

**CORE SELF-EVALUATIONS AS A MODERATOR FOR THE EFFECTS OF
ROLE OVERLOAD AND POWERLESSNESS ON ILL-HEALTH**

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FOR THE READER'S ATTENTION

The reader is reminded of the following:

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- The mini-dissertation is submitted in the form of a research article. The editorial style specified by the *South African Journal of Industrial Psychology* (which agrees largely with the APA style) is used, but the APA guidelines were followed in constructing tables.

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SUMMARY

Title: Core self-evaluations as a moderator for the effects of role overload and powerlessness on ill-health.

Key words: Self-esteem, self-efficacy, locus of control, neuroticism, role conflict, role overload, powerlessness, organisational climate, salutogenesis, ill-health, medication, depression.

Employees in the Occupational Risk Division (ORD) of a large petrochemical company experience many difficult situations on a regular basis. This division of the company comprises the emergency services, the security and the occupational health divisions of the company. Even though every precaution is taken to ensure the safety of employees in the company, accidents and incidents do happen. The employees of the ORD are confronted with gruesome accidents, dangerous accident scenes where they have to enter when everyone else is evacuated, and security breaches where they may have to enter and resolve serious conflict situations. The possibility that their work climate may contribute to their mental health status is suggested. It is suspected that the stress of the job affects the mental health of the employees of the ORD, and ways need to be found to reduce these effects.

The objective of this research was to determine the relationship between core self-evaluations, role overload, powerlessness and health indicators of employees in the ORD of a large petro-chemical company and to determine whether core self-evaluations act as a moderator in the relationship between role overload and powerlessness on the one hand and health indicators on the other hand.

A cross-sectional design was used. The sample consisted of 299 employees from the Occupational Risk Division of the organization. Age, gender and level of education were included as control variables. A comprehensive survey containing the measuring instruments was administered. Descriptive statistics and inferential statistics were used to analyse the data.

Results obtained indicated that some of the scales were not reliable. Powerlessness was dropped from the analysis and qualitative and quantitative role overload were collapsed into a total overload measure. The results showed that a negative relationship exists between role overload and core self-evaluations. A positive relationship exists between role overload and neuroticism, poor health and depression. Self-esteem, self-efficacy and locus of control are negatively related to neuroticism and health, and neuroticism is positively related to poor health.

Depression was predicted by experiences of overload, levels of self-efficacy, locus of control and negative affect (Neuroticism). General health was predicted by experiences of overload, locus of control, neuroticism and the interaction between overload and self-esteem. None of the scales predict medication use to a significant degree.

Results further indicated that only self-esteem acts as a moderator in the relationship between role overload and general health, but none of the variables of core self-evaluations act as a moderator between role overload and depression or between role overload and the use of medication.

By way of conclusion, recommendations for future research were made.

OPSOMMING

Titel: Kern self-evaluerings as 'n moderator vir die effekte van rol oorlading en magteloosheid op swak gesondheid.

Sleutelwoorde: Selfagting, self-doelmatigheid, lokus van beheer, neurose, rol, rol konflik, rol oorlading, magteloosheid, organisasie klimaat, salutogenese, swak gesondheid, medikasie, depressie.

Werknemers van die Beroepsrisiko Divisie (BD) van 'n groot petrochemiese maatskappy ervaar daaglik moeilike situasies. Hierdie afdeling van die maatskappy bestaan uit die nooddienste, sekuriteit en beroepsgesondheid afdelings. Ten spyte daarvan dat alle redelike voorsorg getref word om die werknemers van die maatskappy se veiligheid te verseker, gebeur daar tog ongelukke en insidente. Die werknemers van die BD word dan daaglik gekonfronteer met aaklige ongelukke, gevaarlike ongelukstonele waar hulle die toneel moet betree terwyl ander die toneel ontruim, asook sekuriteit insidente waar hul soms ernstige konflik situasies moet oplos. Die moontlikheid dat hul werk klimaat dalk 'n rol kan speel in hul geestesgesondheid, is geopper. Daar word vermoed dat die spanning wat die werk teweeg bring die geestesgesondheid van die werknemers van die BD kan beïnvloed en dat maniere gevind moet word om hierdie effek teen te werk.

Die doelstelling van hierdie navorsing was om die verwantskap tussen kern self-evaluerings, rol oorlading, magteloosheid en aanduiders van gesondheid onder werknemers van die BD van 'n groot petrochemiese maatskappy te bepaal. 'n Verdere doelstelling van die studie was om te bepaal of kern self-evaluerings dien as 'n modererende faktor in die verwantskap tussen rol oorlading en magteloosheid aan die een kant en aanduiders van gesondheid aan die ander kant.

'n Eenmalige dwarsnee opname-ontwerp is gebruik. Die steekproef het bestaan uit 299 werknemers van die Beroepsrisiko Divisie. Ouderdom, geslag en opvoedingsvlak was ingesluit as kontroleer veranderlikes. Een omvattende meetinstrument wat al die meetinstrumente insluit, is gebruik. Beskrywende en afleidende statistiek is gebruik om die data te analiseer.

Uitslae het aangedui dat van die skale nie betroubaar was nie. Magteloosheid is verwyder uit die analise. Kwalitatiewe en kwantitatiewe rol oorlading was inmeekaargesak in een faktor naamlik, totale rol oorlading. Die uitslae het aangedui dat daar 'n negatiewe verband bestaan tussen rol oorlading en kern self-evaluerings. 'n Positiewe verband bestaan tussen rol oorlading en neurose, swak gesondheid en depressie. 'n Negatiewe verband is gevind tussen selfagting, self-doelmatigheid en lokus van beheer aan die een kant en neurose en gesondheid aan die ander kant. 'n Positiewe verband is gevind tussen neurose en swak gesondheid.

Depressie was voorspel deur ervarings van oorlading, vlakke van self-doelmatigheid, lokus van beheer en negatiewe affek (Neurose). Algemene gesondheid was voorspel deur ervarings van oorlading, lokus van beheer, neurose en die interaksie tussen oorlading en selfagting. Nie een van die skale speel 'n statisties beduidende rol in die voorspelling van die gebruik van medikasie nie.

Resultate het verder aangedui dat slegs selfagting dien as moderator in die verhouding tussen rol oorlading en algemene gesondheid, en dat geen van die ander veranderlikes van kern self-evaluerings as moderator optree tussen oorlading en depressie of tussen oorlading en gebruik van medikasie nie.

Aanbevelings vir toekomstige studies was by wyse van konklusie gemaak.

CHAPTER 1

INTRODUCTION

This dissertation deals with core self-evaluations as a moderator for the effects of role overload and powerlessness on ill-health. In this chapter the specific problem will be identified and explored. The literature will be consulted to find out to what extent the problem has been researched before. After stating the problem, research objectives will be set and the paradigm perspective of the study will be stated. The research method that will be used to explore the problem will be explained and a chapter division for the dissertation will be indicated.

1.1 PROBLEM STATEMENT

1.1.1 Overview of the problem

During 2007 a large petrochemical company experienced two disturbing incidents involving employees of the company. The incidents occurred within a day of each other. In one incident an employee killed both himself and his wife at work. In another incident an employee shot his wife and committed suicide at home. Both individuals involved were emergency personnel of the company and management expressed serious concern about these incidents.

The Occupational Risk Division comprises the emergency services, the security division and the occupational health division of the company. These employees are confronted with difficult situations daily. The company has also recently experienced accidents that have affected many employees and their families. Employees, including those of the Occupational Risk Division, are provided with opportunities to be debriefed and services are available to help them cope with difficult situations. Unfortunately, for unknown reasons, these services are not always used by all the employees.

The idea that an individual assigns meaning to things he or she comes into contact with and that this meaning represents truth and reality for this person, holds an important place in the Ecosystemic perspective according to Meyer, Moore, and Viljoen (1997). This view is central to this study. The climate in which an individual works is a perception that this individual constructs about the system in which he or she works. Sometimes the prevailing climate of the system results in the perception that there is too much to do in too little time, the sense that the work is too difficult and demanding (quantitative and qualitative role overload) and that the individual has little or no control over the situation (powerlessness). If this results in health complaints, one may describe the poor health as a physical and mental manifestation of the negative perceptions of this individual. He or she may develop a negative perception about him or herself and his or her ability to perform the job. Alternatively the individual may have great belief in his or her abilities to handle the stress resulting from the negative climate. A positive self-evaluation may prevent negative effects on his or her health. This self-evaluation is a construction of the individual. It is hypothesized that positive self-evaluations will moderate the effect of a negative perception of the work environment on the health of the individual.

It is suspected that in the particular division the stress of the job affects the health of the employees and ways need to be found to reduce these effects. It is not clear that the incidents mentioned occurred due to job stress and it is possible that it could have occurred for other unrelated reasons. It would, however, be of interest to the company to investigate the possible role of the work climate in the health of their employees.

In view of the current situation, the organisation indicates interest in the perceptions of the employees in the Occupational Risk Division about their work climate and how or if these perceptions affect the health of these employees. The study could therefore act as a diagnostic tool to indicate the perceptions about the work climate and whether it has an effect on the health of the employees. If it is found that the work climate is perceived negatively, the company will be challenged to improve the climate. If core self-evaluations are found to act as a moderator for the effects of the work climate on health, the information could serve as a starting point for developing interventions.

This study is, therefore, an opportunity to begin to understand what is going on in the particular division of the company. The problem, if it exists, warrants a large, qualitative study. Results obtained by this study could in future lead to further investigation and the development and initiation of assistance programmes.

1.1.2 Literature review

According to Cilliers and Kossuth (2002), organisational climate refers to the psychological atmosphere on a meta-level and to organisational, interpersonal and individual dimensions on an operational level. Cilliers and Kossuth (2002) further found a correlation between a positive organisational climate and a high level of salutogenic functioning. Salutogenic functioning refers to an individual's positive way of cognitively and affectively appraising the world. According to Viviers (1999) such a person will be more likely to use the resources at their disposal in perceiving and influencing organisational climate. In light of the specific situation in the particular organisation and after consultation and expressed needs it was decided that the work climate would be explored by looking at role overload (qualitative and quantitative) and powerlessness.

Quantitative role overload is described by Taber, Beehr and Walsh (1978) as a feeling of having too much to do in too little time. Sverke, Hellgren and Öhrming (1999/1999) define qualitative role overload as a sense that the work is too difficult or demanding. In a study by Ashford, Lee, and Bobko (1989) with the intention of developing a measure for job insecurity, powerlessness was described as the sense of influence that an individual has over the work situation and organisational processes. They developed a three item measure that measures powerlessness as a component of the job insecurity construct.

If individuals perceive their jobs to be too demanding and that the resources are not available to help them in their jobs, they may develop a perception of powerlessness and that they have no or little control to influence the situation. This may result in perceived stress by the individuals.

Örtqvist and Wincent (2006) describe role ambiguity, role conflict and role overload as facets of work stress. Ashford et al. (1989) also describe powerlessness as a contributor to work stress.

Research has shown that core self-evaluation as a broad individual trait, is a significant predictor of job satisfaction and job performance (Judge, Erez, Bono, & Thoresen, 2003). According to Dormann, Fay, Zapf and Frese (2006), job satisfaction is believed to reflect individuals' affective and/or cognitive assessment of their work conditions and job attributes. It is therefore a perception by the individual. Role overload and powerlessness is part of individuals' cognitive and affective assessment of the work conditions and job attributes.

It is further stated by Dormann et al. (2006) that job satisfaction is influenced by personality dispositions. In a study with the aim of formulating proposals about dispositional factors that affect job satisfaction, Judge, Locke, and Durham (1997) state that core evaluations are fundamental, bottom-line evaluations that individuals hold about themselves, the world and others. This appraisal of themselves, the world and others is done subconsciously. In their initial formulation of the core self-evaluation concept, Judge et al. (1997) identified three traits that met the criteria set out by them: self-evaluative, fundamentality and scope. These three traits were self-esteem, generalized self-efficacy and neuroticism. They later decided that locus of control also met their criteria. In a review of the literature on core self-evaluation, Bono and Judge (2003, p. S8) came to the following conclusions about core self-evaluations:

- (i) self esteem, locus of control, neuroticism and, generalized self-efficacy share many conceptual similarities;*
- (ii) despite their frequency of study, the similarities of these traits are virtually ignored in the literature;*
- (iii) the empirical relations among these traits are strong;*
- (iv) consistently, the four traits indicate a higher order factor.*

Bono and Judge (2003) reason that there is an obvious link between self-esteem and generalized self-efficacy. They define self-esteem as the approval of oneself and the degree one sees oneself as capable, successful, significant and worthy.

Generalized self-efficacy is defined as an estimate of one's capability of performing, at a global level and across many contexts (Bono & Judge, 2003). Self-efficacy is defined by Bandura (1977) as the conviction that one can successfully execute a given behaviour required to produce certain outcomes. It also refers to expectancies in one's capability to mobilize the resources needed to meet situational demands but not to differences in outcome expectancies. This relates to perceptions of control over a situation, which in this study also relates to powerlessness. Judge and Bono (2001) found positive correlations between self-efficacy and job satisfaction and job performance.

Locus of control can be defined as the belief of whom and what is to be held responsible for the consequences of one's behaviour (Schyns & Von Collani, 2002). An internal locus of control means that individuals assign the consequences of behaviour to themselves. External locus of control means that individuals assign the consequences of behaviour to external forces or other individuals. Ashford et al. (1989) found a positive correlation between an internal locus of control and an individual's perception that he or she has the power to counteract whatever the environment may throw at them.

Perrewé et al. (2005) conceptualised political skill as the individual's belief that he or she controls their interpersonal work environment. This reinforces the individual's belief that he or she has the ability to act as a causal agent to effect the change in the intended direction on their environment and achieve their goals. This construct has been moderately related to certain personality constructs that are reminiscent of self-efficacy beliefs and locus of control. Perrewé et al. (2005) investigated the role of political skill on the job stressor (role overload) – strain relationship. They hypothesized that job stressors manifest in psychological and physical strains and found that political skill buffers the job stressor – strain relationship.

Robinson and Meier (2005) state that neuroticism has been linked to negative affectivity, a broad tendency to experience negative emotional states and a negative explicit evaluation of the self. They showed that higher levels of neuroticism were associated with lower levels of implicit self-

esteem, and that implicit self-esteem predicts displays of negative emotion, therefore suggesting an influence on the mental health of the individual.

Lloyd and Foster (2006) quote a substantial body of research that has investigated the relationship between stress and illness. They state that workplace stress can be a contributing factor in the five leading causes of death in the United States: coronary heart disease, stroke, lung cancer due to smoking, diabetes and chronic obstructive pulmonary disease. Bakker, Demerouti, and Euwema (2005) found that employees reported the highest levels of fatigue and demoralisation where job demands were high and job resources were low. The results of a series of hierarchical regression analyses performed by Bakker et al. (2005) showed that autonomy, social support from colleagues, a high quality relationship with the supervisor and performance feedback were capable of buffering the impact of work overload on exhaustion.

McLean (2002) found a positive correlation between stress and depression in working mothers. In a review of the literature, Örtqvist and Wincent (2006) identified the most prominent consequences of role stress. The main consequences identified by them were emotional exhaustion, reduced personal accomplishment, depersonalization, a decrease in job satisfaction and organisational commitment, decreases in performance, an increase in tension and a propensity to quit.

Previous research therefore suggests the following:

- The contributing relationship of role overload and powerlessness to job stress.
- A relationship between job stress and ill health.
- A possible buffering effect of some constructs of core self-evaluations on the effects of job stress on health.

This study will explore the effects of role overload (qualitative and quantitative) and powerlessness on health and the moderating role of core self-evaluations. It is suspected that each construct may have a reciprocal influence on the other. The perception that there isn't

enough time to do all that is expected and the sense that the work is too difficult (role overload), combined with a sense of powerlessness, may have a negative impact on the health of the individual. The opposite may also be true: Poor health may in turn contribute to perceptions of role overload and powerlessness. This study will also attempt to indicate that positive self-esteem, high self-efficacy beliefs, an internal locus of control and low levels of neuroticism of the individual (core self-evaluations) can act as a moderator for the negative effects of perceived role overload and powerlessness on the health of an individual. According to Holmbeck (1997), a moderator variable is something that affects the relationship between two variables. The nature of the impact of the predictor on the criterion varies according to the value of the moderator. "A moderator interacts with a predictor variable in such a way as to have an impact on the level of a dependant variable" (Holmbeck, 1997, p. 599). Role overload and powerlessness will be the predictors, and health (as evidenced in depression, general health and use of medication) will be the criterion.

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

- How are role overload (qualitative and quantitative), powerlessness, core self-evaluations, health (as indicated by depression, general health and use of medication), and the relationship between these variables, conceptualised in the literature?
- What is the relation between role overload (qualitative and quantitative), powerlessness, core self-evaluations and health (as indicated by depression, general health and use of medication) in a sample of employees from the Occupational Risk Division of a large petro-chemical company?
- Can role overload (qualitative and quantitative), powerlessness and core self-evaluations be used to predict the depression, general health and use of medication of employees from the Occupational Risk Division of a large petro-chemical company?
- Do core self-evaluations moderate the relationship between role overload (qualitative and quantitative) and powerlessness on the one hand, and health (as indicated by depression,

general health and use of medication) of employees from the Occupational Risk Division of a large petro-chemical company on the other?

- What recommendations can be made for managing role overload, powerlessness and health in the organisation, and for future research?

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

1.2 RESEARCH OBJECTIVES

1.2.1 General objective

The general objective of this research is to determine the relationship between core self-evaluations, role overload, powerlessness and health of employees in the Occupational Risk Division of a large petro-chemical company.

1.2.2 Specific objectives

The specific objectives of this research are:

- To determine how overload (qualitative and quantitative), powerlessness, core self-evaluations and health (as indicated by depression, general health and use of medication) are conceptualised and related in the literature.
- To determine the relation between overload (qualitative and quantitative), powerlessness, core self-evaluations and health (as indicated by depression, general health and use of medication) in a sample of employees from the Occupational Risk Division of a large petro-chemical company.
- To establish whether overload (qualitative and quantitative), powerlessness and core self-evaluations can be used to predict depression, general health and the use of medication for employees from the Occupational Risk Division of a large petro-chemical company.

- To determine whether core self-evaluations moderate the relationship between role overload (qualitative and quantitative) and powerlessness on the one hand and health (as indicated by depression, general health and use of medication) on the other hand of employees from the Occupational Risk Division of a large petro-chemical company.
- To make recommendations on managing role overload, powerlessness and health in the organisation, and for future research.

1.3 PARADIGM PERSPECTIVE OF THE RESEARCH

A certain paradigm perspective that includes the intellectual climate and the market of intellectual resources directs the research (Lundin, 1996; Mouton & Marais, 1992). According to Mouton and Marais (1992) normal science is practiced and based on certain achievements that the scientific community accepts. They call these achievements “*paradigms*”. Mouton and Marais (1992) further state that normal science can be defined as the practice of science within a dominant paradigm which includes a set of socially acceptable achievements (theories, models, predictions, or laws). A paradigm is therefore a model from within which normal science is conducted and Mouton and Marais (1992) name four components of a paradigm: (a) Scientists firstly commit themselves to a set of theories and laws. These are explicit statements of scientific law and about scientific concepts and theories (Lundin, 1996). (b) The scientists accept certain methodological and research techniques prescribed by the paradigm. (c) The scientists are bound by certain quasi-metaphysical assumptions and (d) There are certain commitments that the scientists make as scientists. This research is therefore bound by conceptual, theoretical, instrumental and methodological commitments that will direct the research. These are explicated by examining the intellectual climate, the discipline, the meta-theoretical assumptions and the market of intellectual resources.

1.3.1 Intellectual climate

The intellectual climate of a research project refers to the group of convictions, values and assumptions that originated in non-epistemological contexts and that does not have anything to

do with the epistemological goals of scientific research (Mouton & Marais, 1992). These include convictions about humanity, society, culture and history. According to Mouton and Marais (1992) these convictions, values and assumptions are not testable and are not meant to be tested.

1.3.2 Discipline

This research falls within the boundaries of the behavioural sciences and more specifically Industrial Psychology. Reber and Reber (2001, p. 349) describe Industrial psychology as:

A branch of applied psychology covering organisational, military, economic and personnel psychology and including such areas as tests and measurements, the study of organisations and organisational behaviour, personnel practices, human engineering, human factors, the effects of work, fatigue, pay and efficiency, consumer surveys and market research.

Industrial Psychology therefore applies psychological theories, research methods and intervention strategies to the world of work.

1.3.3 Meta-theoretical assumptions

Three paradigms are relevant to this research. Firstly, the literature review is done within the Positive Psychology/Positive Psychology paradigm. Aspects of Systems Theory are also taken into consideration. The empirical study is done within the positivist paradigm.

1.3.3.1 Literature review

According to Strümpfer (2005) the positive psychology paradigm is a school of thought that emphasises human strengths. The aim of positive psychology according to Seligman and Csikszentmihalyi (2000, p. 1) is: "...to begin to catalyze a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive

qualities.” Seligman and Csikszentmihalyi (2000) further state that positive psychology at the subjective level is about valued subjective experiences, at the individual level about positive individual traits and at the group level it is about civic virtues and the institutions that move individuals toward better citizenship.

The following basic assumptions are relevant in this regard (Seligman & Csikszentmihalyi, 2000):

- Normal functioning cannot be understood solely within a problem-oriented framework.
- Psychology is not just the study of weakness; it is also the study of strength and virtue.
- Treatment is not just fixing what is broken; it is nurturing what is best in us.
- Focus on the positive experience.
- A perspective of human beings as self-organizing, self-directed, adaptive entities.
- Focus on exceptional performance.
- The recognition that people and experiences are embedded in a social context.

Although this study explores a hypothesized negative problem in the particular organisation, the ultimate goal is to show that positive core self-evaluations could moderate the negative effect of the independent variables. If this is shown to be true, interventions can be focused on strengthening the core self-evaluations of individuals

The aspects of systems theory that are taken into account are (Becvar & Becvar, 2000):

- An emphasis on reciprocity, recursion and shared responsibility.
- A and B exist in the context of a relationship in which one influences the other.
- A holistic perspective.
- Reality is not external, but is constructed by us as we bring our personal perceptions to bear on it and give meaning and order to reality. (Humans are proactive in creating their reality)
- Theoretical relativity. One theory is not embraced with the implied rejection of another theory.

This paradigm perspective is included in this study because it emphasizes the context and reality generating perceptions of individuals within the work system. Although the empirical process of this study is done within the Positivist paradigm, the context of the situation cannot be ignored. The hypothesized problem exists within a certain context and is the result of perceptions generated by individuals. If this study indicates a work climate that degenerates individual strengths, programmes can be designed that would also target the system within which the problem exists. The hypothesized problem may therefore affect individuals on a personal level as well as on a systemic level.

1.3.3.2 Empirical study

The use of a prescribed measure and statistical techniques in this research limits this study to the positivist paradigm. The positivist paradigm holds the assumptions that (Terre Blanche & Durrheim, 2004):

- What is to be studied on an ontological level consists in a stable and unchanging external reality (e.g. economic laws, cognitive mechanisms).
- The scientist can assume an objective and detached epistemological stance towards that reality.
- The scientist can employ methodology that relies on control and manipulation of reality.

For the purpose of this study it will be assumed that the respondents' perception of reality is unchanging and stable and can be measured through the use of a questionnaire. It will further be assumed that statistical methods can be used to explore the data and that the scientist can assume an objective and detached epistemological stance towards the measured reality. There will be no manipulations or attempts to control the reality.

1.3.4 Market of intellectual resources

According to Mouton and Marais (1992) the market of intellectual resources refers to the set of convictions that directly applies to the epistemological status of the scientific propositions. Mouton and Marais (1992) state that two types of epistemological convictions can be distinguished: the theoretical beliefs about the nature and structure of the domain phenomenon and the methodological convictions about the nature and structure of research on the domain phenomenon. In other words, this refers to the theoretical and methodological assumptions and convictions that are relevant to this study.

1.3.4.1 Theoretical beliefs

Theoretical beliefs can be described as all beliefs that make testable pronouncements about social phenomena. (Mouton & Marais, 1992) That includes all propositions that form part of hypotheses, typologies, models and theories.

A. Conceptual definitions

The following constructs with their conceptual definitions are relevant to this study:

- Work Climate, defined as the psychological atmosphere in an organisation on a meta-level and the organisational, interpersonal and individual dimensions on an operational level. (Cilliers & Kossuth, 2002)
- Quantitative Role Overload, which is defined as the feeling of having too much to do in too little time (Taber et al., 1978),
- Qualitative Role overload, which is defined as the sense that work is too difficult or demanding (Sverke et al., 1999).
- Powerlessness, which alludes to the sense of one's influence over one's work situation and organisational processes (Ashford et al., 1989).
- Core Self-Evaluations, which are the fundamental, bottom-line evaluations that an individual holds about himself, the world and others (Judge et al., 1997). It is a higher-order

construct for the traits of self-esteem, generalized self-efficacy, locus of control and neuroticism.

- Self-esteem: Generally referring to a positive evaluation of oneself (Rosenberg, 1965).
- Generalized Self-efficacy: Beliefs about one's capability to achieve what one sets out to do (Judge, Locke, Durham, & Kluger, 1998).
- Locus of Control: The sense that the individual has control rather than believing in luck (Levenson, 1981).
- Neuroticism: The tendency to interpret situations negatively and to be pessimistic (Eysenck & Eysenck, 1968).
- Health: This refers to the general mental health of the individual (Goldberg, 1979).
- Depression: This captures the most important symptoms of clinical depression. (Bech, Rasmussen, Raabaek Olsen, Noerholm, & Abildgaard, 2001).
- Medication: This refers to the use of several types of medication.

B. Models and theories

Model and theory are often used as synonyms (Mouton & Marais, 1992). They show important similarities and it could be argued that models are heuristics of theories and theories are more declarative in nature.

Kerlinger (1973, p. 9) define a theory as: *"...a set of interrelated 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."*

This study forms part of a larger study about experiences in the Modern World of Work that is run jointly by the WorkWell Research Unit at the Potchefstroom Campus of the North-West University and the division of Work and Organizational Psychology at Stockholm University, Sweden. The model under scrutiny is interested in the experiences, both positive and negative, of

people at work, how this affects them personally, their performance and their respective organisations.

The model that will be investigated in this particular study is presented below:

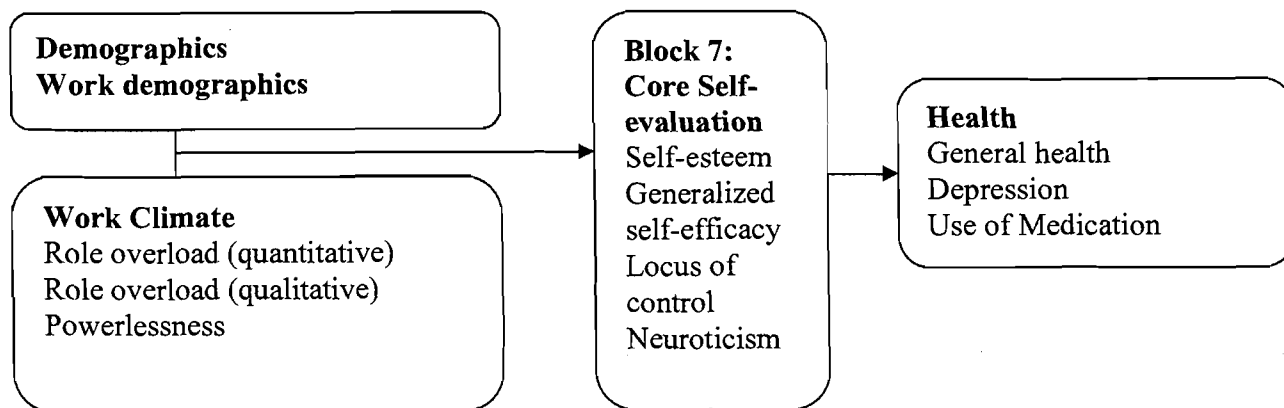


Figure 1. Model depicting the current study

1.3.4.2 Methodological beliefs

Methodological beliefs can be defined as beliefs that make statements about the nature and structure of science and scientific research (Mouton & Marais, 1992). The empirical study is presented within the positivist framework/paradigm. The root assumptions of the positivist framework are (Terre Blanche & Durrheim, 2004):

- What is to be studied on an ontological level consists in a stable and unchanging external reality (e.g. economic laws, cognitive mechanisms).
- The scientist can assume an objective and detached epistemological stance towards that reality.
- The scientist can employ methodology that relies on control and manipulation of reality.

For the purpose of this study it will be assumed that the respondents' perception of reality is unchanging and stable and can be measured through the use of a questionnaire. It will further be

assumed that statistical methods can be used to explore the data and that the scientist can assume an objective and detached epistemological stance towards the measured reality. There will be no manipulations or attempts to control the reality.

1.4 RESEARCH METHOD

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

1.4.1 Phase 1: Literature review

In phase 1 a complete review regarding role overload (quantitative and qualitative), powerlessness, core self-evaluations and health is done. The sources that will be consulted include:

- EBSCO
- SACat
- Sabinet Online
- SAePubl
- NRF (NEXUS)
- Library books and journals

1.4.2 Phase 2: Empirical study

The empirical study consists of the research design, participants, measuring battery, and the statistical analysis.

1.4.2.1 Research Design

The aim of the research design is to present a strategic framework that serves as a bridge between the research questions and the execution and implementation of the research (Terre Blanche & Durrheim, 2004). Kerlinger and Lee (2000) further state that a research design serves two purposes: to provide answers to research questions and to control variance.

The specific design that will be used is a cross-sectional survey design. The most important contributions of survey research according to Kerlinger and Lee (2000, p. 604) “...lies in the rigorous sampling processes, the overall design and implementation of the design of studies, the unambiguous definition and specification of the research problem, and the analysis and interpretation of data.” Survey designs provide the researcher with clear objectives and goals.

This project will follow the design process outlined by Kerlinger and Lee (2000) for survey research. This entails the use of the flow plan that outlines the design and implementation of a survey:

- Stipulate the objectives of the study.
- Formulate general and specific problems that are to be solved.
- Formulate and implement the sample and sampling plan.
- Construction of the measuring schedule.
- Decide whether data will be collected cross-sectionally or longitudinally.
- Data collection.
- Coding and tabulating responses on the questionnaire.
- Statistical analysis of data.
- Interpretation of analysis.
- Report results.

1.4.2.2 Participants

The entire population of the Occupational Risk Division of the company will be used. It is anticipated that the sample will include at least 300 individuals to whom the questionnaire will be administered. This represents almost 75% of the employees of the division including ambulance personnel contracted from ER24.

1.4.2.3 Measuring Battery

The measuring instrument that will be used is the “Experiences in the Modern World of Work” questionnaire. This instrument is a compilation of several measures developed by several authors. The instrument measures all the constructs relevant to the study. The relevant constructs that will be taken from the questionnaire are: Quantitative role overload, qualitative role overload, powerlessness, core self-evaluations, self-esteem, generalized self-efficacy, locus of control, neuroticism, general health, depression and medication use.

Quantitative Role Overload, which is defined as the feeling of having too much to do in too little time (Taber et al., 1978) will be measured with three items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”. In previous research (Beehr, Walsh & Taber, 1976) the instrument proved reliable with an alpha-coefficient exceeding 0,74. A typical item from this scale is “*I often have too much to do in my job*”.

Qualitative Role Overload, which is defined as the sense that work is too difficult or demanding (Sverke et al., 1999) will be measured with four items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”. A typical item from this scale is “*I have work demands that are difficult to accomplish*”.

Powerlessness, which alludes to the sense of one’s influence over one’s work situation and organisational processes (Ashford et al., 1989), will be measured with three items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”.

Ashford et al. (1989) indicate that the instrument proved reliable with an alpha-coefficient of 0,83. A typical item from this scale is *"I have enough power in this organization to control events that might affect my job"*.

Core Self-Evaluations are the fundamental, bottom-line evaluations that an individual holds about himself, the world and others (Judge et al., 1997). It is a higher-order construct for the traits of self-esteem, generalized self-efficacy, locus of control and neuroticism.

Self-esteem will be measured with ten items. The items are arranged on a Likert-type scale with 1 being "strongly disagree" and 5 being "strongly agree". In previous research (Judge et al., 2003) the instrument proved reliable with alpha-coefficients of 0,82, 0,80, 0,88, and 0,89. A typical item from this scale is *"On the whole, I am satisfied with myself"*.

Generalized Self-efficacy is the beliefs about one's capability to achieve what one sets out to do (Judge et al., 1998). The construct will be measured with eight items. The items are arranged on a Likert-type scale with 1 being "strongly disagree" and 5 being "strongly agree". In previous research (Judge et al., 2003) the instrument proved reliable with alpha-coefficients of 0,85, 0,80, 0,84 and 0,89. A typical item from this scale is *"I can handle the situations that life brings"*.

Locus of Control is the sense that the individual has control rather than believing in luck (Levenson, 1981). The construct will be measured with eight items. The items are arranged on a Likert-type scale with 1 being "strongly disagree" and 5 being "strongly agree". In previous research (Judge et al., 2003) the instrument proved reliable with an alpha-coefficients of 0,70. A typical item from this scale is *"I can pretty much determine what will happen in my life"*.

Neuroticism refers to the tendency to interpret situations negatively and to be pessimistic (Eysenck & Eysenck, 1968). It will be measured with twelve items. The items are arranged on a Likert-type scale with 1 being "strongly disagree" and 5 being "strongly agree". In previous research (Judge et al., 2003) the instrument proved reliable with an alpha-coefficients of 0,87, 0,84, 0,89 and 0,89. A typical item from this scale is *"I'm a worrier"*.

Health is assessed with a 12-item measure by Goldberg (1979), which measures the general mental health of the individual. The items are arranged on a Likert-type scale with 1 being “never” and 4 being “always”. In previous research (Banks et al., 1980) the instrument proved reliable with an alpha-coefficient of between 0,82 and 0,90. A typical item from this scale is *“Have you in the past two weeks felt you can overcome your difficulties?”*

Depression will be measured by a 17-item scale developed by Bech et al. (2001) and captures the most important symptoms of clinical depression (e.g. feelings of hopelessness, low self-worth and a lack of interest in life etc.) and to what extent they have been present during the last two weeks. The responses are arranged on a four-point Likert-type scale ranging from 1 being “not at all” to 4 being “all the time”. The scale also includes an additional item reflecting to what extent these symptoms have been problematic during the last two weeks. Bech et al. (2001) found that the instrument proved reliable with an alpha-coefficient of 0.94. A typical item from this scale is: *“Have you in the past two weeks felt that life wasn’t worth living?”*

Medication use is a five item measure that reflects the use of different types of medications e.g., for problems with indigestion, pain, sleeping problems, worry or depression. Responses are arranged on a five-point Likert-type scale with 1 being “never” and 5 being “always. A typical item from this scale is: *“How regularly do you do the following: I use medication for pain?”*

1.4.2.4 Statistical Analysis

The SPSS 15.0 for Windows (SPSS, 2007) programme will be used to do the statistical analysis of the data. The following procedures will be used:

- The reliability of the constructs will be tested with Cronbach Alpha coefficient.
- The construct validity of the scales will be determined through exploratory factor analysis.
- Descriptive statistics will be used to analyse the data.

- The relationships between variables will be determined through product moment correlation coefficients.
- For testing the moderating effect of core self-evaluations, and to investigate whether health can be predicted by role overload, powerlessness and core self-evaluations, regression analysis will be used with interaction terms.

1.5 CHAPTER DIVISION

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

Chapter 1: Introduction, problem statement and objectives.

Chapter 2: Research article.

Chapter 3: Conclusions, limitations and recommendations.

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CHAPTER 2

RESEARCH ARTICLE

CORE SELF-EVALUATIONS AS A MODERATOR FOR THE EFFECTS OF ROLE OVERLOAD AND POWERLESSNESS ON ILL HEALTH

M. Bonnet

ABSTRACT

The objective of this research was to determine the relationship between core self-evaluations, role overload, powerlessness and health indicators of employees in the Occupational Risk Division of a large petro-chemical company and to determine whether core self-evaluations act as a moderator in the relationship between role overload and powerlessness on the one hand and health indicators on the other hand. A cross-sectional design was used. The sample consisted of 299 employees from the Occupational Risk Division of the organization. The results showed that a negative relationship exist between role overload, self-esteem, self-efficacy and locus of control. A positive relationship exists between role overload and neuroticism, poor health and depression. Self-esteem, self-efficacy and locus of control are negatively related to neuroticism and health, and neuroticism is positively related to poor health. Results further indicated that self-esteem act as a moderator in the relationship between role overload and general health, but none of the variables of core self-evaluations act as a moderator between role overload and depression or between role overload and use of medication.

OPSOMMING

Die doelstelling van hierdie navorsing was om die verwantskap tussen kern self-evaluerings, roloerlading, magteloosheid en aanduiders van gesondheid onder werknemers van die Beroepsrisiko Divisie van 'n groot petrochemiese maatskappy te bepaal. 'n Verdere doelstelling van die studie was om te bepaal of kern self-evaluerings dien as 'n modererende faktor in die verwantskap tussen rol oorlading en magteloosheid aan die een kant en aanduiders van gesondheid aan die ander kant. 'n Eenmalige dwarsnee opname-ontwerp is gebruik. Die steekproef het bestaan uit 299 werknemers van die Beroepsrisiko Divisie. Die

uitslae het aangedui dat daar 'n negatiewe verband bestaan tussen rol oorlading, selfagting, self-doelmatigheid en lokus van beheer. 'n Positiewe verband bestaan tussen rol oorlading, neurose, swak gesondheid en depressie. 'n Negatiewe verband is gevind tussen selfagting, self-doelmatigheid en lokus van beheer en neurose en gesondheid, asook 'n positiewe verband tussen neurose en swak gesondheid. Resultate het verder aangedui dat selfagting dien as moderator in die verhouding tussen rol oorlading en algemene gesondheid, maar dat geen van die ander veranderlikes van kern self-evaluerings as moderator optree tussen oorlading en depressie of tussen oorlading en gebruik van medikasie nie.

Employees in the Occupational Risk Division (ORD) of a large petrochemical company experience many difficult situations on a regular basis. This division of the company comprises the emergency services, the security and the occupational health divisions of the company. Even though every precaution is taken to ensure the safety of employees in the company, accidents and incidents do take place. The employees of the ORD are confronted with gruesome accidents, dangerous accident scenes where they have to enter when everyone else is evacuated, and security breaches where they may have to enter and resolve serious conflict situations. During 2007, two emergency workers of the company committed family murders before committing suicide. The incidents happened within days of each other, and the possibility that their work climate may have contributed to their mental health status was suggested. It is suspected that the stress of the job affects the mental health of emergency personnel and specifically the employees of the ORD. Ways need to be found to reduce these effects.

The Ecosystemic perspective propagates that an individual assigns meaning to things that he or she comes in contact with (Meyer, Moore, & Viljoen, 1997). This meaning represents truth and reality for the individual. The climate in which an individual works is a perception that this individual constructs about the system in which he or she works. The meaning that this perception represents to the individual is influenced by the personal attributes and disposition of the individual, as well as external factors. The effect of the perception about the work climate on the health of the individual may also be influenced by the personal attributes and disposition of the person. This study investigated the role that these personal attributes play in the relationship between the work environment and the health of the individual.

The work environment encompasses a very broad spectrum of situations. This study looked at the organisational climate in general and at role overload and powerlessness as contributing factors to the organisational climate specifically. The effect of the work climate on the health of the employee was investigated and the possible moderating effect of core self-evaluations was explored. Core self-evaluations represent personal beliefs that the individual holds about him or herself, the environment and others.

Organisational climate

Cilliers and Kossuth (2002) state that organisational climate refers to the psychological atmosphere, on a meta-level, and to organisational, interpersonal and individual dimensions, on an operational level. The organisational climate results from the way in which the above mentioned dimensions are managed, the quality of the manager's leadership style as well as the way the individual perceives and reacts to the atmosphere (Cilliers & Kossuth, 2002). Burke and Litwin (1992) further state that the individual employee's frame of reference influences his or her perception of the nature of organisational climate.

If the dimensions of work are managed in such a way that employees perceive that they have no power and are overloaded, they may perceive and experience the climate as stressful. These perceptions may be regarded as stressors that may result in health complaints. One can then describe poor health as a physical and mental manifestation of the negative perceptions of this individual about the work climate. The individual may further develop a negative perception about themselves and their abilities to perform their job. Alternatively, the individual may have great belief in his or her abilities to handle the stress resulting from the negative climate and a positive self-evaluation may prevent negative effects on his or her health. This self-evaluation is a construction of the individual.

The facets of work stress that were of concern in this study are the possible perceptions that there may be too much to do and too little time to do it in, and that the work is too difficult and demanding (role overload). This situation may be exacerbated if said employees further experience a sense that they have little influence and control over their situation (powerlessness). These perceptions may be detrimental to the physical and mental health of the individuals.

Research confirms that work stress affects the health of employees. Lloyd and Foster (2006) quote a substantial body of research that supports the relationship between work stress and illness. It is stated that work stress is considered a contributing factor in the five leading causes of death in the United States. According to Jalajas and Bommer (1999), as well as Paterson and

Cary (2002), employees must cope with demanding jobs in an atmosphere of increasing uncertainty, coupled with the likelihood of diminishing resources. The negative effect on health becomes even more pronounced when it is generally conceded that full-time employees spend more of their waking hours at work than anywhere else (Jalajas & Bommer, 1999; Paterson & Cary, 2002). Bakker, Demerouti and Euwema (2005) found that employees reported the highest levels of fatigue and demoralisation where job demands were high and job resources were low.

The literature makes a distinction between qualitative and quantitative role overload. Taber, Beehr and Walsh (1978) define quantitative overload as the feeling of having too much to do in too little time. Sverke, Hellgren and Öhrming (1999) define qualitative role overload as the sense that the work is too difficult or demanding. Örtqvist and Wincent (2006) state that role stress theory is rooted in the assumption that all individuals perform roles, where a role originates from the expectations about behaviour for a position in a social structure. These expectations define what behavioural requirements or limitations are ascribed to the role, either by the person filling the role or by others associated with the role. Örtqvist and Wincent (2006) further state that when expectations are conflicting, ambiguous, or overloading, the focal person will experience role stress. Role stress is therefore comprised of three facets: (1) role conflict, (2) role ambiguity and (3) role overload. In a meta-analytic review of the literature, Örtqvist and Wincent (2006) found that a number of role stress consequences were especially prominent. These included emotional exhaustion, reduced personal accomplishment, depersonalisation and deteriorations in job satisfaction, organisational commitment and performance as well as increases in tension and the propensity to quit.

Ashford, Lee and Bobko (1989) describe powerlessness as the perception that an individual may have about their ability to counteract threats in the workplace. An individual that is low in feelings of powerlessness should not experience much work stress if they believe that they have the power to counteract threats. If an individual perceives his or her job to be too demanding and that the resources are not available to help him or her in their job, they may develop a perception of being powerless and that they have no or little control to influence the situation. This may result in perceived stress by the individual. Where Örtqvist and Wincent (2006) describe role

ambiguity, role conflict and role overload as facets of work stress, Ashford et al. (1989) also describe powerlessness as a further contributor to work stress.

Core self-evaluations

Research has shown that core self-evaluation as a broad individual trait, is a significant predictor of job satisfaction and job performance (Judge, Erez, Bono, & Thoresen, 2003). According to Dormann, Fay, Zapf and Frese (2006), job satisfaction is believed to reflect an individual's affective and/or cognitive assessment of his or her work conditions and job attributes. Judge, Locke and Durham (1997) introduced the concept of core self-evaluations in an effort to provide a trait that would be a useful predictor of job satisfaction (Judge et al., 2003). Judge et al. (1997) conceptualised core self-evaluations as a broad, latent, higher-order trait indicated by four well-established traits in the personality literature: (a) *self-esteem*, which is the overall value that one places on oneself as a person; (b) *generalised self-efficacy*, which refers to an evaluation of how well one can perform across a variety of situations; (c) *neuroticism*, which represents individuals' tendency to have a negativistic cognitive/explanatory style and to focus on negative aspects of the self; and (d) *locus of control*, which is beliefs about the causes of events in one's life (Judge et al., 2003). Core self-evaluations are therefore fundamental, bottom-line evaluations that an individual holds about himself, the world and others.

Bono and Judge (2003) reason that there is an obvious link between self-esteem and generalized self-efficacy. They define self-esteem as the approval of oneself and the degree one sees oneself as capable, successful, significant and worthy. Generalized self-efficacy is defined as an estimate of one's capability of performing, at a global level and across many contexts (Bono & Judge, 2003). Self-efficacy is also defined by Bandura (1977) as the conviction that one can successfully execute a given behaviour required to produce certain outcomes. It also refers to expectancies in one's capability to mobilize the resources needed to meet situational demands, but not to the differences in outcome expectancies. This relates to perceptions of control over a situation, which in this study also relates to powerlessness. Judge and Bono (2001) found positive correlations between self-efficacy, job satisfaction and job performance.

Robinson and Meier (2005) state that neuroticism has been linked to negative affectivity, a broad tendency to experience negative emotional states and a negative explicit evaluation of the self. They showed that higher levels of neuroticism were associated with lower levels of implicit self-esteem, and that implicit self-esteem predicts displays of negative emotion, therefore suggesting an influence on the mental health of the individual.

Locus of control can be defined as the belief of whom and what is to be held responsible for the consequences of one's behaviour (Schyns & Von Collani, 2002). An internal locus of control means that an individual assigns the consequences of behaviour to him- or herself. External locus of control means that the individual assigns the consequences of behaviour to external forces or other individuals. Ashford et al. (1989) found a positive correlation between an internal locus of control and an individual's perception that he or she has the power to counteract whatever the environment may throw at them. Ashford et al. (1989) also found a positive correlation between powerlessness and work-stress. Therefore, if an individual has an internal locus of control, he may perceive a sense of power over his situation with lower levels of work-stress as the resultant outcome. Work-stress has been proven to be detrimental to the health of individuals (McClean, 2002; Lloyd and Foster, 2006).

Core self-evaluations, health and depression

In this study the health of individuals were assessed by measuring their general health, levels of depression and medication use. Mclean (2002) defines depression as a "whole body illness" that is distinguished by its severity, intensity and duration. It negatively affects how the body feels and determines the mood of the individual. Mclean state that it has been defined as the persistent and sustained feeling that the self is worthless, the world meaningless and the future hopeless. Stress and depression have many similar symptoms and causes and research indicates that there is a direct relationship between inordinate degrees of stress and psychological disorders, such as depression (McClean, 2002).

Distinctions have to be made between neuroticism and depression as the two constructs may easily be confused. Depression as defined by Mclean (2002) is an illness that determines the mood of the individual. Neuroticism on the other hand is described by Robinson and Meier (2005) as a broad dimension of a normal personality. It is a very stable and genetically determined tendency to interpret situations negatively and to be pessimistic. It remains at similar levels regardless of whether one is currently experiencing a mood disorder or not. Neuroticism is a non-conscious as well as a conscious form of negativity (Robinson and Meier, 2005).

Judge, Locke, et al. (1998) describe core self-evaluations as subjective appraisals that are influenced by the deepest assumptions people hold about themselves, other people, and the world. These fundamental beliefs, or core self-evaluations, influence personal appraisals of external events. Core self-evaluations are dispositional in nature and provide the lens through which cognitive or subjective appraisals are perceived (Judge, Locke, & Durham, 1997).

Some studies have been conducted investigating core self-evaluations as a broad individual trait. Judge, Bono, Erez and Locke (2005) state that at the time they did their research, they found 16 investigations of core self-evaluations in the preceding 6 years. In these, core self-evaluations have been related to several criteria – including motivation (Erez & Judge, 2001), job performance (Judge & Bono, 2001), stress (Best, 2003), and leadership (Eisenberg, 2000). According to Judge et al. (2005), the most commonly investigated criterion is job satisfaction. Research relating core self-evaluations to ill health, had specifically found that the overall core self-evaluations factor was an important positive predictor of life satisfaction and a negative predictor of stress, strain and depression (Judge, Erez, Bono and Thoresen, 2002).

Judge et al. (2005) state that how individuals fundamentally see themselves is presumed to influence the way in which they interpret and react to organizational constraints and determine affective responses, such as burnout and job satisfaction. Beehr (1990) view burnout as a form of occupational stress and suggests that it is a process in which characteristics of a working situation cause people to feel discomfort or illness

Best, Stapleton and Downey (2005) conducted an empirical investigation of job burnout as a consequence of a dysfunctional relationship between the person and the work environment. They also investigated the role that core self-evaluations play in this relationship. In the study by Best et al. (2005), job burnout represents an affective reaction to the gradual depletion of employees' intrinsic energetic resources that may ultimately precede ill health.

Best et al. (2005) found that perceptions of organizational practices or policies that constrain the investment of personal resources seem to precipitate burnout responses and that core self-evaluations may operate directly on both burnout and job satisfaction and indirectly on job satisfaction through burnout. Their study suggests that in efforts to reduce burnout and increase satisfaction, it must be understood that the personal component may dampen the positive outcomes for some individuals and enhance them for others. Best et al. (2005) continue to state that failure to find compelling support for a moderator effect of core self-evaluations on the relationship between perceived organizational constraints and job burnout, suggests that it is not necessarily the case that being higher or lower in core self-evaluations protects or predisposes employees to job burnout in the face of organizational constraints. Rather, employees low on core self-evaluations and who perceive a constraining work environment is *at risk* of burning out and becoming ill and dissatisfied.

It was also suggested by Best et al. (2005) that the direct association between core self-evaluations and perceived organizational support suggests that employees who are fundamentally lower in self-esteem, generalized self-efficacy and emotional stability and who have an external locus of control may be more likely to perceive greater constraints in the organizational environment than their counterparts who have high core self-evaluations. Best et al. (2005) state that individuals do not burn out or become ill merely because of work conditions; their core belief systems also play an important role in these responses.

Ashford et al. (1989) and Perrewé et al. (2005) hint at the moderating effect that perceptions and interpretations may have on the correlation between stress and somatic complaints. These authors conceptualise political skill as the individual's belief that he or she controls their

interpersonal work environment. This reinforces the individual's belief that he or she has the ability to act as a causal agent to effect change in the intended direction in their environment and towards goal-achievement. Political skill has been moderately related to certain personality constructs that are reminiscent of self-efficacy beliefs and locus of control. Perrewé et al. (2005) hypothesized that job stressors (role overload) manifest in psychological and physical strains and found that political skill buffers the job stressor – strain relationship. It is therefore conceivable that positive perceptions and evaluations of the self may act as a moderator between perceptions of qualitative and quantitative role overload and powerlessness on the one hand, and ill health on the other, in the ORD of the organisation. More research about the role of core self-evaluations as a moderator between work conditions and the effect thereof on health is necessary (Best et al., 2005).

The general objective of this research was thus to determine the relationship between core self-evaluations, role overload, powerlessness and health of employees in the Occupational Risk Division of a large petro-chemical company. The hypothesized relationship between variables is graphically illustrated in Figure 1 below.

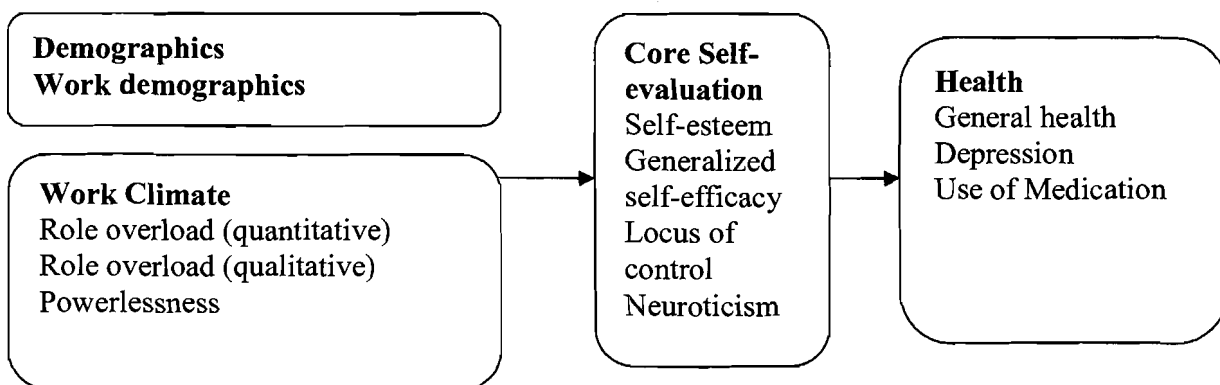


Figure 1. Model depicting the current study

METHOD

Research design

A cross-sectional survey design was used to achieve the research objectives. The most important contributions of survey research according to Kerlinger and Lee (2000, p. 604) “...lies in the rigorous sampling processes, the overall design and implementation of the design of studies, the unambiguous definition and specification of the research problem, and the analysis and interpretation of data.” Survey designs therefore provide the researcher with clear objectives and goals.

Participants

A questionnaire designed to measure each construct of interest was administered to every available employee at the ORD of the company. Four hundred questionnaires were distributed and 299 ($n=299$) useable measures were returned, which represented a response rate of 74,75%. In Table 1 the characteristics of the participants are illustrated.

Table 1

Characteristics of the Participants

Item	Category	Frequency	Percentage
Gender	Female	51,00	17,10
	Male	246,00	82,30
Children under 12	Yes	133,00	44,48
Household	Single (living alone)	66,00	22,07
	Married/Living with partner	173,00	57,86
	Living with parents	39,00	13,04
	Divorced/Separated	10,00	3,34
	Remarried	10,00	3,34
	Education	Grade 10	48,00
	Grade 11	42,00	14,05
	Grade 12	169,00	56,52
	Technical College Diploma	10,00	3,34
	Technicon Diploma	11,00	3,68
	University degree	9,00	3,01
	Postgraduate degree	0,00	0,00
Language	Afrikaans	80,00	26,76
	English	8,00	2,68
	Sepedi	26,00	8,70
	Sesotho	48,00	16,05
	Setswana	3,00	1,00
	isiSwati	28,00	9,36
	Tshivenda	2,00	0,67
	isiNdebele	12,00	4,01
	isiXhosa	25,00	8,36
	isiZulu	54,00	18,06
	isiTsonga	10,00	3,34
	Other	1,00	0,33
	Employment status	Permanent	267,00
Substitute position		8,00	2,68
Employed by the hour		6,00	2,01
Employed by project		2,00	0,67
Trainee		6,00	2,01
Other		8,00	2,68
Part time/Full time	Full time	283,00	94,65
	Part time	10,00	3,34
Union member	Yes	159,00	53,18
	No	130,00	43,48

Table 1 indicates that the majority of the respondents were male (82,30%), 44,48% were living with children under the age of 12 and the majority were living with a partner (57,86%). Most respondents have been educated to the level of Grade 12 (56,52%). Afrikaans represents the language most spoken (26,76%) followed by IsiZulu (18,06%) and Sesotho (16,05%). Most respondents (89,30%) are permanently employed by the company and 95,65% are full-time employees. The majority (53,18%) of the respondents are union members.

Measures

The measuring instrument used was called the “Experiences in the Modern World of Work” questionnaire. This instrument is a compilation of several measures developed by several authors. The instrument measures all the constructs relevant to the study. The relevant constructs that was taken from the questionnaire were: Quantitative role overload, qualitative role overload, powerlessness, core self-evaluations, self-esteem, generalized self-efficacy, locus of control, neuroticism, general health, depression and use of medication.

Quantitative Role Overload, which is defined as the feeling of having too much to do in too little time (Taber et al., 1978) was measured with three items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”. In previous research (Beehr, Walsh, & Taber, 1976) the instrument proved reliable with an alpha-coefficient exceeding 0,74.

Qualitative Role Overload, which is defined as the sense that work is too difficult or demanding (Sverke et al., 1999) was measured with four items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”. Previous South African research found a reliability coefficient of 0,77 for this scale (Sieberhagen, 2006).

Powerlessness, which alludes to the sense of one’s influence over one’s work situation and organisational processes (Ashford et al., 1989), was measured with three items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”.

Ashford et al. (1989) indicate that the instrument proved reliable with an alpha-coefficient of 0,83.

Core Self-Evaluations are the fundamental, bottom-line evaluations that an individual holds about himself, the world and others (Judge et al., 1997). It is a higher-order construct for the traits of self-esteem, generalized self-efficacy, locus of control and neuroticism.

Self-esteem was measured with ten items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”. A typical item from this scale is “*On the whole, I am satisfied with myself*”. In previous research (Judge et al., 2003) the instrument proved reliable with alpha-coefficients greater than 0,80.

Generalized Self-efficacy is the beliefs about one’s capability to achieve what one sets out to do (Judge et al., 1998). The construct was measured with eight items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”. A typical item from this scale is “*I can handle the situations that life brings*”. In previous research (Judge et al., 2003) the instrument proved reliable with alpha-coefficients of 0,85, 0,80, 0,84 and 0,89.

Locus of Control is the sense that the individual has control rather than believing in luck (Levenson, 1981). The construct was measured with eight items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”. A typical item from this scale is “*I can pretty much determine what will happen in my life*”. In previous research (Judge et al., 2003) the instrument proved reliable with an alpha-coefficients of 0,70.

Neuroticism refers to the tendency to interpret situations negatively and to be pessimistic (Eysenck & Eysenck, 1968). It was measured with twelve items. The items are arranged on a Likert-type scale with 1 being “strongly disagree” and 5 being “strongly agree”. A typical item from this scale is “*I’m a worrier*”. In previous research (Judge et al., 2003) the instrument proved reliable with an alpha-coefficients of 0,87, 0,84, 0,89 and 0,89.

Health was assessed with a 12-item measure by Goldberg (1979), which measures the general mental health of the individual. The items are arranged on a Likert-type scale with 1 being “never” and 4 being “always”. A typical item from this scale is *“Have you in the past two weeks felt you can overcome your difficulties?”* In previous research (Banks et al., 1980) the instrument proved reliable with an alpha-coefficient of between 0,82 and 0,90.

Depression was measured by a 17-item scale developed by Bech et al, (2001) and captures the most important symptoms of clinical depression (e.g. feelings of hopelessness, low self-worth and a lack of interest in life) and to what extent they have been present during the last two weeks. The responses are arranged on a four-point Likert-type scale ranging from 1 being “not at all” to 4 being “all the time”. The scale also includes an additional item reflecting to what extent these symptoms have been problematic during the last two weeks. A typical item from this scale is: *“Have you in the past two weeks felt that life wasn’t worth living?”* Bech et al. (2001) found that the instrument proved reliable with an alpha-coefficient of 0,94.

Use of Medication is a five item measure that reflects the use of different types of medications e.g. for problems with indigestion, pain, sleeping problems, worry or depression. Responses are arranged on a five-point Likert-type scale with 1 being “never” and 5 being “always”. A typical item from this scale is: *“How regularly do you do the following: I use medication for pain?”*

Statistical analysis

The SPSS 15.0 for Windows programme (SPSS, 2007) was used to analyse the data. The reliability of the constructs was assessed with Cronbach’s Alpha coefficient. Descriptive statistics were used to analyse the data. The relationships between variables were determined through product moment correlation coefficients. For testing the moderating effect of core self-evaluations, and to investigate whether health can be predicted by role overload, powerlessness and core self-evaluations, regression analyses were used with interaction terms.

RESULTS

Table 2 indicates the descriptive statistics of the measuring instruments.

Table 2

Descriptive Statistics and Cronbach Alpha Coefficients of the Measuring Instruments

Item	Mean	SD	Skewness	Kurtosis	α
Role overload - Quantitative	9,70	2,46	-0,26	-0,08	0,49
Role overload - Qualitative	11,44	3,45	-0,02	-0,16	0,49
Total role overload (Quantitative + Qualitative)	10,57	2,56	-0,17	0,02	0,61
Powerlessness	7,27	2,85	0,34	-0,37	0,48
Self-esteem	39,30	5,76	-0,46	-0,05	0,77
Self-efficacy	33,00	5,84	-0,64	-0,30	0,77
Locus of control	30,31	4,33	-0,50	0,22	0,60
Neuroticism	30,81	10,01	0,53	0,08	0,83
General health	17,60	4,81	0,20	-0,26	0,72
Depression	1,81	0,50	0,71	1,11*	0,90
Medication	8,63	3,87	1,33*	1,14*	0,74

* High skewness and/or kurtosis

According to Nunally and Bernstein (1994), all values of $\alpha = 0,60$ can be regarded as acceptable. Table 2 indicates that Chronbach alpha coefficients of 0,49 were obtained for qualitative and quantitative role overload respectively. These values are unacceptable. In order to improve the reliability, the qualitative and quantitative role overload scales were collapsed into a Total Overload factor, with a more acceptable Chronbach alpha coefficient of 0,61. Powerlessness obtained a Chronbach alpha coefficient of 0,48 which is also unacceptable. Little could be done to improve the reliability of this factor, and it was discarded from subsequent analyses. Acceptable α -values of 0,77 and 0,77 were obtained for self-esteem and self-efficacy respectively. Locus of control obtained an initial α -value of 0,45 which was again deemed unacceptable. When item 4, "I have often found that what is going to happen will happen", was removed, a more acceptable α -value of 0,60 was obtained for locus of control. Neuroticism obtained an acceptable α -value of 0,83 and depression an α -value of 0,90. General health obtained an unacceptable α -value of 0,59 and was improved to 0,72 by disregarding item 8:

“Have you in the past two weeks felt you could overcome your difficulties?” The scores on all the scales, with the exception of medication and depression, are normally distributed. It therefore appears that most of the scales, with the exception of Powerlessness, have acceptable levels of internal consistency when the named items are disregarded.

The relationships between the scales are illustrated in Table 3. Pearson correlations were employed for scales that were normally distributed, and Spearman correlations for scales that were not normally distributed.

Table 3
Correlation Coefficients between Scales

	1	2	3	4	5	6	7
1. Total overload							
2. Self-esteem	-0,33 ^{***}						
3. Self-efficacy	-0,31 ^{***}	0,74 ^{****}					
4. Locus of control	-0,17 ^{**}	0,59 ^{****}	0,55 ^{****}				
5. Neuroticism	0,39 ^{***}	-0,52 ^{****}	-0,45 ^{***}	-0,21 ^{**}			
6. General health	0,29 ^{**}	-0,47 ^{***}	-0,48 ^{***}	-0,42 ^{***}	0,50 ^{****}		
7. Depression	0,23 ^{**}	-0,39 ^{***}	-0,40 ^{***}	-0,36 ^{***}	0,43 ^{***}	0,71 ^{****}	
8. Medication	0,07	-0,15 [*]	-0,08	-0,05	0,25 ^{**}	0,24 ^{**}	0,19 ^{**}

^{***} Correlation is significant at the 0,01 level (2-tailed).

^{**} Correlation is significant at the 0,05 level (2-tailed).

⁺ Correlation is practically significant $r \geq 0,30$ (medium effect)

⁺⁺ Correlation is practically significant $r \geq 0,50$ (large effect)

Table 3 shows that Total Overload showed a statistically significant negative relation to Self-esteem (practically significant, medium effect), Self-efficacy (practically significant, medium effect) and Locus of Control. Total overload showed statistically significant positive correlations with Neuroticism (practically significant, medium effect), (poor) General Health and Depression. Self-esteem showed practically significant positive correlations with large effect sizes with Self-efficacy and Locus of Control, and practically significant negative correlations with Neuroticism (large effect), General health (medium effect) and Depression (medium effect). Self-efficacy in turn showed a strong positive correlation with Locus of Control (practically significant, large

effect), and negative, practically significant correlations of medium effect with Neuroticism, (poor) General health and Depression. Locus of Control was statistically significantly negatively related to Neuroticism, General health (practically significant, medium effect) and Depression (practically significant, medium effect). Neuroticism was strongly (practically significant, large effect) related in a positive direction to (poor) General health and Depression (practically significant, medium effect), and statistically significantly related to Use of Medication. Poor General health showed a strong positive (practically significant, large effect) correlation with Depression, and a statistically significant correlation with Use of Medication. Finally, Depression and Use of Medication were statistically significantly positively related.

The results of a multiple regression analysis with Depression as dependent variable are presented next. Age, gender and education were entered as control variables. The independent variables of Total overload, Self-esteem, Self-efficacy, Locus of control and Neuroticism were entered in the second step. Finally, the interaction terms of the indicators of core self evaluations with Total overload were entered to test their hypothesized moderating effect. Results are reported in Table 4.

Table 4

Multiple Regression Analyses with Depression as Dependent Variable

Model		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	2,53	0,31		8,18	0,00	3,05	0,22	0,05	0,05
	Age	0,00	0,00	-0,09	-1,27	0,21				
	Gender	-0,13	0,11	-0,09	-1,21	0,23				
	Education	-0,08	0,03	-0,18	-2,49	0,01*				
2	(Constant)	2,00	0,33		6,00	0,00	5,83	0,34	0,11	0,09
	Age	0,00	0,00	-0,10	-1,42	0,16				
	Gender	-0,15	0,10	-0,10	-1,48	0,14				
	Education	-0,07	0,03	-0,15	-2,07	0,04*				
	Total Overload	0,05	0,01	0,26	3,68	0,00*				
3	(Constant)	1,86	0,30		6,15	0,00	9,44	0,55	0,30	0,21
	Age	0,00	0,00	-0,04	-0,68	0,50				
	Gender	-0,07	0,09	-0,05	-0,78	0,43				
	Education	-0,02	0,03	-0,05	-0,70	0,49				
	Total Overload	0,03	0,01	0,13	1,98	0,05*				
	Self-Esteem	0,01	0,01	0,09	0,86	0,39				
	Self-Efficacy	-0,03	0,01	-0,27	-2,72	0,01*				
	Locus of Control	-0,03	0,01	-0,21	-2,53	0,01*				
	Neuroticism	0,01	0,00	0,18	2,23	0,03*				
4	(Constant)	1,85	0,32		5,81	0,00	6,52	0,56	0,31	0,01
	Age	0,00	0,00	-0,04	-0,65	0,52				
	Gender	-0,08	0,10	-0,06	-0,89	0,38				
	Education	-0,02	0,03	-0,05	-0,68	0,49				
	Total Overload	0,03	0,02	0,15	1,98	0,05*				
	Self-Esteem	0,01	0,01	0,08	0,79	0,43				
	Self-Efficacy	-0,03	0,01	-0,29	-2,76	0,01*				
	Locus of Control	-0,02	0,01	-0,19	-2,22	0,03*				
	Neuroticism	0,01	0,00	0,18	2,24	0,03*				
	Total Overload x Self-Esteem	0,00	0,00	-0,08	-0,57	0,57				
	Total Overload x Self-Efficacy	0,00	0,00	-0,01	-0,05	0,96				
	Total Overload x Neuroticism	0,00	0,00	-0,11	-1,24	0,22				
	Total Overload x Locus of Control	0,00	0,00	-0,06	-0,61	0,54				

Table 4 summarises the regression analyses with Age, Gender, Education, Total overload, Self-esteem, Self-efficacy, Locus of control, Neuroticism and interaction terms as predictors of Depression. When only the control variables of age, gender and education are considered in Step 1 it can be seen that 5% of the variance in Depression is predicted. However, only participants' level of education makes a statistically significant contribution. Step 2 indicates that in addition to level of education, participants' experience of overload contributes an additional 6% to the variance explained in their experience of depression. When entering the indicators of core self-evaluations in Step 3 it can be seen that Self-efficacy, Locus of control and Neuroticism explain an additional 19% of the variance in participants' experience of depression. The direction of the beta coefficients confirm that Self-efficacy and Locus of control are negatively, and Neuroticism positively, related to Depression. Once it is accounted for core self-evaluations the effect of education in predicting experiences of depression however disappears. To determine whether core self-evaluations serve as a moderator, interaction terms were included in the fourth step in the regression. The interaction terms accounted for an additional 1% of variance in Depression, however, none of these terms reached statistical significance.

The results of a multiple regression analysis, with General health as dependent variable, are reported in Table 5.

Table 5

Multiple Regression Analyses with General Health as Dependent Variable

Model		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	25,63	2,71		9,44	0,00	4,33	0,25	0,06	0,06
	Age	0,00	0,00	-0,09	-1,22	0,23				
	Gender	-1,93	0,88	-0,15	-2,19	0,03*				
	Education	-0,82	0,30	-0,19	-2,69	0,01*				
2	(Constant)	19,79	2,90		6,83	0,00	8,60	0,39	0,15	0,09
	Age	0,00	0,00	-0,09	-1,41	0,16				
	Gender	-2,04	0,84	-0,16	-2,43	0,02*				
	Education	-0,71	0,29	-0,17	-2,45	0,02*				
	Total Overload	0,57	0,13	0,30	4,48	0,00*				
3	(Constant)	19,09	2,53		7,55	0,00	14,29	0,62	0,38	0,23
	Age	0,00	0,00	-0,05	-0,80	0,42				
	Gender	-1,01	0,74	-0,08	-1,36	0,17				
	Education	-0,17	0,26	-0,04	-0,66	0,51				
	Total Overload	0,21	0,12	0,11	1,71	0,09*				
	Self-Esteem	-0,03	0,08	-0,04	-0,40	0,69				
	Self-Efficacy	-0,12	0,08	-0,14	-1,55	0,12				
	Locus of Control	-0,22	0,08	-0,20	-2,72	0,01*				
	Neuroticism	0,15	0,04	0,31	4,14	0,00*				
4	(Constant)	18,55	2,56		7,26	0,00	10,38	0,64	0,40	0,02
	Age	0,00	0,00	-0,05	-0,80	0,43				
	Gender	-1,02	0,74	-0,08	-1,38	0,17				
	Education	-0,12	0,26	-0,03	-0,47	0,64				
	Total Overload	0,24	0,13	0,13	1,95	0,05*				
	Self-Esteem	-0,07	0,08	-0,08	-0,80	0,43				
	Self-Efficacy	-0,07	0,08	-0,08	-0,88	0,38				
	Locus of Control	-0,20	0,08	-0,18	-2,40	0,02*				
	Neuroticism	0,14	0,04	0,30	4,03	0,00*				
	Total Overload x Self-Esteem	0,09	0,04	0,33	2,53	0,01*				
	Total Overload x Self-Efficacy	-0,07	0,04	-0,22	-1,80	0,07				
	Total Overload x Neuroticism	0,01	0,02	0,03	0,38	0,71				
	Total Overload x Locus of Control	-0,06	0,03	-0,14	-1,60	0,11				

Table 5 summarises the regression analyses with Age, Gender, Education, Total overload, Self-esteem, Self-efficacy, Locus of control, Neuroticism and interaction terms as predictors of General health. When only the control variables of age, gender and education are considered in Step 1 it can be seen that 6% of the variance in General health is predicted by participants' age, gender and level of education. Only gender and level of education contribute significantly to the variance explained. Step 2 indicates that in addition to gender and level of education, participants' experience of overload contributes an additional 9% to the variance explained in their General health. When entering the indicators of core self-evaluations in Step 3 it can be seen that Locus of control and Neuroticism explain an additional 23% of the variance in participants' General health. The direction of the beta coefficients confirm that Locus of control is negatively and Neuroticism positively related to poor General health. Once it is accounted for core self-evaluations the effect of gender and education in predicting health however disappears. Step 4 indicates that the interaction term of Total overload and Self-esteem is a statistically significant predictor of General health. This indicates that an additional 2% of the variance in General health is accounted for by the moderating role Self-esteem plays in the translation of the experience of overload in poor general health.

The results of a multiple regression analysis with use of Medication as dependent variable are reported in Table 6.

Table 6

Multiple Regression Analyses with Use of Medication as Dependent Variable

Model		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		B	SE	Beta						
1	(Constant)	19,43	4,80		4,05	0,00	1,15	0,12	0,01	0,01
	Age	0,00	0,00	-0,05	-0,55	0,59				
	Gender	0,08	1,40	0,01	0,05	0,96				
	Education	0,07	0,44	0,01	0,15	0,88				
2	(Constant)	17,85	5,32		3,35	0,00	1,78	0,17	0,03	0,02
	Age	0,00	0,00	-0,05	-0,52	0,60				
	Gender	0,00	1,41	0,00	0,00	1,00				
	Education	0,09	0,44	0,02	0,21	0,84				
	Total Overload	0,15	0,22	0,07	0,69	0,49				
3	(Constant)	20,63	5,70		3,62	0,00	2,61	,29(c)	,08	0,05
	Age	0,00	0,00	-0,09	-0,82	0,42				
	Gender	0,16	1,43	0,01	0,11	0,91				
	Education	0,26	0,47	0,06	0,56	0,58				
	Total Overload	-0,05	0,26	-0,02	-0,20	0,84				
	Self-Esteem	0,02	0,16	0,02	0,12	0,91				
	Self-Efficacy	0,00	0,15	0,00	0,03	0,98				
	Locus of Control	0,00	0,18	0,00	-0,02	0,99				
	Neuroticism	0,11	0,07	0,22	1,58	0,12				
4	(Constant)	20,58	5,99		3,44	0,00	2,05	0,32	0,10	0,05
	Age	0,00	0,00	-0,09	-0,82	0,41				
	Gender	0,27	1,48	0,02	0,18	0,86				
	Education	0,25	0,47	0,06	0,53	0,60				
	Total Overload	-0,06	0,28	-0,03	-0,23	0,82				
	Self-Esteem	0,06	0,17	0,07	0,34	0,73				
	Self-Efficacy	-0,09	0,16	-0,11	-0,57	0,57				
	Locus of Control	-0,01	0,19	-0,01	-0,08	0,94				
	Neuroticism	0,09	0,07	0,18	1,29	0,20				
	Total Overload x Self-Esteem	0,00	0,07	0,01	0,02	0,98				
	Total Overload x Self-Efficacy	0,10	0,07	0,29	1,45	0,15				
	Total Overload x Neuroticism	0,05	0,03	0,24	1,58	0,12				
	Total Overload x Locus of Control	-0,02	0,08	-0,05	-0,31	0,76				

Table 6 shows that none of the independent variables or the interaction terms had any statistically significant effect in predicting the use of medication by participants. Although 10% of the variance is explained by these variables, there is clearly an unmeasured variable which acts to influence use of medication, not reflected by these variables.

DISCUSSION

The objective of this study was to determine the relationships between experiences of role overload, powerlessness and health of employees in the OR Division of a petro-chemical company. Additionally, participants' core self-evaluations and their possible moderating effect between overload, powerlessness and health were also considered.

The statistical analysis indicated that the measure for Powerlessness was not reliable and the scale was subsequently dropped from further analyses. The reliabilities for Quantitative and Qualitative Role overload were also not satisfactory and their results were collapsed into a Total role overload factor to improve the reliability of the measure. Although the measure of Role overload has previously been used successfully in South Africa (Sieberhagen, 2006), the measure of Powerlessness has not. The scale has previously been investigated in international research (Ashford et al., 1989), but did not work in the current sample. All of these scales are made up of only a few items, which may have negatively affected the reliabilities. Although the scales were taken from the international literature, the South African context may have also played a further role: The language used in the questionnaire is English and only 2,68% of the respondents indicated English as their first language. This could have played a significant role in the reliabilities of the scales. True to the ideas of Judge et al. (1997), the indicators of core-self evaluations were strongly related. Also, relationships were in the hypothesized direction, with self-esteem, self-efficacy and locus of control positively related, and all these in turn negatively related to neuroticism.

In terms of the relationships between the observed constructs, it is seen that when participants' experiences of role overload increase, their self-esteem, self-efficacy and locus of control decrease, or in the case of locus of control, becomes more external. Bakker et al. (2005) found that employees reported the highest levels of fatigue and demoralisation where job demands were high and job resources were low. The opposite could also be true; where participants experience an internal locus of control and high self-esteem and self-efficacy, they may be less likely to experience feelings of overload. This is consistent with the findings of Burke and Litwin (1992), who found that the individual employee's frame of reference influences his or her perception of the nature of organisational climate. In a meta-analytic review of the literature, Örtqvist and Wincent (2006) found that a number of role stress consequences were especially prominent including emotional exhaustion, reduced personal accomplishment and depersonalisation. When the employees of the ORD are overloaded, they may experience feelings of inadequacy and reduction of personal accomplishment. This influences their levels of self-esteem and self-efficacy negatively and they tend to develop a more external locus of control. The fact that they are not able to fulfil their obligations in the manner they would like to, may negatively influence their perceptions of themselves. On the other hand, the findings may also mean that their self-perceptions also have an influence on their perceptions of overload.

It was further seen that participants' experiences of overload related positively to their levels of neuroticism, poor health and experiences of depression. When the employees of the ORD experience perceptions of role overload they may become negative and their mental health may deteriorate. This is consistent with previous international research (Jalajas & Bommer, 1999; Lloyd & Foster, 2006; Örtqvist & Wincent, 2006; Paterson & Cary, 2002) which confirms that higher experiences of overload lead to higher levels of neuroticism, depression and poor general health. Best et al. (2005) also found that perceptions of organizational practices or policies that constrain the investment of personal resources seem to precipitate burnout responses. When the employees of the ORD are overloaded, they may become so demoralised that they view everything through a negative lens which affects their mental health negatively.

Self-esteem related negatively to levels of neuroticism, general health, depression and the use of medication. Participants' self-efficacy and locus of control also related negatively to their levels of neuroticism, general health, depression and the use of medication. These results are consistent with research relating core self-evaluations to ill health. Other research have found that self-esteem, self-efficacy and locus of control and low levels of neuroticism are important positive predictors of life satisfaction and negative predictors of stress, strain and depression (Judge et al., 2002). It therefore seems that those participants with higher levels of self-esteem, self-efficacy and external locus of control, report lower levels of neuroticism, depression, poor general health and use of medication. The research of Best et al. (2005) suggests that efforts to reduce the effects of a negative work climate on health must understand that the personal component may dampen the positive outcomes for some individuals and enhance them for others. The personal perceptions of self of the participants do seem to have an influence on their health. Positive self-perceptions dampen neurotic tendencies and positively affect the participants' health.

In terms of the indicators of negative affect (neuroticism) and poor health, depression and the use of medication, all relationships were statistically significant and positive. This relationship confirms the findings of Robinson and Meier (2005), which indicated that when one of these states increase, the others are likely to do the same. In this study (Robinson & Meier, 2005), neuroticism is associated with both conscious and non-conscious evaluations of the self and implicit self-esteem shares an intimate relation with negative affectivity and ill health. When the employees of the ORD view their situation through a negative lens, it affects their interpretation of their mental and physical health. Such negativity also increases the likelihood that they will perceive their environment in a negative light which have been shown to have a detrimental effect on health. In time this may result in a vicious circle of negativity.

In predicting participants' experience of depression, it was seen that their experiences of overload, levels of self-efficacy, locus of control and negative affect (Neuroticism) could be used. The results confirm that greater overload experiences, poor self-efficacy, an external locus of control and high levels of negative affect are predictive of depression. Depression represents an affective reaction to the gradual depletion of employees' intrinsic energetic resources. The

factors in combination can therefore be addressed in order to prevent depression amongst the employees of the ORD. None of the variables of core self-evaluations act as a moderator in the relationship between overload and depression.

In predicting participants' general health, it was seen that their experiences of overload, locus of control, neuroticism and the interaction between overload and self-esteem can be used. This indicates that greater overload experiences, an external locus of control, high levels of negative affect (Neuroticism) and the interaction between high levels of overload and low self-esteem, are predictive of poor general health. Employees that experience high levels of overload in combination with an external locus of control, high levels of negative affect and low self-esteem are at risk for poor general health. Like with depression, poor general health again represents an affective response to a depletion of intrinsic energetic resources. The only variable of core self-evaluations that acts as a significant moderator in the relationship between overload and general health is self-esteem. It seems that individuals who have the most faith in their capabilities, the strongest beliefs in their own abilities to achieve success and are generally most satisfied with themselves are best able to negate the negative effects of overload on their subsequent health.

These results are consistent with results found in the literature. Örtqvist and Wincent (2006) found that role stress (of which overload is one facet) has several consequences including emotional exhaustion, reduced personal accomplishment, depersonalisation, deteriorations in job satisfaction, organisational commitment, performance, and increases in propensity to quit and tension. Judge et al. (2002) found that the overall core self-evaluations factor, of which self-efficacy, locus of control and neuroticism are part, was an important positive predictor of life satisfaction and a negative predictor of stress, strain and depression.

In predicting use of medication it was found that none of the scales predict medication use to a significant degree. The reason for this could be that some other factor that is not represented in this measurement has an influence on the results. Whether an employee of the ORD uses medication or not may therefore be dependant on some other variable that is not included in this study. Also, there might be an issue of causality here in terms of the indicators of health used in

this study. An increase in the use of medication might be argued to only transpire after an individual experiences poorer general health or depression. This relationship can however not be clarified using cross-sectional data.

The results indicate that core self-evaluations, as a broad individual trait, do not act as a moderator for the relationship between overload and health. Core self-evaluations do not change the relationship between overload and health to a significant degree. According to Holmbeck (1997), a moderator variable is something that affects the relationship between two variables. Results indicate that the only variable that seems to act as a significant moderator is self-esteem. Self-esteem acts as a moderator in the relationship between overload and general health. These results confirm the results of Best et al. (2005). They state that failure to find compelling support for a moderator effect of core self-evaluations on the relationship between perceived organizational constraints and job burnout suggests that it is not necessarily the case that being higher or lower in core self-evaluations protects or predisposes employees to job burnout in the face of organizational constraints. Rather, employees low on core self-evaluations and who perceive a constraining work environment is *at risk* for burning out and becoming ill and dissatisfied. This also means that individuals high on core self-evaluations are less likely to perceive their work climate as overloading and suffer mental health problems from it. The personal perception of self does therefore play an important part in the whole relationship between overload and health. It affects the quality of the perceptions that the respondents may develop about their work climate, and the likelihood that they may become ill but it does not guarantee any moderating role.

RECOMMENDATIONS AND LIMITATIONS

It is not clear when or why the respondents experience role overload. The nature of the work at the ORD is such that employees often have to respond to incidents. These incidents may be serious or less serious in nature, but in all cases the employees reportedly react with a rush of adrenalin which does not always have an outlet. They are also not provided with the opportunity to be debriefed or helped to get rid of the excess energy. One can speculate that this may in time

result in a perception of overload. This study has shown that such overload can result in a deterioration of the mental health of the employees. Total overload does not affect their physical health in a direct way but the study has shown that there is a correlation between depression, general health and medication use. It could be construed that total overload affects their physical health indirectly.

This study failed to confirm the moderating role of core self-evaluations as a broad individual trait in the relationship between overload and health. The only variable of core self-evaluations that moderate any relationship is self-esteem in the relationship between overload and general health.

It is recommended that the reasons for the perceptions of overload need to be investigated. If some outside elements are the cause of these perceptions, they need to be addressed. If the perception exists due to general negative affectivity and low core self-evaluations, programmes aimed at strengthening core self-evaluations and lowering negative affectivity may negate perceptions of overload. Levels of core self-evaluations may also exist due to some other factors that have nothing to do with the work environment, for instance family problems and social factors. Once again, programmes that target these core self-evaluations may have a broader positive effect on the family and social systems of the respondents.

Serious limitations of this study are the lack of qualitative information to substantiate speculations about the reasons for the results as well as the fact that data was only cross-sectional. Longitudinal data may have improved the reliabilities of the scales. Further qualitative and longitudinal studies are recommended.

The fact that the questionnaire is not standardised for the South African population represent another limitation of the study. An overwhelming 92,32 % of the respondents indicated a language other than English as their first language. For many of them some of the terms may have been quite foreign.

A further limitation of the study is the fact that in some cases very few items are used to measure the constructs in the questionnaire. Powerlessness for instance is measured by only three items, qualitative role overload by four items and quantitative role overload by three items. It is recommended that future studies with these constructs use more comprehensive measures to improve the reliability of the scales.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The purpose of this chapter is to provide an analysis and discussion of the literature and empirical results of the study. Conclusions are made with regard to the research objectives which were identified for this study. The chapter answers the research questions put forth in the first chapter. The limitations of the current study will be pointed out. Finally, recommendations for the organisation and future research are made.

3.1 CONCLUSIONS

3.1.1 Conclusions from the literature

The following conclusions can be made in respect of the constructs of role overload (qualitative and quantitative), powerlessness, core self-evaluations and health (as indicated by depression, general health and use of medication).

The conceptualisation of **Role overload** in the literature is rooted in role stress theory. Örtqvist and Wincent (2006) state that role stress theory is rooted on the assumption that all individuals perform roles, where a role originates from the expectations about behaviour for a position in a social structure. These expectations define what behavioural requirements or limitations are ascribed to the role, either by the person filling the role or by others associated with the role. Örtqvist and Wincent (2006) further state that when expectations are conflicting, ambiguous, or overloading, the focal person will experience role stress. Role stress is therefore comprised of three facets: (1) role conflict, (2) role ambiguity and (3) role overload. The literature makes a distinction between qualitative and quantitative role overload. Taber, Beehr and Walsh (1978) define quantitative overload as the feeling of having too much to do in too little time. Sverke, Hellgren and Öhrming (1999) define qualitative role overload as the sense that the work is too difficult or demanding. The literature supports the negative influence of role overload on health (Lloyd and Foster, 2006; Jalajas and Bommer, 1999; Paterson and Cary, 2002).

Powerlessness is conceptualised in the literature as the perception that an individual may have about their ability to counteract threats in the workplace (Ashford, Lee & Bobko, 1989). An individual that is low in powerlessness should not experience much work stress if they believe that they have the power to counteract threats. If an individual perceives his or her job to be too demanding and that the resources are not available to help him or her in their job, they may develop a perception of powerlessness and that they have no or little control to influence the situation. This may result in perceived stress by the individual. Where Örtqvist and Wincent (2006) describe role ambiguity, role conflict and role overload as facets of work stress, Ashford et al. (1989) also describe powerlessness as a further contributor to work stress.

Core self-evaluations is conceptualised by Judge, Locke and Durham (1997) as a broad, latent, higher-order trait indicated by four well established traits in the personality literature: (a) *self-esteem*, which is the overall value that one places on oneself as a person; (b) *generalised self-efficacy*, which refers to an evaluation of how well one can perform across a variety of situations; (c) *neuroticism*, which represents individual's tendency to have a negativistic cognitive/explanatory style and to focus on negative aspects of the self; and (d) *locus of control*, which is beliefs about the causes of events in one's life (Judge, Erez, Bono, & Thoresen, 2003). Core self-evaluations are therefore fundamental, bottom-line evaluations that an individual holds about himself, the world and others. The research of Judge et al., (2003) has shown that core self-evaluation as a broad individual trait is a significant predictor of job satisfaction and job performance. Other research have related core self-evaluations to several criteria – including motivation (Erez & Judge, 2001), job performance (Judge & Bono, 2001), stress (Best, 2003), and leadership (Eisenberg, 2000). Research relating core self-evaluations to ill health specifically have found that the overall core self-evaluations factor was an important positive predictor of life satisfaction and a negative predictor of stress, strain and depression (Judge, Erez, Bono and Thoresen, 2002).

Depression is conceptualised in the literature as a “whole body illness” that is distinguished by its severity, intensity and duration. It negatively affects how the body feels and determines the mood of the individual. Mclean (2002) state that depression has been defined as the persistent and sustained feeling that the self is worthless, the world meaningless and the future hopeless. Stress and depression have many similar symptoms and causes and research

indicates that there is a direct relationship between inordinate degrees of stress and psychological disorders, such as depression (McClean, 2002).

General health in this study referred to the general mental health of the individual.

Use of medication in this study refers to the use of different types of medications e.g., for problems with indigestion, pain, sleeping problems, worry or depression.

3.1.2 Conclusions from the empirical study

Conclusions are made in the following section in respect of the specific research objectives set in Chapter 1, and the empirical findings obtained in the present study.

- *To determine the relation between overload (qualitative and quantitative), powerlessness, core self-evaluations and health (as indicated by depression, general health and use of medication) in a sample of employees from the Occupational Risk Division of a large petro-chemical company.*

The statistical analysis indicated that the measure for powerlessness was not reliable and it was subsequently dropped from the analysis. The reliabilities for quantitative and qualitative role overload were also not satisfactory and their results were collapsed into a total role overload factor to improve the reliability of the measure.

In terms of the relationships between the observed constructs, it is seen that when participants' experiences of role overload increase, their self-esteem, self-efficacy and locus of control decrease, or in the case of locus of control, becomes more external. When the employees of the ORD are overloaded they may experience feelings of inadequacy. This influences their levels of self-esteem and self-efficacy negatively and they tend to develop a more external locus of control. On the other hand, the findings indicate that their self-perceptions also have an influence on their perceptions of overload. High self-esteem, self-efficacy and an internal locus of control may influence the perceptions that individuals may develop about feeling overloaded. They may then perceive the work environment to be less demanding.

It was further seen that participants' experiences of overload related positively to their levels of neuroticism, poor health and experiences of depression. When the employees of the ORD experience perceptions of role overload they tend to become negative and their mental health may deteriorate.

Furthermore, the indicators of core-self evaluations were strongly related. Also, relationships were in the hypothesized direction, with self-esteem, self-efficacy and locus of control positively related, and all these in turn negatively related to neuroticism.

Self-esteem related negatively to levels of neuroticism, general health, depression and the use of medication. Participants' self-efficacy and locus of control also related negatively to their levels of neuroticism, general health and depression and the use of medication. The personal perceptions of self of the participants do seem to have an influence on their health. Positive self-perceptions dampen neurotic tendencies and positively affect the participants' health.

In terms of the indicators of negative affect (neuroticism) and poor health, depression and the use of medication, all relationships were statistically significant and positive. When the employees of the ORD view their situation through a negative lens, it affects their interpretation of their mental and physical health. Such negativity also increases the likelihood that they will perceive their environment in a negative light, which may have a further detrimental effect on their health.

- *To establish whether overload (qualitative and quantitative), powerlessness and core self-evaluations can be used to predict depression, general health and the use of medication for employees from the Occupational Risk Division of a large petro-chemical company.*

In predicting participants' experience of depression, it was seen that their experiences of overload, levels of self-efficacy, locus of control and negative affect (Neuroticism) could be used. The results confirm that greater experiences of overload, poor self-efficacy, an external locus of control and high levels of negative affect are predictive of depression. No moderating effect for core self-evaluations on depression was observed.

In predicting participants' general health, it was seen that their experiences of overload, locus of control, neuroticism and the interaction between overload and self-esteem can be used.

This indicates that greater overload experiences, an external locus of control, high levels of negative affect (Neuroticism) and the interaction between high levels of overload and low self-esteem, are predictive of poor general health.

In predicting use of medication it was found that none of the scales predict medication use to a significant degree. The reason for this could be that some other factor that is not represented in this measure has an influence on the results.

- *To determine whether core self-evaluations moderate the relationship between role overload (qualitative and quantitative) and powerlessness on the one hand and health (as indicated by depression, general health and use of medication) on the other hand of employees from the Occupational Risk Division of a large petro-chemical company.*

Results could not confirm that core self-evaluations as a broad individual trait acts as a moderator in the relationship between overload on the one hand and depression and general health on the other hand. The only variable of core self-evaluations that seems to act as a moderator is self-esteem, specifically, in the relationship between overload and general health. The only variable of core self-evaluations that acts as a significant moderator in the relationship between overload and general health is self-esteem. It seems that individuals who have the most faith in their capabilities, the strongest beliefs in their own abilities to achieve success and are generally most satisfied with themselves are best able to negate the negative effects of overload on their subsequent health.

3.2 LIMITATIONS

The lack of qualitative information to substantiate speculations about the reasons for the results as well as the fact that data was only cross-sectional, constitute one of the limitations of this study. Longitudinal data may have improved the strength of conclusions drawn from these results. Further qualitative and longitudinal studies are recommended.

The fact that the questionnaire is not standardised for the South African population represent another limitation of the study. An overwhelming 92,32 % of the respondents indicated a language other than English as their first language. For many of them some of the terms may have been quite foreign. Most of the measures used in this study were taken from the

international literature where they are well established. However, the dimensions of powerlessness and qualitative and quantitative role overload did not work well in the current sample. The unique South African context, characterised by low levels of education in the general population and large cultural and language differences, may have been an inhibiting factor. Also, many of the measures comprise only a few items, which could have impacted negatively on their reliability.

3.3. RECOMMENDATIONS

3.3.1 RECOMMENDATIONS TO THE ORGANISATION

It is recommended that the reasons for the perceptions of overload need to be investigated. If some outside elements are the cause of these perceptions, they need to be addressed. Should it become clear that perceptions of overload are due to some organisational factors, these also need to be addressed. If the perception exists due to general negative affectivity and low core self-evaluations, programmes aimed at strengthening core self-evaluations and lowering negative affectivity may negate perceptions of overload. Levels of core self-evaluations may also exist due to some other factors that have nothing to do with the work environment, for instance family problems and social factors. Once again, programmes that target these core self-evaluations may have a broader positive effect on the family and social systems of the respondents.

It was seen that the occurrence of depression and poor general health can be predicted by high perceptions of overload, low self-esteem, low self-efficacy beliefs, an external locus of control and high levels of neuroticism. These findings confirm the learned helplessness theory that states that susceptibility to depression and poor mental health depends on the person's experience with controlling the environment and the person's attributional style (Sue, Sue & Sue, 2003). By attending to employees that exhibit low self-esteem, low self-efficacy beliefs, an external locus of control and high levels of neuroticism, incidence of depression and poor mental health may be prevented. It is advisable that employees are encouraged to make use of the employee assistance programme provided by the company. It would even be better if the particular division employed a counsellor on a full time basis. The employees need access to a counsellor that knows and understands the environment they work in and with whom they can build a relationship of trust. Such a counsellor would also be able

to precipitate possible personal problems before they impact negatively on employees' mental health.

The use of medication could not be predicted by any of the scales used in this study. The significance of this for the organisation could be that the use of medication is a manifestation of other issues that may be affecting the employees. If these issues are addressed effectively, the use of medication may then also decline.

3.3.2 RECOMMENDATIONS FOR FUTURE RESEARCH

In some cases very few items were used to measure the constructs in the questionnaire. Powerlessness for instance is measured by only three items, qualitative role overload by four items and quantitative role overload by three items. It is recommended that future studies with these constructs use more comprehensive measures to improve the reliability of the scales. Also, sufficient sample sizes should allow for the investigation of construct equivalence across the multi-cultural and multi-lingual South African workforce. At the moment, there is no guarantee that these constructs are understood exactly the same across language groups.

The prediction of the use of medication may have failed for a variety of reasons. It is indicated that the use of medication may depend on variables such as the presence of depression and general health, where longitudinal data may improve the possibility of predicting medication use. It also needs to be considered that other variables are predictive of the use of medication than the ones considered here.

This particular study will benefit from a repeat with a longitudinal design. Longitudinal data could indicate the stability of scale reliabilities, and the researcher should be able to assess the actual changes in experiences by participants over time. The results may then be more conclusive in many respects.

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