning the job and the work role. Similarly, professional efficacy is a more accurate term than personal accomplishment as it refers to the employee's general evaluation of his or her competence and success in performing his or her job (Rothmann, 2003). Thus, exhaustion, cynicism and professional efficacy may be seen as more accurate dimensions of burnout (Schaufeli, Leiter, Maslach, & Jackson, 1996). In the third edition of the manual of the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996), the concept of burnout is described as a crisis in one's relationship with work in general and not necessarily with a crisis with one's relationship with people at work.

In order to better understand burnout it is also valuable to expound on the components or dimension of burnout. Exhaustion refers to the depletion or draining of emotional resources and feelings of being over extended. Exhaustion is a necessary but not sufficient criterion for burnout (Maslach, Schaufeli, & Leiter, 2001). The concept of exhaustion presupposes a prior state of high arousal or overload rather than one of low arousal. This would point to the fact that burnout is not a response to tedious, boring or monotonous work. According to Rothmann (2003), exhaustion fails to capture a critical aspect of the relationship people have with their work. Chronic exhaustion can lead people to distance themselves emotionally and cognitively from their work, so that they are less involved and responsive to the needs of other people or the demands of the task. Distancing is such an immediate reaction to exhaustion that a strong relationship exists between exhaustion and cynicism (Maslach et al., 2001).

Whilst exhaustion refers to the fact that the employee is incapable of performing because all energy has been drained, cynicism indicates that the employee is no longer willing to perform

because of an increased intolerance to any effort (Schaufeli, 2003). Mental distancing (psychological withdrawal from a task) can be seen as an adaptive mechanism to cope with excessive job demands and subsequent feelings of exhaustion (Maslach et al., 2001). When this coping strategy, however, becomes an ongoing pattern it becomes counter productive as it disrupts optimal task performance.

Cynicism therefore appears to develop in response to exhaustion, however, professional efficacy (as the third component of burnout) seems to develop independently and in parallel (Leiter, 1993). Professional efficacy is the weakest burnout dimension in terms of significant relationships with other variables, as explained by Lee and Ashford (1996). Although it has been argued that professional efficacy reflects a personality characteristic rather than a genuine component of burnout, it refers to the employee's perceived ability to meet the job demands and to satisfy essential elements of performance. Reduced professional efficacy would therefore result in the tendency to evaluate oneself negatively, particularly with regards to one's work.

Understanding the components of burnout is, however, certainly not sufficient in providing a comprehensive understanding of the concept. It is therefore beneficial and critical to explore the possible causes of burnout.

According to Schaufeli (2003), burnout is a complex, multi-causal process that involves various factors at different levels of aggregation. Various antecedents have been linked to burnout in empirical research (Schaufeli & Enzmann, 1998). It also becomes evident that every occupation has its own specific causal factors. For example, burnout of employees in call centres is primarily caused by dissonance between their genuine feelings and those that can be shown towards clients (Zapf, Vogt, Seifert, Mertini, & Isic, 1999). The most important causal factors for production workers, as described by De Jonge and Kompier (1997), are a combination of work load and a lack of autonomy. Similarly, the most prominent determinant of burnout in educators is the interaction with learners (Van Horn, Schaufeli, & Enzmann, 1999).

Demerouti, Bakker, Nachreiner, and Schaufeli (2001) developed the Job-Demand-Resources (JD-R) model, which presupposes that although every occupation may have its own specific work characteristics associated with well-being, it is possible to model these characteristics in

two broad categories (job demands and job resources). Job demands refer to those physical, psychological, social or organisational aspects of the job that require sustained physical and psychological (cognitive and emotional) effort and are therefore associated with physiological or psychological costs. Examples of job demands could include overload, job insecurity, and high work pressure. Job resources are those physical, psychological, social or organisational aspects of the job that may be functional in facilitating the achievement of work goals, reducing job demands and stimulating personal growth. Resources may be located at organisational level (e.g., salary and growth opportunities); at the interpersonal or social level (e.g., supervisor support); at the organisation of work level (e.g., role clarity) or at the level of the task (e.g., performance feedback and autonomy).

Another assumption in the JD-R model is that job characteristics may elicit two psychologically different processes, namely an energetic process in which high job demands exhausts the employee's energy, as well as a motivational process in which lacking resources preclude dealing effectively with job demands and foster mental withdrawal. Demerouti et al. (2001) explain these two processes as follows: The energetic process is related to mental fatigue and is a response of the mind and body to the reduction in resources due to mental task execution. Loss of energy occurs when employees have to keep up high levels of energy over long periods of time under high pressure circumstances. The mobilisation of this extra energy may result in acute fatigue. Employees expend great amounts of energy each day without having an opportunity to recover or re-energise. Incomplete recovery from workload demands can accumulate and eventually have chronic effects on health and well-being. The second process is termed the motivation process. This process would become evident when organisations do not provide or reward employees with job resources. The long-term consequence is withdrawal from work and reduced motivation and commitment. This dissociation from work may be viewed as a self-preservation mechanism that employees may use to prevent future frustration and disappointment in not obtaining work-related goals.

A theory that seeks to explain such behaviour is known as the conservation of resources theory. This theory predicts that in situations where employees experience a lack or loss of resources or a failure to perform or to gain from energy invested, they will search for opportunities to reduce this discomfort or job stress (Hobfoll & Freedy, 1993). Thus, when employees are faced with work environments that offer limited job resources to facilitate the attainment of performance indicators, they will seek to minimise their perceived losses by

attempting to obtain a perceived state of equilibrium or equity without incurring further negative, personal consequences. This equity will normally be achieved through a reduction of the employee's discretionary inputs and outputs (Hobfoll & Shirom, 2000).

It becomes clear from the above two processes of the JD-R model that certain aspects of the model are related to various components of burnout. Demerouti et al. (2001) confirm that job demands (for example, physical demands, time pressure and overload) are associated with exhaustion, whereas a lack of job resources (for example, feedback and opportunities for growth) are associated with disengagement or cynicism.

Lazarus (1991) as well as Spielberger, Vagg, and Wasala (2003) developed two other models to explain organisational stressors. These models are the Transactional Process Model (TPM) and the Spielberger-State-Trait (STP) model, respectively. The models conceptualise stress as a complex process that consists of three major components, namely a) sources of stress that are encountered in the work environment; b) perception and appraisal of particular stressor by an employee, and c) the emotional reactions that are evoked when a stressor is perceived as threatening. According to Spielberger et al. (2003), employees evaluate their work environment in terms of the severity and frequency of specific job demands and pressure and the level of support provided by supervisors, co-workers and organisational policies and procedures.

The JD-R Model of Demerouti et al. (2001) as well as the TPM and STP models classify the antecedents of burnout into situational factors that are job characteristics lying outside of the employee's control. However, given that burnout is multi-causal and given that regardless of external work circumstances many employees do not experience burnout, it is important to explore the role of individual factors and their impact on burnout.

Research conducted by Rothmann, van Rensburg and Malan (2001) has indicated that personality traits may have an impact upon employees' levels of burnout. Schaufeli and Bakker (2004), stating that research on burnout showed that some individuals, regardless of high job demands and long working hours were not burned out, also provide a platform for the concept that there are individual factors that may moderate the occurrence of burnout. From a positive psychology perspective individuals are able to engage in their work, deriving pleasure from dealing with job demands and working hard. In fact, according to Nelson and

Simmons (2003), meaningful work can lead to a state of so-called 'eustress' in which the employee is able to eloquently engage in work even if the environment is demanding.

Eustress reflects the extent to which cognitive appraisal of the situation is seen to either benefit or enhance an individual's well-being (Nelson & Simmons, 2003). It could therefore be possible that depending on how an employee cognitively evaluates or thinks about his working environment the employee would be more or less likely to experience burnout.

In the United States of America specific research into the role to be played by Rational Emotive Behaviour Therapy on employees' level of burnout due to prolonged exposure to workplace stress has also been conducted, as emphasised by Anderson (2000). Rational Emotive Therapy theorises that emotions are derived from cognitions which are derived from individuals' appraisals and thoughts about their environment (Betensky, 1999). Thus emotions associated with burnout, for example, emotions associated with exhaustion, cynicism or a low professional efficacy (the dimensions of burnout), may also be prompted by or derived from employees' cognitions and cognitive appraisals of their environment. This is especially in light of research by Folkman, Lazarus, Gruen, and DeLongis (1986) that shows that a person's cognitive and behavioural efforts to manage (reduce, minimise or tolerate) internal and external demands (e.g., job demands) may mediate the perceived taxing of person-environment resources (e.g., job resources).

A great deal of psychological research and literature has focused on understanding how individual's cognitive frameworks impact on their psychological processes and well-being. A basic premise in comprehending cognition has been the central principle behind Cognitive Behavioural Therapy. This principle advocates that there is an essential interaction between the manner in which individuals feel and behave and the way in which they construe their world, themselves and their prospects for the future (Ellis, 1977). Cognitive Behavioural Therapy thus aims to help individuals change their emotions and behaviours, adapt more functionally to their world and generally improve well being by focusing on how individuals think about, evaluate and appraise their environment (Frankl, 1985). Renton (2002) states that the treatment of psychological disturbances through cognitive behavioural therapy was devised by A.T Beck as early as 1960. From observations of his patients, Beck hypothesised that irrationality could be understood in terms of individuals' inadequacies in organising and interpreting information from their environment. This view is further promulgated by Beck,

Rush, Shaw, and Emery (1979), who described irrational cognitions as the result of faulty learning and the making of incorrect inferences on the basis of inadequate information.

Furthermore this approach to psychology explores how irrational cognitions (defined as dysfunctional or distorted thoughts) impact on behaviour. All humans appear to have these irrational or distorted thoughts and these distortions in thought patterns or belief systems are also one of the major focuses of the model for Cognitive Behavioural Therapy. Ellis (1977) delves into this concept more profoundly by describing different types of irrational cognitions. These cognitions are described as (a) all- or- nothing- thinking which refers to the tendency to evaluate performance or personal qualities in extremist, black-and-white categories; (b) over- generalisation occurs when the individual arbitrarily concludes that a single negative event will happen over and over again; (c) selective abstraction, in this distortion individuals selectively choose the single or few pieces of evidence that support their distorted ideas; (d) labelling and mislabelling involves personal labelling whereby the individual creates a negative identity that is based on certain generalised errors and imperfections.

Thus, cognitive therapy is based on an underlying theoretical rationale that an individual's affect and behaviour is largely determined by the way in which they structure their world and the manner in which they are able to successfully regulate and adapt behaviour. It could therefore also be suggested that individuals who experience irrational cognitions are prone to perceive certain life events in a more distressing or disturbing manner and are thus in greater danger of experiencing stress and anxiety, as further propagated by Cramer and Buckland (1995).

Linked to this model of cognition, Martin and Reuben (1995) describe the concept of cognitive flexibility. Cognitive flexibility refers to the individual's ability to accurately appraise or evaluate the environment, evaluate alternative behaviours or options and subsequently learn new responses or behaviours. Again, the basic premise is that there is an essential interaction between the way individuals construe their world and their prospects for the future, the way in which they feel and behave and the manner in which they are able to effectively respond, as explained by Beck and Greenberg (1974). If how employees cognitively evaluate or think about their working environment determines whether the employee would be more or less likely to experience burnout, it is important to study how

cognition affects burnout. Lazarus and Folkman (1984) emphasise the individual's role in assessing situations as either threatening or non-threatening. According to this model, the level of job stress experienced by the individual would depend on the individual's cognitive appraisal of events and on the ability to adapt and cope. An individual's coping strategy is constantly changing to manage specific demands from the environment that may be perceived by the individual as exceeding their resources.

Employees who experience high levels of job stress may experience emotions such as anger, anxiety, depression, nervousness, irritability, tension and boredom. Such emotions can certainly contribute to decreased job performance, lower self-esteem, resentment of supervision, inability to concentrate and make decisions and general job dissatisfaction (Cartwright & Cooper, 2002). There is therefore a relationship between burnout and lowered job performance. Job demands and a lack of resources also contribute to stress, which leads to burnout and low work engagement (Rothmann, Steyn, & Mostert, 2005).

METHOD

Research design

A survey design was used to reach the objectives of the research. The specific design was a cross sectional survey design, by means of which a sample is drawn from a population at a particular point in time (Shaughnessy & Zechmeister, 1997)

Participants

The participants were employees of a metals manufacturing industry in South Africa ($N = 150$). A total of 80 questionnaires were received. The mean age of participants was 38 and the average years of service was nine years.

Table 1

Characteristics of the Participants

Item	Category	Frequency	Percentage
Function	Production	20	25
	Maintenance	35	44
	Support Services	25	31
Education	Grade 10 – Grade 11	1	1,3
	Grade 12	22	27,5
	Grade 12 + 3-year Degree	41	51,2
	Grade 12 + 4-year Degree or Honours	16	20
Gender	Male	6	7,5
	Female	74	92,5
Age category	19-29 years	15	18,8
	30-39 years	41	51,3
	40-49 years	18	22,5
	50-59 years	6	7,5
Language	Afrikaans	29	36,3
	English	37	46,3
	Zulu	2	2,5
	Setswana	3	3,8
	Sesotho	9	11,3
Years experience	0-5 years	16	20
	5,1-10 years	11	13,7
	10,1-40 years	53	66,3

Measuring instruments

The following questionnaires were used in this study:

The Maslach Burnout Inventory – General Survey (MBI-GS) (Maslach, Jackson, & Leiter, 1996) was used to measure the burnout of participants. The MBI-GS consists of 16 items in three sub-scales, namely Exhaustion, Cynicism, and Professional Efficacy. Together the sub-scales of the MBI-GS provide a three-dimensional perspective on burnout. Internal consistencies (Cronbach coefficient alphas) reported by Maslach et al. (1996) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy) (Maslach et al., 1996). The MBI-GS was consistently related to other constructs, as expected. A series of principal component analyses found Exhaustion to be associated with mental and physical strain, work overload and role conflict at work.

Professional Efficacy was related to satisfaction, organisational commitment, job involvement and access to resources. Cynicism was related to the same constructs as Exhaustion. These results support the validity of the MBI-GS (Maslach et al., 1996).

The Job Demands-Resources Scale (JDRS), developed by Barkhuizen, Rothmann and Tytherleigh (2004) is used to measure job demands and job resources for employees. The JDRS consists of 48 items. The questions are rated on a four-point scale varying from 1 (*never*) to 4 (*always*). The dimensions of the JDRS include pace and amount of work, mental load, variety in work, opportunities to learn, independence in work, relationships with colleagues, relationship with immediate supervisor, ambiguities about work, information, communications, participation, contact, uncertainty about the future, remuneration and career opportunities. According to Strydom and Rothmann (in press) five factors can be extracted from this measuring instrument, these factors are: growth opportunities, organisational support, advancement, overload and job insecurity. Strydom and Rothmann (in press) found that these factors show highly acceptable alpha coefficients, ranging from 0,76 to 0,92 as advised by Nunnally and Bernstein (1994).

The Cognitive Flexibility Scale (CFS) (Martin & Reuben, 1995) was used to measure the extent to which an individual is aware that there are options and alternatives in any given situation, prepared to adapt his behaviour to suit a new situation, and reassess a situation and learn new responses. The CFS, according to Martin and Reuben (1995), provides a reliable indication of cognitive constructs related to psychological wellness. The scale is composed of 12 items, rated on a 6-point scale. The higher the total scores the higher the cognitive flexibility. Martin and Reuben (1995) also report a test-retest reliability of 0,83. Furthermore, a Cronbach alpha coefficient of 0,83 is reported. This factor was confirmed through the use of a principle components analysis with an oblimin rotation with a Kaiser Normalisation. This factor was termed cognitive flexibility.

Statistical analysis

The SPSS-program was used to carry out statistical analysis regarding reliability and validity of the measuring instruments, descriptive statistics, correlation coefficients, and multiple regression analysis (SPSS Inc., 2003). Cronbach alpha coefficients were used to determine the internal consistency of the measuring instruments as discussed by Clark and Watson

(1995). Coefficient alpha conveys important information regarding the proportion of error variance in a measuring instrument.

Descriptive statistics were used to analyse the data. Pearson product-moment correlation coefficients were used to assess the relationship between the variables. A cut off point of 0,30 was set for the practical significance of correlation coefficients. The level of statistical significance is set at $p < 0,05$. Effect sizes are used to decide the significance of findings. Regression analysis was used to determine the proportion of variance in exhaustion, cynicism and professional efficacy that is attributable to job characteristics and cognitive flexibility.

RESULTS

Table 2 shows the descriptive statistics and Cronbach alpha coefficients of the measuring instruments.

Table 2

Descriptive Statistics and Alpha Coefficients of the MBI, JDRS and CFS

Item	Mean	SD	Skewness	Kurtosis	α
MBI					
Emotional exhaustion	8,11	4,96	0,66	-0,18	0,83
Cynicism	6,59	4,82	0,53	-0,27	0,75
Professional Efficacy	27,73	5,17	-0,21	-0,77	0,68
JDRS					
Overload	17,86	3,17	0,09	-0,48	0,61
Organisational Support	45,03	7,55	-0,62	0,75	0,89
Growth Opportunities	22,74	4,33	-0,08	0,01	0,84
Social support	18,70	2,94	-0,13	0,28	0,71
Advancement	15,31	3,40	0,77	-0,06	0,75
CFS					
Cognitive Flexibility	22,84	4,32	-1,70	5,67	0,70

Table 2 shows that the MBI scores are normally distributed. The Cronbach alpha coefficients of the scales of the MBI are considered to be acceptable compared to the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). The alpha coefficients for the JDRS are acceptable for all

job characteristics, except for overload. Furthermore, the CFS also demonstrated an acceptable Cronbach alpha coefficient.

The product-moment correlations between the MBI-GS, JDRS and CFS are reported in Table 3.

Table 3

Product-moment Correlations between the MBI-GS, JDRS and CFS

Item	1	2	3	4	5	6	7	8	9	10
1. Exhaustion	-	-	-	-	-	-	-	-	-	-
2. Cynicism	0,41**	-	-	-	-	-	-	-	-	-
3. Professional Efficacy	-0,31**	-0,54***	-	-	-	-	-	-	-	-
4. Overload	0,09	-0,09	0,19	-	-	-	-	-	-	-
5. Organisational Support	-0,15	-0,43**	0,41**	0,26*	-	-	-	-	-	-
6. Growth Opportunities	-0,04	-0,45**	0,37**	0,27	0,71***	-	-	-	-	-
7. Social Support	-0,19	-0,18	0,14	0,12	0,52***	0,52***	-	-	-	-
8. Advancement	-0,14	-0,17	0,18	-0,15	0,11	0,16	0,25*	-	-	-
9. Job Insecurity	-0,17	-0,14	0,43**	0,06	0,24*	0,29*	0,39**	0,13	-	-
10. Cognitive Flexibility	-0,24*	-0,29*	0,25*	0,06	0,16	0,34**	0,13	0,01	-0,09	-

* $p < 0,05$ statistically significant

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

** $r > 0,50$, practically significant, large effect

The results in Table 3 show that exhaustion is statistically significantly related to cynicism. Furthermore, exhaustion is statistically significantly (negatively) related to professional efficacy and cognitive flexibility. Cynicism is statistically and practically significantly (negatively) related to organisational support and growth opportunities. Cynicism is also statistically significantly (negatively) related to cognitive flexibility. Professional efficacy is statistically and practically significantly related to organisational support, growth opportunities and insecurity.

The results of a multiple regression analysis with job demands and job resources (as measured by the JDRS), and cognitive flexibility (as measured by the CFS) as independent variables and exhaustion (as measured by the MBI-GS) as dependent variable are reported in Table 4.

Table 4

Regression Analysis with Exhaustion as Dependent Variable

Variables	Unstandardised Coefficients		Standardised Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²
	B	SE	Beta					
(Constant)	20,54	5,46		3,75	0,00	2,24*	0,42	0,18
Overload	0,15	0,17	0,09	0,84	0,40			
Organisational Support	-0,17	0,10	-0,26	-1,68	0,09			
Growth Opportunities	0,40	0,19	0,35	2,08	0,04*			
Social Support	-0,17	0,23	-0,10	-0,76	0,44			
Advancement	-0,14	0,16	-0,09	-0,86	0,39			
Insecurity	-0,33	0,20	-0,19	-1,61	0,11			
Cognitive Flexibility	-0,37	0,13	-0,32	-2,79	0,00*			

$p < 0,05$

Table 4 shows that job demands, job resources, and cognitive flexibility predicted 18% of the variance in exhaustion (as measured by the MBI-GS). However, only two variables showed statistically significant regression coefficients, namely growth opportunities and cognitive flexibility.

The results of a multiple regression analysis with job demands and job resources (as measured by the JDRS), and cognitive flexibility (as measured by the CFS) as independent variables and cynicism (as measured by the MBI-GS) as dependent variable are reported in Table 5.

Table 5

Regression Analysis with Cynicism as Dependent Variable

Variables	Unstandardised Coefficients		Standardised Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²
	B	SE	Beta					
(Constant)	23,49	4,96		1,27	0,20	4,04*	0,53	0,28
Overload	0,42	0,16	0,02	1,23	0,22			
Organisational Support	-0,19	0,09	-0,30	3,05	0,04*			
Growth Opportunities	-0,24	0,17	-0,21	-0,16	0,87			
Social Support	0,28	0,21	0,17	-2,91	0,18			
Advancement	-0,17	0,14	-0,12	1,87	0,23			
Insecurity	-0,12	0,18	-0,07	4,71	0,50			
Cognitive Flexibility	-0,21	0,12	-0,19	2,79	0,07			

$p < 0,05$

Table 5 shows that job demands, job resources, and cognitive flexibility predicted 28% of the variance in exhaustion (as measured by the MBI-GS). However, only one variable showed statistically significant regression coefficient, namely organisational support.

The results of a multiple regression analysis with job demands and job resources (as measured by the JDRS), and cognitive flexibility (as measured by the CFS) as independent variables and professional efficacy (as measured by the MBI-GS) as dependent variable are reported in Table 6.

Table 6

Regression Analysis with Professional Efficacy as Dependent Variable

Variables	Unstandardised Coefficients		Standardised Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²
	B	SE	Beta					
(Constant)	6,01	4,73		1,27	0,20	7,90*	0,65	0,44
Overload	0,19	0,15	0,11	1,23	0,22			
Organisational Support	0,27	0,09	0,40	3,05	0,00*			
Growth opportunities	-0,02	0,16	-0,23	-0,16	0,87			
Social Support	-0,58	0,20	-0,33	-2,91	0,00*			
Advancement	0,26	0,14	0,17	1,87	0,06			
Insecurity	0,84	0,18	0,46	4,71	0,00*			
Cognitive Flexibility	0,32	0,11	0,27	2,79	0,00*			

* $p \geq 0,05$

Table 6 shows that job demands, job resources, and cognitive flexibility predicted 44% of the variance in professional efficacy (as measured by the MBI-GS). However, only four variables showed statistically significant regression coefficients, namely organisational support, social support, job insecurity and cognitive flexibility.

DISCUSSION

The objective of this study was to investigate the relationship between job demands, job resources, cognitive flexibility and burnout among employees of a South African Metals Manufacturing company that has recently been restructured to remain globally competitive.

The regression analysis conducted demonstrates that exhaustion, as a dependent variable, correlates positively to growth opportunities. This would suggest that employees in the manufacturing company experience greater exhaustion as growth opportunities increase. This finding contradicts JD-R model's energetic process, which states that job demands (instead of job resources) cause a depletion of employees' physical and mental energy resulting in exhaustion (Demerouti et al., 2001). A possible explanation for this is that given the company's restructuring and resultant leaner labour complement, employees feel more exhausted as expectations to grow and develop further increases. According to Spielberger et

al. (2003), employees evaluate their work environment in terms of the severity and frequency of specific job demands and pressure and the level of support provided by supervisors, co-workers and organisational policies and procedures. It could therefore be concluded that employees will evaluate the severity of additional job requirements and pressures (for example, more projects for development and exposure) and consequently also evaluate the assistance or organisational support available to them to meet the new organisational expectations. Should employees perceive the job requirements to exceed the resources and support available, they may in turn feel depleted energies and exhaustion. It was also found that 18% of the variance in exhaustion can be predicted by overload, organisational support, growth opportunities, social support, advancement, insecurity and cognitive flexibility. A variance of 18% indicates that there is not a strong relationship between the level of exhaustion in employees and their ability to be flexible in terms of their cognition.

The analysis of the Pearson correlations in this study showed that cynicism is negatively related to organisational support and growth opportunities. Cynicism was also found, through a regression analysis, to correlate negatively with organisational support. The results suggest that an employee's perception of the extent to which the organisation is committed to his development will impact on how cynical the employee feels towards his work. Similarly, if the organisation provides sufficient support to the employee in carrying out duties and responsibilities, the levels of cynicism would be reduced. This confirms the findings of Rothmann, Jackson, and Kruger (2003) who state that cynicism is linked to job resources. Furthermore, these results support the JD-R model's motivation process. This process becomes evident when organisations do not provide or reward employees with job resources (such as organisational support and growth opportunities). The longer-term consequence of this lack of job resources, according to Demerouti et al. (2001), is a withdrawal from work and reduced motivation and commitment. Thus, reduced organisational support and growth opportunities would lead to increased cynicism (withdrawal and reduced motivation and commitment). The conservation of resources theory also seeks to explain this relationship between cynicism and job resources. According to Hobfoll and Freedy (1993), when employees perceive a lack of job resources they will withdraw and reduce their commitment to the organisation until a seeming sense of balance or equity is achieved. Subsequently, as employees perceive organisational support and growth opportunities to be diminishing the more cynical they will become until a sense of equity is produced.

Overload, organisational support, growth opportunities, social support, advancement, insecurity and cognitive flexibility predicted 28% of the variance in cynicism.

It was found that professional efficacy is positively related to organisational support and growth opportunities. These findings are also in line with results obtained by Rothmann, Jackson, and Kruger (2003). It is of interest to note that professional efficacy was positively related to insecurity. An explanation may be sourced from the STP Model propagated by Spielberger et al. (2003). This model explains that an employee tends to perceive and appraise job stressors and these may in turn elicit emotional reactions that are evoked when a stressor is perceived as threatening. Employees may perceive and appraise job insecurity as a serious threat to their continued employment. The emotional response may then be to compensate by ensuring that they portray themselves in a positive and professionally efficant manner.

Professional efficacy was also found to be positively correlated with organisational support, advancement and cognitive flexibility. It is important to note that professional efficacy is the only burnout variable that correlates significantly with cognitive flexibility. Cognitive flexibility is described by Martin and Reuben (1995) as being the individual's ability to correctly evaluate a situation, consider alternate behaviours and options and learn new responses where required. The Cognitive Behavioural Theory of Ellis (1977) also nurtures the concept of abstract thinking and consideration of alternatives. Professional efficacy refers to the employee's perceived ability to meet job demands and to satisfy elements of job performance. This definition of professional efficacy relates strongly to the concept of self efficacy. Self efficacy is the personal belief in one's ability to deal adequately with situations. Bandura (1977) states that self efficacy is also related to persistence and strength of behavioural efforts made in solving tasks when facing problems and obstacles. Therefore the correlation between professional efficacy and cognitive flexibility can be explained via the Cognitive Behavioural Theory. An employee who is able to deal with problems and difficult situations (for example, where job demands exceed job resources), by persevering, accurately appraising a situation and considering alternative behaviours requires a belief in their ability to deal adequately with problematic situations. The cycle also becomes re-enforced as problems are adequately solved the employee's professional efficacy would increase.

Thus, from the findings it may be concluded that, individuals with a high cognitive flexibility are able to reassess their environment, decide on an action and thereby solve relevant work challenges or problems. An employee's ability to resolve problems and cope with challenges would in turn increase the employee's sense of professional efficacy.

Moreover, the positive correlations between professional efficacy and organisational support, social support and advancement are confirmed in the regression analysis. Overload, organisational support, growth opportunities, social support, advancement, insecurity and cognitive flexibility predict 44% of the variance in professional efficacy.

RECOMMENDATIONS

The manufacturing company should attend to various job characteristics in order to decrease employees' exposure to burnout.

Firstly, employees' levels of cynicism can be managed by ensuring that organisational support and growth opportunities are in place. Organisational support and growth opportunities would demonstrate that the company is committed to assisting the employee and would thereby reduce possible distrust and pessimism felt by the employee.

A further recommendation in the interest of reducing burnout in the organisation is the consideration of the impact of growth opportunities on exhaustion. It is suggested that the company investigate whether the employee has the resources and support required for development and growth before allowing the employee growth opportunities. In ensuring that a supportive environment is in place during growth and development, exhaustion in employees may be reduced.

Ensuring an increased sense of professional efficacy is also beneficial to the relevant company as a measure of reducing burnout. Professional efficacy was found to be the only factor of burnout that is dependent on an employee's level of cognitive flexibility. Training programmes aimed at assisting employees with skills to investigate alternative solutions, adapt to changing environments and learn new responses may be a worthwhile route for further investigation.

The reduction of burnout is a key consideration in ensuring that the manufacturing industry is able to maintain its competitive edge through its employees.

Furthermore, the link between cognition and burnout should be investigated in a wider variety of organisations, using larger samples. Such research will enrich the understanding of the causes of burnout as well as possible interventions.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter discusses conclusions attained from the research objectives. Limitations to the study are expounded upon and recommendations for further studies are put forward.

3.1. CONCLUSIONS

The subsequent section serves to delineate the conclusions drawn on the basis of the research objectives.

3.1.1. Conclusions relevant to specific research objectives

The following conclusions are drawn as a result of the research objectives:

The aim of the study was to determine whether a relationship exists between burnout and cognitions, given certain job characteristics. It was hypothesised that certain individual factors may moderate the occurrence of burnout. This hypothesis is especially in light of findings by Schaufeli and Bakker (2004) that many individuals regardless of their workloads and work pressures are able to meet their performance objectives whilst maintaining high energy levels and a positive outlook on their work. Thus individual moderating factors must exist.

Cognition was investigated as an individual factor that may determine whether or not an employee experiences burnout. Renton (2002) explains how individuals that demonstrate faulty or irrational cognitive patterns are less successful at adapting to new or challenging circumstances. Individuals with so called irrational cognitions also display behaviours such as an inability to learn new responses, the tendency to draw incorrect inferences from a situation and a general inability to adapt and cope.

These tendencies are similar to those measured by the Cognitive Flexibility Scale which looks at the awareness of options or alternatives in any given situation; the ability to adapt

behaviour to new situations as well as the capacity to reassess a situation and learn new responses.

The research showed that of the three factors of burnout (exhaustion, cynicism and professional efficacy); professional efficacy showed the most practically significant correlation with cognitive flexibility.

Professional efficacy is described by Maslach and Jackson (1986) as being an individual's sense of personal accomplishment and belief in his or her ability to perform on the job. The strong correlation between professional efficacy and cognitive flexibility would indicate that an employee who is able to learn new responses and adapt to novel circumstances is also more confident about his or her ability to perform at work. Thus by increasing an employee's cognitive flexibility, professional efficacy could also be improved. Improvement of professional efficacy could reduce the incidents of burnout in the workplace.

Further conclusions could be drawn about burnout and job characteristics. Understanding how the job characteristics impact on burnout is important, as this can reduce the strain on the employee.

Cynicism is inversely dependent on organisational support. As organisational support increases, cynicism decreases. Hence it is important to ensure that the organisation provides the necessary infrastructure to support employees in their daily tasks. This support indicates to the employee that the company has a sincere interest in providing assistance and facilitating the execution of the job. Such support is then critical in reducing pessimism and mental distancing of the employee from the company.

Furthermore, burnout can also be controlled by ensuring that exhaustion is reduced or better managed. A valuable finding is that as growth opportunities increase, exhaustion increases. Thus it is important that the company not merely provide the employee with opportunities to grow and develop by providing more exposure and responsibility without implementing support structures. The research shows that growth opportunities can actually lead to greater exhaustion if not managed correctly. Through its restructuring efforts the company has created a leaner structure where employees are expected to achieve more and reduce costs with less resources and greater work pressures. This change in the organisational structure

also means that any additional strain (even if the intent is positive) can lead to exhaustion in employees.

There is therefore many interventions that the company can put in place to reduce burnout in its employees.

3.2. LIMITATIONS

The greatest limitation was the small sample that was used and researched. The reality within the organisation is that employees are under great work pressure and often find it a challenge to attend to other additional requests. The small sample size may leave room for statistical errors.

The Cognitive Flexibility Scale also yielded only one reliable factor. A more reliable instrument may provide more detailed evidence as to which aspects of cognition affect burnout.

A variety of industries should also be used in future studies to provide more comprehensive and reliable information about the relationship between burnout and cognition.

3.3 RECOMMENDATIONS

The sections below address recommendations for the organisation as well as for future research efforts in this area.

3.1 Recommendations for the organisation

Management should investigate the impact of growth opportunities on the levels of exhaustion of employees. Additional exposure and greater responsibility should only be provided if the necessary organisational support and infrastructure is in place to facilitate the employee's growth. Simply expecting the employee to grow and develop with limited job resources may in fact have the opposite of the desired effect.

Furthermore, burnout could also be reduced if employees' professional efficacy could be maintained at a high level. Training programmes to assist employees in developing life skills such as how to investigate options and alternatives when faced with a new or challenging situation; how to learn new behaviours; and how to be more flexible and adaptable under difficult or changing circumstances, should be investigated.

The above factors are related to cognitive flexibility, which was found to increase professional efficacy.

It is therefore valuable to investigate means of influencing the components of burnout in order to reduce the incidents of burnout. Reducing burnout has a positive consequence for both the organisation as well as for the individual.

3.3.2. Recommendations for future research

Based on the findings of this study the following recommendations are made for future research efforts:

- A greater sample should be used to investigate the relationship between burnout and cognition;
- An alternative instrument to measure cognitive flexibility should be used;
- A training programme to increase cognitive flexibility should be developed to determine whether such an intervention has an impact on professional efficacy.

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