

**Job insecurity: Assessment, causes and consequences in a South African gold
mining group**

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This PhD is dedicated to my father, Nicolaas Jacob Swart.

Although you have joined friends and family in Heaven,
you are my principal role model and I strive to keep your legacy alive!

*“The LORD God is my strength, and he will make my feet like hinds' feet,
and he will make me to walk upon mine high places.*

To the chief singer on my stringed instruments.

-Habakkuk 3:19 (KJV)-

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REMARKS

The reader is reminded of the following:

- The references as well as the editorial style as prescribed by the *Publication Manual (5th edition)* of the American Psychological Association (APA) were followed in this dissertation. This practice is in line with the policy of the Programme in Industrial Psychology of the North-West University to use APA-style in all scientific documents as from January 1999.
- The thesis is submitted in the form of four research articles. The editorial style specified by the *SA Journal of Industrial Psychology* (which agrees largely with the APA style) is used, but the APA guidelines were followed in constructing tables.
- The revised research proposal forms the first chapter of the thesis. Therefore, this chapter is presented in a different voice when compared to subsequent chapters that report on actual results.
- Each chapter has its own reference list.

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SUMMARY

Title: Job insecurity: Assessment, causes and consequences in a South African gold mining group

Key words: Qualitative and quantitative job insecurity, psychometric properties, bias, equivalence, race, culture, language, work stress, coping, safety performance, safety outcomes, job stressors, job challenge, competency demands, internal/external employability perceptions, job satisfaction, turnover intention, feedback, communication with the manager, powerlessness, interpersonal conflict, social support, health

Job insecurity in the workplace has become an increasingly important trend in organisational research. The appraisal of job insecurity by individuals plays a significant part in how reactions manifest in the experiences of workplace stressors, job satisfaction, positive and negative work attributes and social support. However, there is a lack of research regarding specific workplace stressors at work leading to certain outcomes like safety behaviour, turnover intention and mental health, especially within a South African working context. Job insecurity has also been classified as a workplace stressor. The existence of other stressors tends to increase the ultimate effect of insecurity for the individual. The attempts from organisational management to manage this phenomenon are therefore crucial in decreasing the negative effects of job insecurity and increasing the productivity of the organisation. In order to measure the job insecurity levels of employees, it is important to make use of valid and reliable job insecurity measures. An absence of empirical research on validity and reliability studies in terms of job insecurity in South African is evident.

The main objectives of this research were: 1) to establish the psychometric properties of a measure of job insecurity in a selected gold mining company in South Africa; 2) to determine the influence of job insecurity and work stress (i.e. role conflict, clarity and overload) on worker safety performance and if coping could moderate this; 3) to investigate the theoretical and empirical relationships between job stressors (task completion ambiguity and task quality ambiguity), competency demands, employability perceptions, job satisfaction and turnover

intention over time, and 4) to investigate if social support has a mediating effect between positive interpersonal attributes, negative interpersonal attributes, job insecurity and subsequent health.

To achieve the first objective, a cross-sectional design was used ($N = 566$), including various business units of a South African-based gold mining company. The assessment of the psychometric properties of a measure of quantitative and qualitative job insecurity for employees was determined through construct (structural) equivalence, exploratory factor analysis and multivariate analysis of variance to calculate the comparison of the factor structure for the different cultural groups. For qualitative job insecurity, the scale shows low equivalence for the African languages group. Statistically significant differences were found between the levels of job insecurity of employees in terms of gender.

The second objective, concerning the investigation into the relationship of work stress and job insecurity with unsafe behaviour at work, was achieved with across-sectional survey design ($N = 771$). The hypothesised model included the influence of role conflict, role ambiguity, role overload, and job insecurity on unsafe work behaviour. Coping was introduced as a moderator in this relationship. The results indicated that when employees experience work stress and job insecurity, their safety compliance is low. This relationship was also moderated by a coping strategy of Avoidance.

To achieve the third objective, a longitudinal study was conducted and data was gathered by means of an electronic survey, with 771 employees participating at Time 1, and 345 participating at Time 2. Results for predicting employees' turnover intentions, experience of task completion and quality ambiguity, external employability and job satisfaction made a direct contribution in predicting their turnover intention. No mediating role of job satisfaction between job stressors, competency demands and employability perceptions on the one hand and turnover intentions on the other hand, were found.

Addressing the fourth objective in investigating the moderating role of social support between the relationship of experiencing positive interpersonal (communication with the manager and feedback), negative interpersonal experiences (powerlessness and interpersonal conflict), job

insecurity (quantitative and qualitative) and health, was met with a longitudinal random sample of employees in different business units in one selected multi-national mining company based in South Africa ($N = 771$). Results for these employees indicated that all the proposed variables, except feedback from the manager, were statistically significantly related to health. No moderating effect for social support could be found over time, but it was shown that interpersonal conflict at work is a longitudinal predictor of employee health.

By way of conclusion, the implications of the research were discussed and recommendations for managers and for future research were made.

OPSOMMING

Titel: Werksonsekerheid: Assessering, oorsake en gevolge in 'n Suid-Afrikaanse goudmyngroep

Sleutelwoorde: Kwalitatiewe en kwantitatiewe werksonsekerheid, psigometriese eienskappe, vooroordeel, ekwivalensie, ras, kultuur, taal, werkstres, hantering, veiligheidsprestasie, veiligheidsuitkomst, werkstressors, werksuitdaging, bevoegdheidseise, interne/eksterne indienseembaarheidspersepsies, werkstevredenheid, omsetvoornemens, terugvoer, kommunikasie met die bestuurder, magteloosheid, interpersoonlik konflik, sosiale ondersteuning, gesondheid

Werksonsekerheid in die werksplek het toenemend 'n belangrike tendens in organisatoriese navorsing geword. Hoe individue werksonsekerheid beoordeel en daarop reageer speel 'n belangrike rol wanneer hulle stressors, werkstevredenheid, positiewe en negatiewe werkseienskappe en sosiale ondersteuning in die werksplek ervaar. Daar is egter 'n gebrek aan navorsing oor die invloed van spesifieke werksplekstressors op uitkomst soos veiligheidsgedrag, omsetbedoelings en geestelike gesondheid, veral binne die Suid-Afrikaanse werkskonteks. Werksonsekerheid is ook geklassifiseer as 'n werksplekstressor. Die teenwoordigheid van ander stressors het 'n geneigtheid om die invloed van werksonsekerheid vir 'n individu te verhoog. Die pogings van die bestuur van 'n organisasie om hierdie verskynsel te bestuur deur die negatiewe gevolge van werksonsekerheid te verlaag en produktiwiteit te verhoog, is van kardinale belang. Ten einde die vlakke van werksonsekerheid van werknemers te meet, is dit belangrik om gebruik te maak van geldige en betroubare werksonsekerheidsinstrumente. In Suid-Afrika is daar 'n afwesigheid van empiriese navorsing oor die geldigheid en betroubaarheid van werksonsekerheid.

Die belangrikste doelwitte van hierdie navorsing is: 1) om die psigometriese eienskappe van 'n werksonsekerheidsmeetsinstrument binne 'n Suid-Afrikaanse goudmynbedryf te bepaal; 2) om die invloed van werksonsekerheid en werkstres (d.w.s. rolkonflik, rolduidelikeid en roloerlading) op werkerveiligheidsprestasie te bepaal, asook of die hanterinstrategie 'n modererende effek sal

hê; 3) om die teoretiese en empiriese verwantskappe tussen werksstressors (taakvoltooiingonduidelikheid en taakkwaliteitonduidelikheid), vaardigheidseise, indiensneembaarheidspersepsies, werksatisfaksie en omsetbedoelinge oor tyd te bestudeer; en 4) om te ondersoek of sosiale ondersteuning 'n bemiddelende effek tussen positiewe interpersoonlike eienskappe, negatiewe persoonlike eienskappe, werksonsekerheid en daaropvolgende gesondheid het.

Die eerste doelwit is bereik deur 'n dwarsdeursnee-ontwerp te gebruik ($N = 566$) in verskillende sake-eenhede van 'n Suid-Afrikaanse goudmynmaatskappy. Die assessering van die psigometriese eienskappe van 'n kwantitatiewe en kwalitatiewe werksonsekerheidskaal en faktorstruktuurvergelyking is gedoen deur 'n struktuurekwivalensie, verkennende faktorontleding en meerveranderlike variansie-analise te gebruik vir werknemers in verskillende kultuurgroepe. Die kwalitatiewe werksonsekerheidskaal toon 'n lae ekwivalensie vir die Afrikatale groep. Statisties beduidende verskille is gevind tussen die vlakke van werksonsekerheid vir werknemers in terme van geslag.

Die tweede doelwit met betrekking tot die ondersoek na die verhouding van werkstres en werksonsekerheid op onveilige werksgedrag is verkry met 'n dwarsdeursnee-opname-ontwerp ($N = 771$). Die hipotetiese model sluit in die invloed van rolkonflik, rolonduidelikheid, roloorlading en werksonsekerheid op onveilige werksgedrag. Die hantering van stressors is voorgestel as modererende faktor in hierdie verhouding tussen stressors en onveilige gedrag by die werk. Die resultate het aangedui dat wanneer werknemers werkstres en werksonsekerheid ervaar, hul nakoming van veiligheidsreëls laag is. Die verhouding is ook gemodereer deur 'n hanteringsstrategie van vermyding.

Om die derde doelwit te bereik is 'n longitudinale studie gebruik en data is ingesamel deur middel van 'n elektroniese opname waar 771 werknemers in Tyd 1 en 345 in Tyd 2 deelgeneem het. Resultate van werknemers se omsetvoornemens het getoon dat die ervaring van taakvoltooiingsdubbelsinnigheid en taakkwaliteitdubbelsinnigheid, eksterne indiensneembaarheid en werkstevredenheid 'n direkte invloed het op die voorspelling van hul omsetvoornemens. Geen bemiddelende rol van werkstevredenheid tussen werksstressors,

bevoegdheidseise en indiensneembaarheidspersepsies aan die een kant en omsetbedoelings aan die ander kant kon nie gevind word nie.

Om die vierde doelwit te bepaal is die rol van die modererende effek van sosiale ondersteuning tussen die verhouding van positiewe interpersoonlike ervarings (kommunikasie met die bestuurder en terugvoer), negatiewe interpersoonlik ervarings (magteloosheid en interpersoonlike konflik), werksonsekerheid (kwalitatief en kwantitatief) en gesondheid verkry deur 'n longitudinale ewekansige steekproef van werknemers in verskillende sake-eenhede in 'n geselekteerde Suid-Afrikaanse mynboumaatskappy ($N = 771$) te gebruik. Die resultate vir die groep werknemers dui daarop dat al die voorgestelde veranderlikes, behalwe terugvoer van die bestuurder, statisties beduidend ten opsigte van gesondheid was. Geen modererende invloed van sosiale ondersteuning kon gevind word met die verloop van tyd nie, maar daar is wel bevind dat interpersoonlik konflik 'n longitudinale voorspeller van werknemergesondheid is.

Die implikasies van die navorsing is by wyse van gevolgtrekking bespreek en aanbevelings vir bestuur en vir toekomstige navorsing is ook gedoen.

CHAPTER 1

INTRODUCTION

This thesis focuses on the experiences of employees in an environment of job insecurity, in relation to safety behaviour, job stressors, organisational work outcomes and organisational climate in a multi-national gold mining operation.

Chapter 1 contains the problem statement, research objectives and research methodology employed. The chapter starts out with a problem statement, giving an overview of previous related research conducted on job insecurity, job stressors, organisational work outcomes, safety behaviour and organisational climate, linking it with this research project and its research objectives. A discussion of the research method follows, with details regarding the empirical study, research design, study population, measuring instruments and proposed statistical analyses. It concludes with a chapter summary giving an overview of the chapters that comprise this thesis.

1. PROBLEM STATEMENT

In the search to comprehend today's modern working life and its influences on human behaviour, it is of more importance for organisational success to explore the individual experiences relating to the work climate, work attitudes, performance and subsequent health outcomes (Näswall, Hellgren, & Sverke, 2008; Tetrick & Quick, 2003). Many changes (e.g. implementation of new technology, restructuring as a result of cost cutting exercises, inclusion of business units internationally and the increased flexibility of the workforce) in the working environment of organisations, have caught the attention of researchers globally (e.g. Budworth, 2009; Elbert, 2002; Heymans, 2002; Kinnunen, Mauro, Nätti, & Happonen, 2000; Labuschagne, Buitendach, & Bosman, 2005; Probst, Stewart, Gruys, & Tierney, 2007; RP, 2010; Sverke & Hellgren, 2002; Sverke, Hellgren, Näswall, Chirumbolo, De Witte, & Goslinga, 2004; Westman, Etzion, & Danon, 2001). Even for South Africa, that has become more and more part of the global playing field, the impact of job insecurity and remedying of the subsequent consequences have become

very important in order for companies to survive (Bosman, 2005; Dachapalli & Parumasur, 2012; Jorge, 2005; Labuschagne et al., 2005; Ramakau, 2006).

Mining industries globally have been subjected to increasing cost pressures due to the fluctuating price of oil, labour costs that are increasing and capital expenditures to ensure longer mine life (Hall, Copland, & Nagasar, 2007). The balancing act of companies to try and match greater flexibility with capital flexibility has become increasingly difficult in order to survive in the competitive environment (Dansereau, 2006). The impact of globalisation, legal standards and rising competitiveness between organisations influenced the workplace and changed working conditions for individuals (D'Souza, Strazdins, Lim, Broom, & Rodgers, 2003; Farber, 2008; Standing, 2009).

South Africa's mining industry has not escaped these impacts and has consistently been exposed to restructuring since the early 1990's (USSAS, 2004). According to Kruger (2005), factors such as the fluctuating exchange rate, a relatively strong currency and intermediate gold price, takeovers and mergers, downscaling and retrenchments, liquidations, skills shortages, high unemployment rates, labour unrest and closures of business units contributed to the peculiar situation in which this major sector finds itself. In order to stay competitive and lead internationally, the consolidation of the South African gold mining companies has received a lot of attention and action (Groenewald, 2007, 2011; Mbendi, 2007). South Africa's gold mining industry depends largely on how productivity can be increased. The following challenges need to be taken into account in order to increase productivity: **Technical considerations:** Labour-intensive mining with persistently declining ore reserves, together with managing rising costs and the implementation of new technologies (Mogotsi, 2005). **Financial considerations:** The financial and capital cost to maintain deep level mining is high, as well as the development of new shafts that takes time from the point of development to actual gold production. **Human capital considerations:** Decreased work force due to restructuring exercises, old age, and declining health implications. In order to sustain productivity, management of the South African mining industry introduced multi-skilling interventions by offering training and development to employees and increasing the labour flexibility (Dansereau, 2006). **Policy considerations:** The gold mining industry, specifically in South Africa, was also forced to adhere to specific national

legislation in order to address disparities of Apartheid. (Examples of these are: The Mineral and Petroleum Resources Development Act 28 of 2002 (South Africa, 2002), the Employment Equity Act 55 of 1998 (South Africa, 1998) which is a result of Affirmative Action processes and submitting of Employment Equity (EE) plans to Government, Broad-based Black Economic Empowerment Act 53 of 2003 (South Africa, 2003), Labour Relations Act 66 of 1995 (South Africa, 1995) and the Occupational Health and Safety Act 85 of 1993 (South Africa, 1993). Increasing costs of deteriorating mental and health well-being as a result of experiencing job insecurity could not be afforded by these South African mining companies (Botha, 2006; Van Schalkwyk, 2005; Van Zyl, 2005). Therefore the absence of research and subsequent recommendations of the experiences of job insecurity by individuals in South Africa have necessitate the need to take further action in the investigating of this complex construct (Van Wyk & Pienaar, 2008).

The recent global recession did not only mean a reduction in the labour force and jobs, but have put pressure on company management to ensure that employees become more productive and at the same time maintain safety (Business World, 2009). The inability of mining companies to comply with safety legislation has increased fatality and injury statistics exposing them to legal and union involvement (Barker, 2009). Thus, the resultant restructuring and subsequent reducing of the work force and jobs imply that additional tasks, higher job demands in general and shorter completion times are inflicted on employees, which lead to increased experiences of stress (Rundmo & Sjöberg, 1998).

The multidimensionality of job insecurity, as a construct, has been noted by various researchers. Firstly, job insecurity consists of objective and subjective components (Jacobson, 1991). Jacobson (1991) elaborated that the objective experiences relate to the available indicators from the environments that give an individual the feeling that he or she can lose his job. Mauno, Kinnunen, Mäkikangas, and Nätti (2005) suggested that subjective experiences are linked to an estimation or likelihood that you could lose your job given certain objective situations (i.e. retrenchments, downscaling or restructuring). Secondly, another distinction identified by Jacobson (1991) is the assumption that job insecurity has cognitive and affective dimensions, where the cognitive relations explain the estimated chance that losing your job will actually

happen and the affective part explains the concern, belief and outlook about job insecurity (De Witte 2000). Lastly, according to Isaksson, Pettersson, and Hellgren (1998) job insecurity has qualitative and quantitative dimension. Qualitative job insecurity explains the apparent pressures that an individual feels when the chances are high that he/she can lose the actual job; quantitative job insecurity refers to experiencing doubt about losing related benefits of the job.

Job insecurity has been identified as a stressor (Ashford, Lee, & Bobko, 1989; Barling & Kelloway, 1996; De Witte, 2000; Mauno & Kinnunen 1999; Probst, 2002; Richter, 2011; Siegrist, 1996; Sverke et al., 2004) and has repeatedly shown to induce work-related and personal-related reactions to stress (Størseth, 2006).

On the other hand, stress theory has repeatedly been used to describe the nature of job insecurity and, as an outcome, the probable responses to it (Reisel, Chia, & Maloles, 2005). Research on the combination of stress and job insecurity ranked the experiences of job insecurity as a very intensive stress-related experience, even more devastating over time than the actual separation with the company (Jacobson, 1991; Lazarus & Folkman, 1984). Greater demands in terms of completion time, volume of work and job/individual loads can lead to more stress experiences in general (Rundmo, 1995; Rundmo & Sjöberg, 1998). Newman, Griffin, and Mason, (2005) indicated in their research that the classic work stressors (workload and lack of role clarity/presence of role ambiguity) are specifically connected to the perception of safety and safety outcomes in the workplace. The display of safety behaviour is also subsequently influenced (Hofmann & Stetzer, 1996; Masia & Pienaar, 2011; Parker, Axtell, & Turner, 2001). However, the connection of job insecurity with negative safety outcomes has not received a lot of attention in research, especially in the mining sector. The relationship of considering job insecurity as a predictor of safety behaviour is scarce as well (Landsbergis, Cahill, & Schnall, 1999; Probst & Brubaker, 2001).

The attempts of an individual to reduce or even eliminate the negative effects of stress on well-being are accomplished by introducing certain coping mechanisms (Guppy, Edwards, Brough, Peters-Bean, Scale, & Short, 2004). In theory the cybernetic principles have also been connected to research and theoretical models of stress and coping (Carver & Scheier, 1985; Cummings &

Cooper, 1979; Edwards, 1992; Latack, Kinicki, & Prussia, 1995; Willemse & Pienaar, 2008). Drawing from the cybernetic theory, Edwards (1992) developed the integrative theory of stress, coping and well-being in organisations. If managing stress by implementing coping strategies can increase health and well-being for an individual, further research on the subject can guide organisations to implement practical interventions to increase quality of life (Folkman & Moskowitz, 2000; Zeidner & Endler, 1996). For the purposes of this study the role that coping plays in the experiencing of certain work stressors and safety compliance needs consideration. Coping is typically considered as a moderator between work stress (i.e. role conflict, clarity or overload) and its outcomes (Edwards & Baglioni, 2000). The question thus remains whether job insecurity in the presence of work stress influences on-the-job behaviour, which in turn could have a negative impact on occupational safety behaviour (Rundmo & Iversen, 2007).

As indicated earlier, the economic downturn may include cost reductions by restructuring the organisation and workforce, leading to the forced retrenchment of employees in order to facilitate productivity improvements. The employees that remain in the organisation are exposed to fewer available resources, increased workloads and a lack of clarity on specific task performances (Burke & Nelson, 1998; Hartley, Jacobson, Klandermans, & Van Vuuren, 1991). Hellgren, Sverke, and Näswall (2008) recognised that work in general today is characterised by less clarity of knowing which tasks need to be done and when they are completed successfully. The result for an individual is that it can induce stress and therefore the subsequent exploration into so-called role stressors (i.e. task completion ambiguity and task quality ambiguity) in the workplace. Added to the introduction of higher job demands on an individual, he or she is now forced to increase productivity by relying on current skills, past knowledge and experiences, as well as exposing possible development areas of certain competencies (Gallardo, 2009). The requirement for organisational management is to increase these skills, capabilities and competencies of individuals by introducing extra training and development initiatives (Rao, 2000; Rodrigues & Chincholkar, 2005).

Lower job satisfaction has been linked to the presence of role stressors (i.e. role conflict and role ambiguity) as described by Bedeian and Armenakis (1981) in their hypothesised job-related stress model. The experiencing of lower job satisfaction in turn increases turnover intentions.

Worsening job security situations (De Witte, 2005) increase flexibility in the labour force (Castells, 2000; Sundin & Wikman, 2004) and the specific focus on individuals (Allvin, 2004) has directed research to employability status (Fugate, Kinicki, & Ashforth, 2003; Van der Heijde & Van der Heijden, 2006). Workers that are aware of their employability-orientation are more inclined to recognise and anticipate opportunities for other careers of jobs, inside or outside of the company (McQuaid & Lindsay, 2005). These individuals show less devotion to the organisation and as a result the organisation is less loyal to them (Tissen, LekanneDeprez, Burgers, & Montfort, 2010; Van der Heijde & Van der Heijden, 2006; Van Schalkwyk, Du Toit, Bothma, & Rothmann, 2010). In the case of external employability it may lead to actual increased turnover, lowering the organisation's flexibility to operate effectively. Limited research exists in the field of stressors (task completion ambiguity and task quality ambiguity), competency demands and employability perceptions, as well as how these could influence job satisfaction and the intention to leave.

Interpersonal relationships in working life have the ability to induce both positive and negative outcomes for individual employees (Stoetzer, 2010). The negative consequences of experiencing stress in employment have been the focus of most empirical studies. There is some research, however, that proposes that personal experiences at work might increase the health and well-being of an individual (Luthans, 2002). Job stress experiences can lessen the impact of positive health-related behaviours and relationships (Payne, Jones, & Harris, 2002). The main feature in South Africa is that of a diverse and complex society. Factors influencing these groups of people are differences in race, gender, ethnicity, culture and language (in South Africa eleven formal languages are recognised) (Booyesen, 2007; Booyesen & Nkomo, 2005, 2007; Cilliers & May, 2002; Cilliers & Smit, 2006).

The relationship between mental health and workplace features has been attended to in research (Andrea, Bültman, Beurskens, Swaen, van Schayck, & Kant, 2004; Green, 2011; Sousa-Poza & Sousa-Poza, 2000). Limited consideration has been given to what role of mental health could play on workplace characteristics. Besides the successful completion of work tasks, other factors (i.e. interpersonal communication, critical thinking skills and problem-solving abilities) have now been considered to impact on successful performance in the changing workplace (Martin,

Jandaghi, Karimi, & Hamidizadeh, 2010; Un ange passé, 2008). When only considering specific work context factors, it seems that being unhealthy can be attributed to negative feedback, poor appraisals of individuals and inadequate communication from management (Leung, Su, & Morris, 2001; Van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004). Related communication dimensions like a lack of participation in decision-making processes, independence and responses (feedback) lead to extreme stress experiences resulting in burnout (Lee & Ashforth, 1996; Pfennig & Hüsich, 1994). Feedback from management increases the awareness of employees to develop job competence; social support from co-workers enhances the feeling of being able to work autonomously (Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2007). The negative effects of feeling powerlessness have been highlighted by many studies in this regard (Ambrose, Seabright, & Schminke, 2002; Tabak & Koprak, 2007; Zellars, Liu, Bratton, Brymer, & Perrewe, 2004). The autonomy of employees can be regained by providing them with more and equitable distribution of resources, and the defining of roles and responsibilities (Dacher, Gruenfeld, & Anderson, 2003; Gilbert & Ivanchevich, 1999).

Decreased job satisfaction, lower commitment to the organisation, greater intentions to leave the position and increased experiences of psychological distress are all linked to interpersonal conflict occurrences in the organisation (Fox, Spector, & Miles, 2001; Frone, 2000; Penney & Spector, 2005; Tepper, 2001; Zimmerman & Darnold, 2009). The buffering effect of social support on these negative work experiences may increase more positive outcomes for the individual (Cohen, & Wills, 1985; Pierce, Sarason, & Sarason, 1990; Sarason & Duck, 2001; Stroebe & Stroebe, 1996; Viswesvaran, Sanchez, & Fisher, 1999).

It can therefore be concluded that job insecurity is likely to be experienced due to specific events or situations that occur in the workplace. As a result, job insecurity combined with certain workplace stressors (e.g. role conflict, role clarity and role overload) can negatively influence safety compliance behaviour, unless a successful coping strategy is applied to mediate the negative experiences. On the other hand, the question remains whether stressors (i.e. task quality ambiguity and task completion ambiguity, employability perceptions and competency demands) can be moderated by job satisfaction in order to lower the intention to leave the organisation. Social support has been studied extensively as an organisational resource which plays a buffering

role in terms of the negative effects of job insecurity and health, and studying it in relation to positive (communication from the manager and feedback) and negative workplace (powerlessness and interpersonal conflict) attributes presents a unique angle.

The main objective of the current study was to investigate job insecurity as a component of work stress in the South African mining industry. Longitudinal research was also applied to compare the effect of the results over time. According to the research framework proposed by Näswall, Baraldi, Richter, Hellgren, and Sverke, (2006), certain organisational characteristics and work climate factors contribute to individual outcomes in terms of safety behaviour, work-related attitudes, behaviours, employee well-being and performance and can be moderated by coping strategies and social support. Within this framework, the following investigation is proposed:

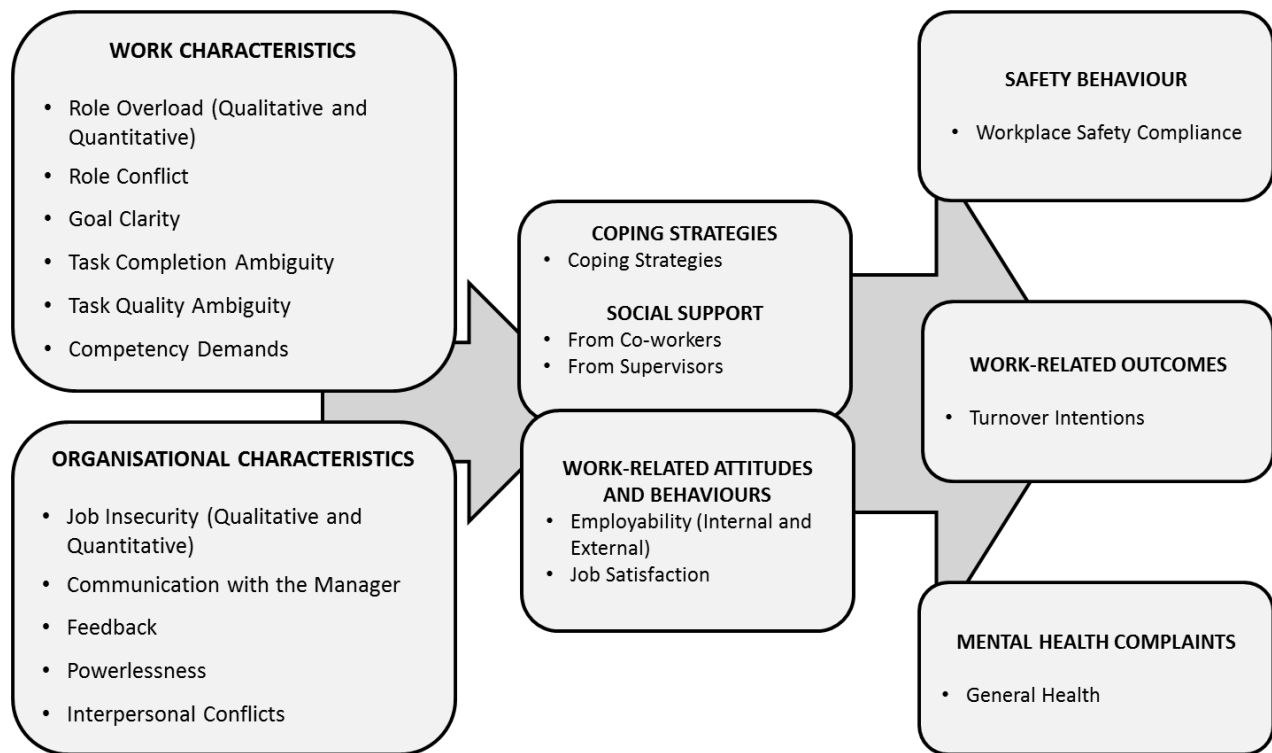


Figure 1: Proposed research framework (Adapted from Näswall et al., 2006)

To answer all the research questions, this project will be executed in four consecutive studies, each addressed and presented in an empirical scientific article. The following research questions

can be formulated based on the above-mentioned description of the research problem. The basic research questions for each study are stated below, under the heading of each particular article. These will be further developed within each article.

Article 1: The psychometric properties of a measure and biographical correlates of job insecurity

- How does the experience of job insecurity differ for different language groups in a selected gold mining company?
- How does the two-dimensional construct for job insecurity (qualitative and quantitative) present consistency for the selected group of employees?
- What role does gender, ethnicity and level of education play in employees' experience of job insecurity?

Article 2: Job insecurity, work stress and safety performance in a multi-national gold mining company

- How can job insecurity (qualitative and quantitative) and work stress factors (role conflict, role clarity and role overload) affect worker safety behaviour?
- How can coping measures moderate the influence of job insecurity and job stress on the safety behaviour of employees?

Article 3: Job stressors, job satisfaction and turnover intentions

- How does task completion ambiguity, task quality ambiguity, competency demands and employability perceptions (internal and external) relate to job satisfaction and turnover intention?
- How can job satisfaction mediate the relationship between role stressors (task completion ambiguity, task quality ambiguity, competency demands, employability perceptions (internal and external) on the one hand, and turnover intentions on the other?

Article 4: The influence on subsequent health of interpersonal work experiences and job insecurity

- What is the relationship between positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict), job insecurity and health, over time?
- What role does social support (co-worker support and supervisory support) play in these relationships?

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

2. RESEARCH OBJECTIVES

The research objectives are divided into general and specific objectives.

2.1 General objective

The general objective of this study is to determine the psychometric properties of a measure of job insecurity, and to determine the relationships between job insecurity, work stress and safety performance, job stressors, job satisfaction and turnover intentions, the influence on subsequent health of interpersonal work experiences and job insecurity in a South African based gold mining company.

2.2 Specific objectives

The specific objectives of this research will be stated below the heading of each particular study.

Article 1: The psychometric properties of a measure and biographical correlates of job insecurity

- The qualitative and quantitative scales of job insecurity are equivalent measuring instruments for employees from different language groups in a selected gold mining company in South Africa.
- Job insecurity, as measured by the two-dimensional construct (qualitative and quantitative job insecurity) presents with acceptable levels of internal consistency for each of the subscales.
- Men experience higher levels of job insecurity than women.
- Single people experience higher levels of job insecurity than people who are married or living together.
- Employees with a higher level of education experience less job insecurity than employees with a lower level of qualification.
- White (traditionally English or Afrikaans speaking) employees experience higher levels of job insecurity than black (traditionally African speaking) employees.

Article 2: Job insecurity, work stress and safety performance in a multi-national gold mining company

- Qualitative and quantitative aspects of job insecurity, together with work stress (i.e. role conflict, ambiguity and role overload), will be positively related to unsafe behaviour of employees from a selected gold mining company based in South Africa.
- Coping will moderate the influence of role stress and job insecurity on worker safety behaviour.

Article 3: Job stressors, job satisfaction and turnover intentions

- There will be a negative relationship between Task Completion Ambiguity, Task Quality Ambiguity and Job Satisfaction.
- There will be a positive relationship between Competency Demands, Employability Perceptions (internal and external) and Job Satisfaction.
- There will be a negative relationship between Job Satisfaction and Turnover Intention.

- There will be a positive relationship between Task Completion Ambiguity, Task Quality Ambiguity and Turnover Intention.
- There will be a negative relationship between Competency Demands, Employability Perceptions (internal and external) and Turnover Intention.
- Job Satisfaction will mediate the relationship between Task Completion Ambiguity, Task Quality Ambiguity, Competency Demands, Employability Perceptions (internal and external) on the one hand, and Turnover Intentions on the other.

Article 4: The influence on subsequent health of interpersonal work experiences and job insecurity

- There will be a positive relationship between positive interpersonal attributes (communication with the manager and feedback) and health at T1 and T2.
- There will be a negative relationship between negative interpersonal attributes (powerlessness and interpersonal conflict) and health at T1 and T2.
- There will be a negative relationship between job insecurity (quantitative and qualitative) and mental health at T1 and T2.
- Social support (co-worker and supervisory support) will moderate the relationships between positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict) and job insecurity (quantitative and qualitative) on the one hand, and health on the other, over time.

3. PARADIGM PERSPECTIVE OF THE RESEARCH

As per recommendation of Mouton (2006), the search will be guided by the specific paradigm perspectives which will include the intellectual climate and market of intellectual resources.

3.1 Intellectual climate

The intellectual climate refers to the convictions, assumptions and values which do not form part of the empirical goals of scientific research practices. The intellectual climate also refers to the meta-theoretical assumptions that are accepted as being valid within a discipline at a particular

juncture (Mouton, 2006). In social science research the intellectual climate includes beliefs related to the nature of social reality (Mouton, 2006). The distinctive feature of these assumptions is that they operate as postulates or presuppositions in science (Mouton, 2006).

3.2 Discipline

This research falls within the boundaries of the behavioural sciences and more specifically Industrial Psychology. Industrial Psychology is described by Schultz and Schultz (2000) as the application of methods, facts and principles of psychology to people at work. The objective of Industrial Psychology is to provide the basis for resolving human problems, or more realistically, minimising them (Reber & Reber, 2001).

Various sub-disciplines occur in the field of Industrial Psychology, namely organisational, personnel, career psychology and psychometrics. These areas include tests and measurements, the study of organisations and organisational behaviour, the effects of work, human factors, pay and efficiency, consumer surveys and market research (Reber & Reber, 2001). The sub-disciplines of Industrial Psychology focused on in this research are organisational psychology and psychometrics.

Organisational psychology can be defined as the study of organisations and social structures (Reber & Reber, 2001), the elements and systems of which they consist, as well as factors - especially the individual's interaction - that influence the effective functioning of organisations (Plug, Louw, Gouws, & Meyer, 1997). Organisational psychology aims at providing a social environment conducive to job performance and job satisfaction (Louw & Edwards, 1993). Within the framework of organisational psychology the organisation and its human and social systems will be studied to determine whether factors like coping, job satisfaction and social support contribute to an environment of safety compliance behaviour, lower turnover intentions and good mental health.

Psychometrics refers to the branch of Psychology where the measuring of any behavioural aspect requiring the use of particular procedures according to particular rules is measured in order to

allocate numerical values to that behavioural aspect (Smit, 1991). In this study, psychometrics will be used to validate measuring instruments for the particular environment and variables in which the study is conducted and in which the researcher is interested in. Psychometrics within specific prescribed procedures and rules will also be used to enable the researcher to base her findings, conclusions and opinions on validated psychometric data.

3.3 Meta-theoretical assumptions

According to Mouton (2006) the meta-theoretical beliefs pertain to the set of beliefs, values and assumptions with origins which can be traced to non-scientific contexts, and are therefore not directly related to the theoretical goals of the scientific research. The researcher is compelled to make assumptions at different stages of the research process justifying specific theories, as not all scientific findings can be conclusively prove on the basis of empirical research data.

Two paradigms are relevant to this research. Firstly, the literature review is done within the Humanistic and Positive Psychology paradigm and Systems Theory, and secondly the empirical study is done within the Positivistic paradigm.

3.3.1 Literature review

The literature review focuses on previous research on job insecurity including work stress, coping, safety compliance behaviour, employability, competency demands, job satisfaction, turnover intentions, positive and negative work attributes social support and health. An overview will be given of the conceptualisation of these constructs in literature and on the findings in terms of measuring the above-mentioned concepts.

The literature review of this study is presented from the Humanistic paradigm and Systems Theory. The Humanistic Paradigm is a school of thought that emphasises that people constantly strive towards becoming self-actualised or fully functioning individuals. Part of the work of Maslow and Rogers, humanism's point of departure is that people value positive regard, personal growth, psychological health and optimal functioning, implying that individuals are conscious,

are more than the sum of their total parts, live purposefully and are constantly making choices (Bohart & Greening, 2001; Plug et al., 1997).

Systems theory, particularly in the field of organisational psychology, views all organisational processes, activities, functions and interactions with the environment as part of a system of interrelationships (Robbins, Judge, Odendaal, & Roodt, 2009). Changes to any inputs, processes, transactions, delivery and feedback within the system will therefore impact the entire system.

3.3.2 Empirical study

The behaviouristic paradigm is an approach to psychology based on the proposition that behaviour can be studied and explained scientifically without recourse to internal mental states. Within this paradigm, there are different emphases (Staddon, 2001). Some argue that the observation of behaviour is the best way of investigating psychological and mental processes. Others believe that behaviour itself is the only appropriate subject of psychology, and those aspects, such as beliefs and objectives, only refer to behaviour (Staddon, 2001).

The positivistic paradigm is based on the assumption that knowledge gained through understanding the laws of human behaviour, with the use of quantitative methods and hypotheses testing, can be utilised for the purpose of making improvements and predictions (Neuman, 1997). According to Neuman (1997) the nature of social reality is real and has order within the positivistic approach. Human beings are seen as rational, and probabilistic causal laws are used to explain human events.

3.4 Market of intellectual resources

The market of intellectual resources refers to the collection of convictions that lends epistemic status or scientific statements to research (Mouton, 2006). Two types can be identified: Theoretical beliefs and methodological beliefs.

3.4.1 Theoretical beliefs

Theoretical beliefs can be described as assertions regarding the descriptive and interpretative aspects of human behaviour (Mouton, 2006). It therefore includes all statements forming part of hypotheses, typologies, models or theories. The elements of theoretical beliefs will be discussed in terms of the concepts, theories and models applied within this research study.

A. Conceptual Definitions

The relevant conceptual definitions are given below:

- **Job Insecurity:** Job insecurity is defined in various ways: Greenhalgh and Rosenblatt (1984, p. 438) defined job insecurity as “the perceived powerlessness to maintain the desired continuity in a threatened job situation”. Heaney, Israel, and House (1994, p. 1431) referred to the “perception of a potential threat to the continuity of the current job”, and Sverke et al. (2002, p. 243) to the “subjectively experienced anticipation of a fundamental and involuntary event related to job loss”.
- **Role overload:** Role overload is defined as the occurrence when the focal person cannot meet all of his or her demands within a given time frame (Sulsky & Smith, 2005). *Qualitative overload* exists when individuals believe they lack the capability or skill level required to complete a task, and *quantitative overload* refers to individuals’ belief that limitations imposed by their environment - such as time or access to a resource - prevent their engaging in a task (Thatcher, Sprite, Stephina, & Liu, 2003).
- **Role conflict:** Larson (2004) describes role conflict as a result of conflicting job demands, such that compliance with one makes compliance with another difficult or impossible.
- **Role ambiguity (lack of role clarity):** Role ambiguity, or a lack of role clarity, has been described as the situation where there is a lack of clear expectations from the role or lack of feedback on performance (Aziz, 2004).
- **Coping:** Coping is defined in as the cognitive and behavioural attempts to master, reduce or tolerate the internal and external negative demands created by stressful transactions of individuals with their immediate environment (Lazarus & Folkman, 1984; Mostert & Joubert, 2005).

- **Safety behaviour:** Safety behaviour in this context is described as *compliance* behaviour including the obeying of safety regulations, following the correct procedures, and using appropriate equipment (Neal, Griffin, & Hart, 2000)
- **Task completion ambiguity** is defined as the understanding an individual has of what the task entails and also the difficulty experienced to judge when an assignment is completed (Hellgren et al., 2008; Näswall et al., 2006).
- **Task quality ambiguity** is described as the difficulty an individual experiences to determine whether their work results were high enough quality (Hellgren et al., 2008; Näswall et al., 2006).
- **Competency demands** is defined as the individual characteristics or abilities required by a certain job situation and job responsibility to demonstrate appropriate specific actions (Vathanophas & Thai-ngam, 2007).
- **Employability** is described as the “continuous fulfilling, acquiring, or creating of work through the optimal use of one’s competences” (Van der Heijde & Van der Heijden, 2006, p. 453). Two dimensions are identified: *Internal employability* is the perceived ability of an employee to secure employment within the same organisation and *external employability* is the perceived ability of the employee to secure employment outside their current organisation (Groot & Van den Brink, 2000).
- **Job Satisfaction:** Ivancevich, Olekalns, and Matteson (1997) defined job satisfaction as an attitude or perception that individuals have about their job, it entails the degree to which there is a good fit between the individual and the organisation.
- **Turnover intentions:** Turnover intention gives an indication of the strength of the respondent’s intentions to leave the present position (Näswall et al., 2006).
- Bell and Martin (2008, p. 130) defined **managerial communication** as “the downward, horizontal, or upward exchange of information and transmission of meaning through informal or formal channels that enables managers to achieve their goals”.
- **Feedback** is defined as the wanting by employees either by directly asking for it (*inquiry*) or by observing their environment and others for cues that might serve as feedback (*monitoring*) in order to make a better assessment of their capabilities (Williams & Johnson, 2000).

- **Powerlessness** can be defined as the absence of control over events in a person's life (Banai & Reisel, 2007), and when applied to the workplace, the inability to control work processes (Yang, Yang, & Kawachi, 2001).
- Ilies et al. (2010, p. 3), defined **interpersonal conflict** as “a dynamic process that occurs between interdependent parties as they experience negative emotional reactions to perceived disagreements and interference with the attainment of their goals”.
- Workplace **social support** specifically focuses on collaborative problem solving and sharing information, reappraising situations and obtaining advice from a variety of sources such as colleagues, supervisors and managers (Wills & Shinar, 2000).
- **Mental health** is defined as a state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life and is able to make a contribution to his or her community (WHO, 2001).

B. Models and Theories

A model is aimed at classifying and proposing relationships (Mouton, 2006). A theory specifies the relationship between variables in an effort to explain human behaviour in a specific population (Huysamen, 1993).

The following theories and models are relevant in this research project:

- ***Integrated model of job insecurity.*** Sverke and Hellgren (2002) described job insecurity as a subjectively experienced, multidimensional phenomenon which may arise as a function of the interaction between the objective situation and subjective characteristics, a phenomenon which may have detrimental consequences for employee attitudes and well-being, where such consequences may be mitigated by a number of potential moderators. In their proposed model the following factors are included:

1. Objective situation

- Labour market characteristics

- Organisational change
- Employment contract
- Uncertain future for the organisation

2. Subjective characteristics

- Perceived employability
- Perceived control
- Family responsibility
- Need for security

3. Job insecurity

- Threats of job loss
- Threats to job

4. Moderators

- Individual differences
- Fair treatment
- Social support

5. Consequences

- Well-being
- Job attitudes
- Organisational attitudes

All of the above-mentioned aspects will be considered in this investigation. While empirical measurements will be made of the subjective characteristics, job insecurity, moderators and consequences, the literature review for each investigation will consider the objective situation as backdrop against which each investigation takes place.

- ***Organisational role stress theory.*** Khan, Wolfe, Quinn, Snoek, and Rosenthal (1964) provided a theoretical basis for the study of organisational role stress with their Role Episode Model in which a focal person and role senders interact while being influenced by organisational factors (e.g., structure, size), personality factors (e.g., values, motives) and interpersonal relations (e.g. personal and group influence). These role pressures,

whether evaluated subjectively by the focal person or objectively by role senders or others outside the role set, were classified by Khan et al. (1964) as different forms of role conflict, ambiguity or overload. One of the more enduring theoretical perspectives on job-related stress and attitudes is the model proposed by Bedeian and Armenakis (1981). This model hypothesises that greater role conflict and ambiguity lead to increased job tension, which results in lower job satisfaction. Lower job satisfaction, in turn, increases the intention of the worker to leave the organisation. In addition to hypothesising an indirect influence of role conflict and ambiguity on propensity to leave, the model also predicts a direct influence on these two variables, in which role conflict and ambiguity directly reduce job satisfaction and increase propensity to leave (Sulsky & Smith, 2005).

- ***Theoretical model of the effects of job insecurity on employee safety outcomes.*** Probst and Brubaker (2001) developed a model explaining the possible relationship between job insecurity and negative employee safety outcomes or behaviours and the efforts that an individual will put into place to remedy the outcomes. Possible links between job insecurity, safety motivation, knowledge, compliance and job-related injuries are described as follows:

- 1. Job insecurity and job satisfaction**

Job satisfaction has shown to increase when perceptions of increased job insecurity are experienced (e.g. Ashford et al., 1989; Davy, Kinicki, & Scheck, 1997; Probst, 2001).

- 2. Job satisfaction and safety knowledge and motivation**

Safety motivation and safety knowledge will be negatively affected if an individual feels that his/her position is insecure and as a result experiences job dissatisfaction with the work (Probst, 2004).

- 3. Safety compliance**

In turn lower feelings towards safety motivation indicate more defilement of the organisational safety rules and standards (Probst, 2004).

- 4. Workplace injuries and accidents**

If an individual is more compliant, it may mediate the relationship between knowledge of safety, safety motivation and transgressions like accidents, incidents and injuries (Neal & Griffin, 2006).

3.4.2 Methodological beliefs

Methodological beliefs can be defined as the beliefs concerning the nature of social science as well as scientific research. Examples include traditions within the philosophy of the social sciences, such as positivism or phenomenology, as well as methodological models, such as the quantitative or qualitative model (Mouton, 2006).

The research makes use of a quantitative approach and is therefore accompanied by statistical analyses which include references to means, standard deviations, internal consistency, reliability, validity, practical significance, correlation coefficients and regression analysis (Neuman, 1997). The empirical study is presented within the positivistic framework. The research methodology proposed for this study is described below.

4. RESEARCH METHOD

The research method consists of a literature review and an empirical study. For the purposes of this research an electronic survey design with a random sample from a South African based mining company was used. In this approach there is neither random assignment nor any planned intervention, because one or more variables, apart from the independent variable in question, could be the actual source of observed variation in the dependent variable(s). In this study the researcher is interested in a longitudinal design, which implies that the same group is examined at different time intervals. The greatest advantage of the longitudinal design is that it allows for the attribution of causality and the order of relationships can thus be established.

The quantitative research approach implies then that the researcher interprets the research process by either relating the various individual findings to an existing theory or hypothesis, or by formulating a new hypothesis that would best account for the data (Mouton, 2006).

4.1 Literature review

A complete literature review, regarding the following was obtained: the experience and consequences of job insecurity in the gold mining industry based in South Africa, the impact of job insecurity on safety behaviour, organisational commitment and turnover intentions. Secondly, the effects of role clarity (ambiguity) and role overload on job satisfaction are investigated in the literature. Sources have already been obtained for the following data bases:

- PsycLIT
- RSAT
- Business periodical index
- ABI/Inform
- ERIC
- Various library catalogues
- Internet, e.g. Google Search

4.2 Empirical study

The empirical study will consist of the research design, participants, data collection, data analysis and ethical aspects that should be considered.

4.3 Research design

A survey design will be used to achieve the research objectives. The research context can distinguish between broader spatial-temporal factors that are determined by historical, socio-political and economic factors. In this research the researcher will conduct a longitudinal study where changes in behaviour or attitudes are investigated; significant changes could be the result of external events such as elections, civil unrest, or increased unemployment, but the aim is to study the interaction between the variables of interest.

4.4 Participants

A non-probability purposive voluntary sample of mines will be used to reach the objective of this study. A web-based questionnaire will be forwarded to employees of a large South African gold mining operation, requesting them to complete the questionnaire on a voluntary basis. The population will consist of voluntary employees in the mining environment, which includes operations in South Africa as well as the greater Africa (Namibia, Ghana, Tanzania, Guinea and Mali). The following selection criteria will be used to determine which participants will be included in the sample:

- Employees who have access to e-mail facilities in the mining environment in the gold mining operation.
- Employees who are willing to participate in the research after having been informed about the purpose and procedures of the research.
- Employees who are prepared to complete the same questionnaire for the second time after a one year period.

4.5 Measuring Battery

The questionnaire that will be used in this research study was developed and validated by Näswall et al. (2006). The purpose of the instrument is to measure different aspects of the working situation for white-collar workers. Since the researcher wanted to include as many different variables as possible, all the variables as presented by the authors of the questionnaire in the study questionnaire were included. This questionnaire will be sent to the sample of participants on time 1 and time 2 in the longitudinal study.

The Likert scale format is used and anchored with strongly disagree (1) and strongly agree (5) and consist of 276 questions (items). In previous research (Näswall et al., 2006) the reliability of the instrument was found to be adequate.

The questionnaire is internet-based and the administration will be done via instruction on the computer when the participant logs on to the website. Participants will be asked to complete a

short biographical questionnaire that will include gender, age, educational qualification, marital status, home language, years working in the mining environment, employment details and union membership. The input will be confidential and anonymous; the employee will only be able to submit the questionnaire when completed in full.

4.6 Method

The results of this study will be presented in the form of four research articles. For the purpose of each article, a short literature review will therefore be done. The literature reviews will thus focus on previous research on job insecurity, work stressors, coping, safety behaviour, 'new' role stressors, employability, competency demands, turnover intention, and communication with the manager, feedback, powerlessness, interpersonal conflict, social support and health.

4.6.1 Study 1

The aim of this study will be to determine the construct equivalence, factorial validity, and internal consistency of a job insecurity scale that distinguishes between the qualitative and quantitative dimensions for employees in a South African gold mining company and also to determine whether the levels of experienced job insecurity differ in terms of demographic variables such as age, qualification, gender and race.

The study will make use of exploratory factorial analysis to determine internal consistency of the job insecurity subscales. A multivariate analysis of variance will be used to determine the significance of differences between job insecurity of different groups (e.g. groups based on qualification, gender and language).

4.6.2 Study 2

Study two will focus on the relationship of work stress and job insecurity with safety compliance, and will also investigate a possible moderating effect of coping when experiencing work stress and job insecurity on safety compliance behaviour in a gold mining company. A

cross-sectional survey design will be used to answer the hypotheses. Logistic regression will be employed to classify participants as being either safe or unsafe at work. Moderation can be investigated by creating interaction terms between the independent variables (i.e. stress, insecurity and coping) (see Aiken & West, 1991).

4.6.3 Study 3

For the purpose of this study, new potential challenges and demands as work stressors (i.e. task completion ambiguity, task quality ambiguity, competency demands, employability perceptions), will be investigated. The study will also investigate the possible mediating role that job satisfaction can play on the subsequent intention of an individual to leave the organisation.

An electronic survey in a longitudinal research design with two specific points of data collection will be used to gather data and test the hypotheses. A regression analysis will be employed to clarify the contribution of task completion ambiguity and task quality ambiguity, competency demands and employability perceptions to turnover intention over time. To test for the hypothesised mediating effect of job satisfaction on the intention to leave the organisation, procedures as outlined by Baron and Kenny (1986) will be implemented.

4.6.4 Study 4

The purpose of this study is the examining of the possible moderating effect of social support (co-worker support and supervisory support) when experiencing positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict) and job insecurity (quantitative and qualitative) on subsequent mental health. To achieve the research objectives of the study, the researcher will again make use of a longitudinal study design in order to understand how and why a relation between variables exists in relation to aspects of stability and change across time.

The main and interactive effects of social support will be tested using hierarchical multiple regression analysis. Following Aiken and West (1991), the means of variables used in interaction

terms will be set to zero, while their standard deviations are kept intact. Where a moderating effect is indicated, the relevant variables will be dichotomised via a median-split, and graphically represented with a univariate general linear model.

4.7 Ethical considerations

Conducting research is an ethical enterprise. Research ethics provide researchers with a code of moral guidelines on how to conduct research in a morally acceptable way. The following will be applicable at all times to retain an ethical climate (Struwig & Stead, 2001):

- The researcher must at all times be truthful, fair and respectful towards others and must not attempt to mislead or misinform participants;
- the researcher must always uphold and sustain the standards of his/her profession and be competent and qualified to contribute in a research study;
- the researcher must at all times have respect for the rights and dignity of others. This includes confidentiality, independence and autonomy of the research participants and respect for the participant's privacy;
- the researcher will also have to be sensitive to any cultural or individual differences among people, with relation to factors such as gender, religion, race, ethnicity, age, language and socio-economic status. In addition, it is important for the researcher not to intentionally discriminate against people on the basis of such factors; and
- the wellbeing of others will be of most important concern to the researcher. As a result of the researcher's interaction with the participant, the researcher will avoid any harm to his/her research participant.

4.8 Statistical Analysis

In the first article the psychometric properties of the measure of job insecurity will be investigated. Construct equivalence can be investigated by means of Tuckers coefficient of agreement, while factorial validity and internal consistency of the questionnaire in the South African context can be investigated by means of confirmatory factor analysis. MANOVA

(multivariate analysis of variance) will be performed to establish whether the level of job insecurity differs in terms of variables such as qualifications, gender, job level and tenure.

The second article will investigate whether role stress (as indicated by role overload, role clarity (ambiguity), and role conflict) have any influence in terms of participants' safety behaviour. This relationship can be investigated by making use of correlations and multiple regressions. Additionally, a variable such as coping as a possible moderating factor can be investigated by creating interaction terms and conducting a hierarchical multiple regressions.

The third article will investigate the role of role stressors (task quality ambiguity and task completion ambiguity), competency demands and employability in relations to organisational commitment in the relation between job satisfaction and the intention to quit. Correlations and regression can again be employed to answer this research question, with the added benefit that outcomes can be predicted across time with the use of longitudinal data.

The fourth and final article will again make use of regressions with longitudinal data to investigate the strength of social support as a moderator of communication with the manager, feedback, powerlessness, interpersonal conflict, job insecurity with subsequent health. The main objective here is to identify the long term application of positive and negative work attributes in terms of health outcomes for individuals.

5. CHAPTER DIVISION

The chapters in this thesis (of which the first four is in the form of research articles), are presented as follows:

Chapter 1: Introduction

Chapter 2: The psychometric properties of a measure and biographical correlates of job insecurity

- Chapter 3: Job insecurity, work stress and safety performance in a multi-national gold mining company
- Chapter 4: Job stressors, job satisfaction and turnover intentions – A longitudinal analysis
- Chapter 5: The influence on subsequent health of interpersonal work experiences and job insecurity
- Chapter 6: Conclusions, limitations and recommendations

6. CHAPTER SUMMARY

In this chapter the problem statement and motivation for the research were discussed. The purpose of the research was formulated; the methodology of the research outlined and the methods used for statistical analysis were described.

This research will make the following contributions to the subject of industrial psychology and the practice thereof in organisations:

- This study will provide an assessment of the psychometric properties of a measure of quantitative and qualitative job insecurity for employees in a South African-based gold mining company.
- This study will provide data on an investigation into the relationship of work stress and job insecurity with safety compliance.
- This study will provide information of whether job stressors (task completion ambiguity, task quality ambiguity, competency demands and employability perceptions (internal and external)) play a role in the intention to quit and also on how job satisfaction may play a mediating role in a multinational African mining organisation.
- The study will provide information on a research model illustrating the relationship between positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict), job insecurity (quantitative and qualitative) and mental health moderated by social support (co-worker support and supervisory support) over time.

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CHAPTER 2
ARTICLE 1

THE PSYCHOMETRIC PROPERTIES OF A MEASURE AND BIOGRAPHICAL CORRELATES OF JOB INSECURITY

Melissa Jacobs

ABSTRACT

Orientation: Increasing trends of re-organisation, restructuring and downsizing in the gold mining industry has led to workers feeling insecure in employment.

Research purpose: The objective of this study was to assess the psychometric properties of a measure of quantitative and qualitative job insecurity for employees in a South African based gold mining company.

Motivation for the study: Limited research on the topic of job insecurity in the mining industry in particular, taking into account the demographic diversity represented in South Africa, exists.

Research design, approach and method: A cross-sectional survey design with a random sample ($n = 566$) from a South Africa based mining company was used. The measures of Hellgren, Sverke and Isaksson (1999), which have not previously been investigated in South Africa, were applied, together with a biographical questionnaire. Construct (structural) equivalence was initiated to calculate the comparison of the factor structure for the different cultural groups. To determine the significance of differences between job insecurity of different groups, e.g. groups based on gender, marital status, qualification and language a multivariate analysis of variance (MANOVA) was used.

Main findings: Results confirmed construct equivalence for quantitative job insecurity for all the language groups. For qualitative job insecurity, the scale shows no equivalence for the African languages group. Statistically significant differences were found between the levels of job insecurity of employees in terms of gender.

Practical/managerial implications: Specific attention can be given to moderating variables for the mitigation of the consequences of job insecurity. Further research in the field of job

insecurity in South Africa will assist organisations in preventing the detrimental effects it has on individuals in the working environment.

Contribution/value-add: After inspecting the psychometric properties of this measure of job insecurity, further research suggestions can be made. The use of a reliable and valid measurement instrument for job insecurity will ensure the true assessment of the prevalence of job insecurity in South Africa.

Key words: Qualitative and quantitative job insecurity, psychometric properties, bias, equivalence, race, culture, language

The last four decades in the 21st century workplace have seen the nature of work changing dramatically for some people (Sparks, Faragher & Cooper, 2001). In the 1960s and 1970s new technology was introduced into the workplace, followed by the 1980s with a huge shift towards globalisation (Cooper & Jackson, 1997). As a result of globalisation, many companies formed strategic alliances by undergoing mergers, acquisitions, and privatisations. The 1990s were marked by major organisational restructurings in order to remain competitive (Probst & Lawler, 2006). Over the last ten years an increasing trend of reorganisation, restructuring and downsizing was evident in many organisations, which led to sub-contracting and outsourcing of services in order to compete in the global market and still remain competitive (Sparks *et al.*, 2001). Emphasis of the increased literature and research on the topic of job insecurity over the last decade highlights the concerns about this phenomenon, both in South Africa and internationally (Elbert, 2002; Heymans, 2002; Labuschagne, Buitendach & Bosman, 2005; Sverke & Hellgren, 2002; Sverke, Hellgren, Näswall, Chirumbolo, De Witte & Goslinga, 2004; Sverke, De Witte, Näswall & Hellgren, 2010).

It is increasingly expected from organisations and employees to be able to adjust quickly and remain flexible to the fast changing world of work (Van der Vliet & Hellgren, 2002). All these organisational changes are often undertaken with the aim of producing a “lean and mean” organisation – one that is flexible, “able to turn on a dime,” and quick to adapt to the changing environment (Landsbergis, Cahill & Schnall, 1999, p. 480). Large, hierarchical, rigid organisations are therefore replaced with smaller, more flexible and responsive organisations in order to increase competitiveness in the international workplace arena (Allvin, Aronsson, Hagström, Johansson & Lundberg, 2011; Bahrami, 1992; Lewin & Johnston, 2000).

Many organisations have turned to downsizing, lay-offs, retrenchments and restructuring with the goal of increasing competitiveness and reducing labour costs. The result in many instances of these interventions is that it is expected from fewer employees to carry out the same amount of work (Hellgren & Sverke, 2003). Another major result of all these drastic changes and trends is the unpredictability of the flexible labour markets that has given rise to feelings of concern about the continuance of work, or job insecurity. The detrimental effects of job insecurity are not only seen in the organisation, but also in the individual working for that organisation (Noer, 1993;

Richter, 2011). The strong psychological feelings that individuals experience in times of job insecurity (Ashford, Lee & Bobko, 1989) may have adverse effects on their well-being (Adam & Flatau, 2006; Kim, 2003; Mauno, Kinnunen, Makikangas & Natti, 2005; Pepper, Messinger, Weinberg & Campbell, 2003; Sverke & Goslinga, 2003) it may imply further changes in individuals, their work attitudes and behaviour which in the long run could affect the organisation negatively.

Despite the gold price rising sharply in South Africa, the market has seen gold reserves (which include the gold that can be profitably extracted from the ground) that are fast being depleted and as a result will diminish over the next quarter of the century. It will mean the closure of the mining industry on which South Africa's economy has been built. The entire sector which currently employs 150,000 people and contributes hugely to exports, taxation and a demand for a variety of industry inputs, will disappear (Groenewald, 2011). It is important to note that labour costs comprise up to 60% of total mining costs which keeps the world's largest gold producers in a cost crunch. In order for mining companies to survive this volatile market, marginal mines will be the first to cut their labour budgets, thereby increasing the notion of job insecurity in the economy (Groenewald, 2007).

South Africa, as part of the international workplace, has felt the brunt of mergers, organisational re-structuring and retrenchments. The mining industry specifically has experienced down-scaling and the influence of changing legislation on its businesses. A study that can contribute to the understanding of the impact of job insecurity on the employees and ultimately lead management in their interventions is therefore warranted.

Changing business practices, economic influences and socio-political environment turbulences in South Africa have emphasised the emerging phenomenon of job insecurity (Sauer, 2003; Snoer, 2005). The additional material and psychological costs of experiences of job insecurity can simply not be afforded in South African organisations (Botha, 2006; Van Schalkwyk, 2005; Van Zyl, 2005). The lack of research on the complex job insecurity construct, especially in the South African context, has pointed out the need for more research to be done in the country (Van Wyk & Pienaar, 2008). This, in essence, emphasizes the need for South African organisations to allay

insecurities in order to enhance their employees' workplace commitment to ultimately compete in the global market.

Because of limited research on the topic of job insecurity in the mining industry in particular, the first test would be to investigate the reliability of a measure of the construct, taking into account the demographic diversity represented in South Africa. Organisations seem reluctant to do empirical studies leading to under-researched psychometric data because of the sensitivity surrounding the topic of job insecurity (Bernhard-Oettel, De Cuyper, Schreurs & De Witte, 2011; Jacobson & Hartley, 1991). Furthermore, the importance of this study is reflected in the lack of a comprehensive explanation and measurement of job insecurity (Probst, 2002), especially in South Africa. International research has also investigated factors such as age (Charles & James, 2003; Feather & Rauter, 2004), cultural differences (Probst & Lawler, 2006; Yousef, 1998), family responsibility (Sverke & Hellgren, 2002), gender (Cheng, Chen, Chen & Chiang, 2005; Strazdins, D'Souza, Lim, Broom & Rodgers 2004), job tenure (De Ruyter & Burgers, 2000; Nickell, Jones & Quintini, 2002), marital status (Lee, Colditz, Berkman & Kawachi, 2004; Strazdins *et al.*, 2004), organisational culture and organisation type (Charles & James, 2003, Domenighetti, D'Avanzo & Bisig, 2000; Strazdins *et al.*, 2004), the psychological contract (King, 2000), and workplace control (Barling & Kelloway, 1996; Mauno & Kinnunen, 2002) as moderators. Due to the inconsistency of specific research on the effects of job insecurity variables in the South African context, the further study of the construct remains important.

When individuals of diverse cultural groups in any multi-racial setting are compared, the specific measurement equivalence of the measuring instruments of constructs should be computed (Van de Vijver & Leung, 1997). The relevancy is that no fixed norms for the different cultural groups are in place. As per the recommendations made by Poortinga (1989) and Van de Vijver and Leung (1997), measurement equivalence should always be tested for item understanding and meaning in a multicultural context where variances in scores may be influenced by cultural perceptions, and not the results of differences in terms of measured constructs. Cultural influences must be accounted for especially in a culturally diverse setting such as South Africa, also in terms of job insecurity.

From a methodological point of view it was found that cross-cultural assessments are mostly characterised by bias and equivalence. Bias and equivalence are often treated as antonyms, where equivalence refers to the absence of bias on the one hand; bias on the other hand, is the same as non-equivalence (Van de Vijver, 2003). Van de Vijver and Tanzer (1997) indicated that bias transpires when differences in the underlying trait or ability do not correspond with the score differences of the construct indicators. Therefore, equivalence involves the implications of bias on the scope of comparing scores. Bias then refers to the presence of nuisance factors which impact on the scores obtained with the instrument, while equivalence consequences describe the cultural nuisance factors on the comparability of scores (Meiring, 2007).

Thus, investigating job insecurity in the South African mining sector is warranted. The first issue to address, though, is one of valid, reliable and unbiased measurement in the diverse South African workplace.

The nature and measurement of job insecurity in the modern workplace

Job insecurity refers to the negative reactions and feelings that employees have concerning changes to their jobs. Job insecurity is defined as an individual's "expectations about the continuity in a job situation" (Davy, Kinicki & Scheck, 1997, p. 323), "overall concern about the future existence of the job" (Rosenblatt & Ruvio, 1996, p. 587), the "perception of a potential threat to continuity in his or her current job" (Heaney, Israel & House, 1994, p. 1431), and "powerlessness to maintain desired continuity in a threatened job situation" (Greenhalgh & Rosenblatt, 1984, p. 438).

As the definitions of job insecurity unveil, the concept refers to concerns about the continuation of the job (Greenhalgh & Rosenblatt, 2010; Hartley, Jacobson, Klandermans & Van Vuuren, 1991; Sverke & Hellgren, 2002), while the subjective experience or perception refers to the interpretations of an individual of certain events within the organisation (e.g. Sverke & Hellgren, 2002). When analysing an objective situation (e.g. the employment contract), the subjective feature of the conceptualisation of job insecurity can change the outcome of interpretations of the objective situation. Some employees will have feelings of job insecurity and others may feel

secure in their jobs, although dismissal is forthcoming (De Witte & Näswall, 2003). While most definitions refer to job insecurity as a subjective experience, it would seem that the clear definition of the job insecurity concept includes many diverse aspects of uncertainty observations. Features such as the loss of appreciated features, demotion and occupational insecurity are also imminent, not only the threat of job loss itself (e.g. Ashford *et al.*, 1989; De Witte, 1999; Hellgren *et al.*, 1999). The influences of environmental factors such as downsizing, economic changes, legislative changes and resource problems can play a major role in how an individual reacts to the insecure job situation (Näswall, 2004).

The measurement of job insecurity in the past took place mostly by using wide-ranging measures of work climate that predicted the attitudes of employees in an ad hoc manner (e.g. Ashford *et al.*, 1989; Hartley *et al.*, 1991). Only since the eighties has there been a systematic research approach to job insecurity (Hartley *et al.*, 1991). An investigation of the literature clearly distinguishes between two perspectives, namely the global and multidimensional views. The global perspective refers to the overall concern of an individual that the job will still exist in the future (Hartley *et al.*, 1991; Sverke *et al.*, 2004). The multidimensional perspective describes a more complex dimension, referring to the actual losing of the job and also the fear of losing job features that are important to the job incumbent (Ashford *et al.*, 1989; Greenhalgh & Rosenblatt, 1984; Jacobson, 1991).

The multidimensional assumption of job insecurity indicates another distinction, namely a cognitive or affective quality (Borg & Elizur, 1992; De Witte, 2000; Jacobson, 1991; Vander Elst, De Witte & De Cuyper, 2010). The cognitive job dimension of insecurity refers to the concern with the likelihood that an individual will lose his job, and affective dimension refers to the beliefs and feelings about job insecurity (De Witte, 2000). Global measures research the threats of looming job loss, while multidimensional measures focus on the perceived likelihood that job insecurity will occur (e.g. Mohr, 2000; Van Vuuren, 1990), or the anxiety of job loss (e.g. Johnson, Messe & Crano, 1984).

For the purpose of this study job insecurity is defined in terms of quantitative and qualitative job insecurity. It was Jacobson (1991) who added a new element to job insecurity by referring to the

quantitative and qualitative dimensions thereof after the conceptualisations proposed by Greenhalgh and Rosenblatt (1984) and later Jacobson (1987, 1991). Quantitative job insecurity describes the concerns an employee will have about the on-going existence of his current job (Elman & O'Rand, 2002), while qualitative job insecurity refers to the apparent threats of reduced quality specifically in the working relationship, such as decreasing salary scales and limited career opportunities (Bordia, Hobman, Jones, Gallois & Callan, 2004; Jacobson, 1991). The distinctions between quantitative versus qualitative job insecurity dimensions and global versus multidimensional measurements function independently of one another. Global measures can either be quantitative or qualitative. This also applies to multidimensional measures (De Witte, 2005). In this study the focus falls on qualitative and quantitative references to job insecurity as a global dimension. Although a limited number of studies, specifically in South Africa (Van Wyk & Pienaar, 2008), have explored the difference between the consequences of these aspects (Cheng & Chan, 2008; Hellgren *et al.*, 1999; Sverke *et al.*, 2002), more recent research suggested that quantitative job insecurity can have the same negative consequences as qualitative job insecurity (De Witte, De Cuyper, Handaja, Sverke, Näswall & Hellgren, 2010).

The detrimental consequences of work-related stressors - including job insecurity - for the individual and the organisation have been researched in several meta-studies (Sverke, Hellgren, & Näswall, 2002; Cheng & Chan, 2008). The results indicated that job insecurity has been related to stressors such as mental well-being complaints (Ashford *et al.*, 1989; De Cuyper & De Witte, 2005; Kinnunen, Mauno, Nätti & Happonen, 2000; Näswall, Sverke & Hellgren, 2005) and decreased levels of job satisfaction (Ashford *et al.*, 1989; Davy *et al.*, 1997; De Witte *et al.*, 2010; Hellgren *et al.*, 1999; Hellgren, Sverke & Isaksson, 1999). Other important documented consequences of job insecurity are lesser levels of job participation (Bordia *et al.*, 2004; Elst *et al.*, 2010; Kuhnert & Palmer, 1991), decreased trust in the organisation (Ashford *et al.*, 1989; Lee, Bobko & Chen, 2006; Reisel & Banai, 2002; Sverke *et al.*, 2002), decreased organisational commitment (McFarlane, Shore & Tetrick, 1991), and as a result increased intentions to leave the organisation (Cheng & Chan, 2008; Hartley *et al.*, 1991; Sverke *et al.*, 2002).

Demographic characteristics and job insecurity

An important distinction between individual employees is whether certain employees are more prone to experience job insecurity and worry about job loss. Researchers have therefore put forward hypotheses on the precursors of job insecurity. There are three categories of factors that are commonly distinguished in the literature (see e.g. Hartley *et al.*, 1991): Organisational variables (e.g. organisational size), individual background characteristics (e.g. age and gender) and personality traits (e.g. negative affectivity). For the purpose of this validation study the focus will be on the individual background characteristics i.e. gender, marital status, formal educational qualifications and race. These background characteristics or demographic variables often determine the position of the employee in a company or firm (e.g. Hartley *et al.*, 1991). The identification of specific risk groups within an organisation is done through the identification of background variables that correlate with the experience of job insecurity in its practical relevance (Näswall & De Witte, 2003). The positive outcome of identifying these risk groups is that a policy can be developed to ensure interventions to try and reduce job insecurity and its consequences in these groups. Further research suggests that variables within a specific demographic arena can identify the strength of the labour market position within a given culture or context and therefore must be correlated with job insecurity (De Witte, 2005).

Inconsistencies in the effect of job insecurity on individuals can be explained by gender differences specifically (Kausto, Elo, Lipponen & Elovainio, 2005). Inconsistent and inconclusive findings exist on the subject of gender job insecurity (for a review, see Westman, 2000). Men apparently *experience* higher levels of job insecurity than women on the one hand (e.g., Rosenblatt, Talmud & Ruvio, 1999), but Elizur (1994) indicated that women on the other hand are more *concerned* about job insecurity than men. There is, however, also evidence that the importance of job insecurity is experienced in the same manner by both women and men (e.g. Ferrie, Shipley, Marmot, Martikainen, Stansfield & Smith, 2001; Gaunt & Benjamin, 2007; Scozzaro & Subich, 1990). Rosenblatt *et al.* (1999) found that the effects of job insecurity on work attitudes are stronger for women. Women's view on job dependency has been identified as an explanation for the differences between genders.

According to De Witte (1999) and Wajcman and Martin (2002) psychological well-being has not been connected to feelings of job insecurity amongst women. Possible explanations for this

unexpected outcome can include various factors, for example variables indicating levels of education, occupational standing, employment status, the nature of studied samples and proposed controlled-for-gender-related covariates (in Barnett, 1998). Although in South Africa research for the differences between black and white employees did not yield conclusive results (Bosman 2005; Laba, Bosman & Buitendach, 2004; Labuschagne *et al.*, 2005; Maree, 2004; Selepe 2004) it may be hypothesized that white males may experience higher levels of job insecurity because of the introduction of the Employment Equity Act, no. 55 of 1998 (Republic of South Africa, 1998). This specific legislation created the opportunity for previously disadvantaged groups to be given preference when it comes to job opportunities. As a result of this legislation, the Chamber of Mines has introduced a Mining Charter which includes certain targets for employment equity (EE) figures to be met by South African gold mines. As a consequence, one can expect that in the South African context those least advantaged by this legislation (e.g. white respondents) may experience higher levels of job insecurity than those who benefit from this new dispensation (e.g. Black, Coloured and Indian respondents).

Not much work has been done on the role of the household situation of individuals in their experience of job insecurity. The influence of job insecurity on the household combination can have deleterious effects for the single person compared to the married or the ones living together, as the emotional, social and financial support from the partner may have a shielding effect (László, Pikhart, Kopp, Bobak, Pajak, Malyutina, Salavecz & Marmot, 2010).

Valuable resources for retaining a job or finding a new one are increasingly defined by credentials and cutting-edge skills (Fugate, Kinicki & Ashforth, 2004; Salzman, 1998). The level of education completed also increases the number of choices that employees have in the labour market. Sverke *et al.*, (2004) indicated that the higher the level of education, the lower the possibility of experiencing job insecurity. White-collar workers and professionals also tend to be less vulnerable to job loss, because of the fact that they normally have higher education levels (Näswall & DeWitte, 2003; Schaufeli, 1992). The position of an employee (e.g. blue- versus white-collar workers) in relation to their level of education indicates a weak labour market position for those with less education. It is clear that highly skilled employees will not experience job insecurity to the same extent as it would be experienced by lower level or

unskilled employees (e.g. De Weerd, De Witte, Catellani & Milesi, 2004; Näswall & De Witte, 2003). Therefore, it is also worthwhile to investigate levels of formal educational attainment as a possible influence in terms of the experience of job insecurity.

The hypotheses in this study are formulated around the notion that those with a weak labour market position – e.g. older workers, males (especially those designated as ‘white’), Afrikaans and English speaking individuals (being historically ‘white’) as opposed to African speaking individuals (being historically ‘black’), individuals dependent on a single source of income (such as single or divorced employees) and less skilled employees – will exhibit a higher level of experienced job insecurity.

Aims and hypothesis

The first objective of this study is to determine the construct equivalence, factorial validity, and internal consistency of a job insecurity scale that distinguishes between the qualitative and quantitative dimensions (Hellgren, Sverke & Isaksson, 1999) for different language groups in a South African gold mining company. Language in this study was used as a proxy for the different culture groups, including White and Black employees. The second objective is to determine whether the levels of experienced job insecurity differ in terms of demographic variables such as gender, household status, qualifications and race.

The hypotheses for the study are as follows:

- H1: The qualitative and quantitative scales of job insecurity are equivalent measuring instruments for employees from different language groups in a selected gold mining company in South Africa.
- H2: Job insecurity, as measured by the two-dimensional construct (qualitative and quantitative job insecurity) presents with acceptable levels of internal consistency for each of the subscales.
- H3: Men experience higher levels of job insecurity than women.
- H4: Single people experience higher levels of job insecurity than people who are married or living together.

- H5: Employees with a higher level of education experience less job insecurity than employees with a lower level of qualification.
- H6: White (traditionally English or Afrikaans speaking) employees experience higher levels of job insecurity than black (traditionally African speaking) employees.

METHOD

Research design

A cross-sectional survey design was used to answer the hypotheses. This particular design could enhance the chances to investigate whether the items measure two distinct dimensions of job insecurity, i.e. quantitative and qualitative job insecurity. This design is also particularly suited to investigations into the reliability of psychometric measures and investigating group differences.

Participants

The study population could be defined as a random sample of employees in different business units in one selected mining company in South Africa ($n = 566$). The participants included workers who have access to an e-mail facility in eight different business units which received a link via e-mail to a web-based survey. The organisation has operations in Gauteng, North West and Free State, thus covering a large geographic part of South Africa. Table 1 presents the characteristics of the participants.

Table 1

Characteristics of the Participants (n = 566)

Item	Category	Frequency	Percentage
Gender	Male	362	64,00
	Female	204	36,00
Household	Single	48	8,50
	Married or living with a partner	425	75,10
	Living with parents	8	1,40
	Divorced or separated	50	8,80
	Remarried	35	6,20
	Educational qualifications	Grade 10 (Standard 8)	30
	Grade 11 (Standard 9)	24	4,20
	Grade 12 (Standard 10)	194	34,30
	Technical College diploma	80	14,10
	Technical Diploma	89	15,70
	University Degree (BA, B Comm., Bsc)	76	13,40
	Postgraduate Degree (Honours, Masters or Doctorate)	73	12,90
Home language	Afrikaans	300	53,00
	English	164	29,00
	Sepedi	7	1,20
	Sesotho	34	6,00
	Setwana	16	2,80
	isiSwati	3	0,50
	Tshivenda	1	0,20
	isiXhosa	17	3,00
	isiZulu	10	1,80
	isiTshonga	5	0,90
	Other	9	1,60

The average age of the participants in this group is 40 years, with an average work experience with the company of 16 years. More males (64%) than females (36%) participated in the research. The majority of employees are male (90,5%), with females only representing 9,5% of the total population in this organisation (AngloGold Ashanti Employment Equity Report, 2008). The sample may thus be said to be over-represented -to some extent - in terms of women. The majority of the participants (75%) are married or living with a partner. Over half of the sample (56,10%) has a post-secondary educational qualification, while fewer than 10% (9,50%) of the sample have not completed high school. The language distribution shows that most of the

participants speak Afrikaans (53%) as a home/first language, while 29% speak English and 16,4% speak an African language. Taking into account the employees who have access to computer facilities in this organisation, the bigger population would be English and Afrikaans speaking employees who work on surface, thus the reflection in the home language response. Employees who speak an African language at home form the biggest group (>80%), but are mostly still employed in below surface, lower level jobs.

Measuring instruments

The *Experiences in the Modern World of Work* questionnaire was specifically developed to understand the white-collar worker' work experiences. This questionnaire firstly gathers biographical information regarding gender, marital status, levels of qualification, and race. The questionnaire presents the basic measuring instrument for a joint research project between North-West University in South Africa and Stockholm University in Sweden. Swedish reliability information is available in a technical report on the questionnaire (Näswall, Baraldi, Richter, Hellgren & Sverke, 2006). All participants completed the questionnaire in English.

The focus of this paper is on the psychometric properties of the proposed job insecurity measure. The specific scale measuring quantitative job insecurity consists of three items and was developed by Hellgren, Sverke and Isaksson (1999). This scale measures worry and uncertainty regarding the future existence of the current employment. The response alternatives range from 1 (disagree) to 5 (agree), and a high score on this scale represents a strong sense of quantitative job insecurity, (e.g. *"I am worried that I will be given notice or be retrenched"*).

The qualitative job insecurity scale consists of four items and was developed by Hellgren *et al.* (1999). This scale measures a worry about losing valued features of the job, such as remuneration, career prospects, and benefits. A high score indicates a high level of qualitative job insecurity, and the response alternatives range from 1 (disagree) to 5 (agree), (e.g. *"I feel worried about my career development within the organization"*).

Both scales (qualitative and quantitative) were shown to be highly reliable. The internal consistency reliability was satisfactory for both quantitative ($\alpha = 0,79$) and qualitative job insecurity ($\alpha = 0,75$) (Hellgren *et al.*, 1999).

Statistical Analysis

The analysis of the measured variables was carried out with the SPSS Programme Version 19.0 (SPSS, 2011). Construct (structural) equivalence was initiated to calculate the comparison of the factor structure for the different cultural groups included in this study. For the measurement of the job insecurity subscales for the different language groups an exploratory factor analysis with a Procrustean target rotation was applied to determine the construct equivalence (Van de Vijver & Leung, 1997). According to Van de Vijver and Leung (1997), the comparison between the similarities of the factor structure of the language groups can be explained to the underestimation due to the arbitrary spatial allocation of factors during factor analysis.

In order to remedy the underestimation the target rotation to be was conducted prior to comparing the factor solutions of different groups, by rotating the factor loading matrices with regard to one another in order to take full advantage of the agreement between the factors. The process include firstly that one group is randomly assigned to the target group, secondly, the factor loadings of the other groups are rotated towards the target group to form a common factor matrix. Finally, the factorial agreement amongst the groups is predicted with Tucker's coefficient (Tucker's *phi*) of agreement. The reason for using the Tucker's coefficient is that it is insensitive to proliferations of the factor loadings, but takes into account a constant added to all loadings of a factor. Because of the unknown sampling distribution of this index, it is impossible to establish confidence intervals. For evidence of factorial similarity or equivalence across different groups values higher than 0,95 are deemed to be sufficient (Van de Vijver & Leung, 1997), but also lower values than 0,90 and 0,85 (Ten Berge, 1986; Van de Vijver & Poortinga, 1994), can be included as a suggestion of satisfactory existing differences.

To determine the significance of differences between job insecurity of different groups, e.g. groups based on gender, marital status, qualification and language a multivariate analysis of variance (MANOVA) was used. The MANOVA test investigates if by chance mean differences

among groups on a combination of dependent variables are likely to have occurred (Tabachnick & Fidell, 2001). A new dependent variable that maximises group differences is created from the set of dependent variables in MANOVA. A one-way analysis of variance is then executed on the newly created dependant variable. The Wilks' Lambda test is used to understand the significance of the effects which indicates a likelihood-ratio statistic of the data under the assumption of equal population mean vectors for all groups against the possibility under the assumption that the population mean vectors are matching to those of the sample mean vectors for the different groups. Finally when a significant effect was found, MANOVA, ANOVA was then applied to ascertain which dependent variables were affected. For the multiple ANOVA's, a Bonferroni-type modification was made for inflated Type 1 error.

RESULTS

Factorial Validity and Internal Consistency of the Job Insecurity Scales (JIS)

A principle component analysis with a direct oblimin rotation was carried out on the three language groups' data (Afrikaans, English and African languages). The pattern matrix for the total sample and the three language samples' data are reported in Table 2.

Table 2

Rotated factor loadings for the Total Sample and Individual Language Groups

	Total Sample		Afrikaans		English		African languages	
	<i>F</i> ₁	<i>F</i> ₂	<i>F</i> ₁	<i>F</i> ₂	<i>F</i> ₁	<i>F</i> ₂	<i>F</i> ₁	<i>F</i> ₂
<i>Quantitative</i>								
I am worried that I will be given notice or be retrenched	0,84	0,01	-0,04	-0,86	0,86	-0,01	0,86	0,00
I am worried about being able to keep my job	0,87	0,02	-0,12	-0,90	0,92	0,01	0,80	0,08
I am afraid that I may lose my job	0,86	0,05	0,10	-0,84	0,91	0,03	0,82	-0,08
<i>Qualitative</i>								
I think my future prospects and opportunities within the organization are good	0,16	0,58	0,73	-0,03	0,07	0,65	0,64	-0,05
I feel worried about my career development within the organization	0,19	0,71	0,81	-0,03	0,28	0,65	0,51	0,50
I worry about not getting paid the amount of money I would like to be paid in the future	-0,23	0,83	0,79	0,12	-0,15	0,76	-0,22	0,95
I worry about getting less stimulating work tasks in the future	0,13	0,65	0,55	-0,20	0,02	0,71	0,36	0,63

Considering the total sample, Table 2 shows that the seven items do indeed refer to two components, which can be understood as qualitative job insecurity (three items; first factor) and quantitative job insecurity (four items: second factor), respectively. A cut-off for factor loadings of 0,30 was applied. A factor loading above 0,30 represent the ‘cleanest’ factor structure and has the best fit to the data (Costello & Osborne, 2005). When looking at the matrices of the different language groups, it can be seen that they mostly correspond. However, three items from the quantitative job insecurity scale presents with double loadings in the African languages group. The two factors also present with a large portion of shared variance as indicated by an inter-factor $r = 0,41$ ($p \leq 0,01$) in the total sample. This result may indicate problems in terms of equivalence, as items do not present with similar loadings across language groups. The African language group displayed weak component loadings with items 2 and 4 in the qualitative job insecurity scale showing double loadings. Here, partial evidence for the support of hypothesis one thus exists.

Table 3 below gives the descriptive statistics, Chronbach alpha coefficients of the job insecurity scales for the total sample and the different language groups.

Table 3

Descriptive Statistics and Chronbach Alpha Coefficients of the Job Insecurity Scales for the Total Sample and the different Language Groups

	Item	Mean	SD	Skewness	Kurtosis	Alpha (α)	r(Mean)
Total Sample (n=566)	Qualitative JI	2,74	0,98	0,05	-0,54	0,70	0,36
	Quantitative JI	3,47	1,12	-0,35	-0,63	0,85	0,65
Afrikaans Speaking (n=300)	Qualitative JI	2,77	0,98	0,06	-0,53	0,68	0,39
	Quantitative JI	3,45	1,10	-0,32	-0,62	0,84	0,64
English Speaking (n=164)	Qualitative JI	2,71	0,92	0,04	-0,53	0,66	0,35
	Quantitative JI	3,58	1,11	-0,43	-0,63	0,89	0,73
African Languages (n=93)	Qualitative JI	2,61	1,06	0,16	-0,54	0,63	0,33
	Quantitative JI	3,31	1,22	-0,24	-0,72	0,82	0,61

It is evident in Table 3 that mean score tends to be higher for the quantitative JI scales than for the qualitative JI scales. If one looks at the skewness and kurtosis of the data, it is clear that the scales are normally distributed, with all values falling between +1 and -1. The internal consistencies of the quantitative JI scale for all groups are acceptable, according to the guideline of $\alpha \geq 0,70$ (Nunnally & Bernstein, 1994). Although the total sample reached an acceptable level of reliability for the qualitative JI scale ($\alpha = 0,70$), the different language groups presented with lower reliability coefficients. It can be seen that - especially in the African languages group - the reliability of the scale is somewhat low ($\alpha = 0,63$). In terms of the mean inter-item correlations, it can also be seen that the quantitative job insecurity scale consistently shows higher correlations than the qualitative job insecurity scale. In general, these results lend support to hypothesis 2, that the subscales present with sufficient reliability and consistency across language groups. However, the results for the qualitative JI scale need to be interpreted with caution.

Table 4 presents the construct equivalence of the job insecurity scales for the three different language groups.

Table 4

Construct Equivalence of the JI Scales for the different language groups

Group	Percentage of sample	Qualitative JI	Quantitative JI
Afrikaans speaking	53,00	0,99	0,99
English speaking	29,00	0,99	0,99
African languages	16,43	0,87	0,97

Inspection of Table 4 shows that, after target rotation, the Tucker's *phi* coefficients for quantitative job insecurity for all the language groups were acceptable (i.e. $\chi^2 \geq 0,90$). The Tucker's *phi*-coefficient for the Afrikaans and English language groups was also acceptable for the qualitative job insecurity scale ($\chi^2 \geq 0,90$). For the African languages group, however, the coefficient is lower for the qualitative job insecurity scale (0,87), indicating questionable equivalence. This evidence, together with the low reliability of the scale, prompted an investigation into the bias of individual items for the African language group. These results are reported in Table 5.

Table 5

Item Bias Analysis of the Qualitative JI items

Item	Uniform Bias		Non-uniform Bias	
	Partial Eta ²	<i>p</i>	Partial Eta ²	<i>p</i>
1. I think my future prospects and opportunities within the company are good	0,87	0,00	0,02*	0,01+++
2. I feel worried about my career development within the organization	0,30	0,00	0,07*	0,01++
3. I worry about not getting paid the amount of money I would like to be paid in the future	0,24	0,01	0,22	0,01
4. I worry about getting less stimulating work tasks in the future	0,07	0,01++	0,03*	0,01++

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

+Practical significant (small effect): $Partial\ Eta^2 \geq 0,01$

++Practical significant (medium effect): $Partial\ Eta^2 \geq 0,06$

+++Practical significant (large effect): $Partial\ Eta^2 \geq 0,14$

Table 5 shows that significant eta square values for items 1, 2 and 4 exist regarding non-uniform bias, indicating that the influence of item functioning is not the same at all score levels. Item 4 also shows uniform bias, indicating that the influence of item functioning is the same at all the score levels.

The analyses concluded with an investigation into the biographical differences, based on the total group of participants.

Table 6

MANOVA of both Job Insecurity scales with Language, Gender, Household, and Education as independent variables

		Qualitative Job Insecurity	Quantitative Job Insecurity
Language	Afrikaans	2,79	3,,38
	English	2,88	3,53
	African	2,55	2,55
<i>p</i>		0,11	0,47
Gender	Male	2,78	3,53
	Female	2,65	3,37
<i>p</i>		0,04*	0,37
Household	Single	2,68	3,26
	Married	2,73	3,50
	Living with parents	2,74	3,56
	Divorced	2,71	3,32
	Remarried	2,85	3,42
<i>p</i>		0,93	0,68
Education	Grade 10	2,74	3,29
	Grade 11	2,73	3,12
	Grade 12	2,71	3,49
	Tech College Diploma	2,39	2,99
	Tech Diploma	2,81	3,42
	University Degree	2,69	3,41
	Postgraduate Degree	3,03	3,86
<i>p</i>		0,57	0,39

*Statistically significant: $p \leq 0.05$

Table 6 indicates that there are no statistically significant differences between the groups with regards to language, household and education. In the gender grouping the males tend to show a higher experience of qualitative job insecurity than the female group, although results relating to the qualitative job insecurity scale need to be interpreted with caution (see Table 3). In general, it can be concluded that factors such as home language, marital status and level of education have no influence in terms of experiences of the different components of insecurity.

DISCUSSION

The aims of this study were first of all to assess if the quantitative and qualitative scales of job insecurity are equivalent measuring instruments for employees from different language groups in a selected gold mining company in South Africa. Secondly, if job insecurity measured by the two-dimensional construct (qualitative and quantitative job insecurity) presents with acceptable levels of internal consistency for each of the subscales. Thirdly, the aim was to establish, if men experience higher levels of job insecurity than women and fourthly, if people with single sources of income - as indicated by their marital status - experience higher levels of job insecurity than people who are married or living together. The fifth aim was to see if employees with a higher level of education experiences less job insecurity than employees with a lower level of education, and lastly, if differences exist in the experience of job insecurity between white (traditionally English- or Afrikaans-speaking) and black (traditionally African-language speaking) employees, with the hypothesis stating that it may be higher for white employees.

With reference to hypothesis one and two, the results confirm construct equivalence for quantitative job insecurity for different language groups, e.g. Afrikaans, English and indigenous African language speaking employees. For qualitative job insecurity, however, it was seen that the scale indicates lower equivalence for the African languages group. The measure did not reach the critical value of 0,90 indicated by Van de Vijver and Poortinga (1994), but did exceed that suggested by Ten Berge (1986). Thus, the results regarding this scale are somewhat ambiguous in terms of equivalence. Further investigation into the item bias of the qualitative job insecurity scale for African language groups indicated the problematic items to be “*I think my future prospects and opportunities within the company are good,*” “*I feel worried about my career development within the organisation*” and “*I worry about getting less stimulating work tasks in the future.*” This phenomenon may be explained by the following: When both the main effect of culture and the interaction of level of insecurity and culture are not significant, the items are taken to be unbiased. Non-uniform bias occurs when an item distinguishes better in one group than in the other, indicating a significant interaction that the difference between cultural groups is not invariant across score levels (Mellenbergh, 1982; Van de Vijver & Leung, 1997). The non-uniform bias items in the qualitative job insecurity scale as indicated can be explained by

construct bias. Reasons for the bias experienced by the different cultural groups can be the differential appropriateness of the content of the statements (e.g., the prerequisite skills do not belong to the inventory of one of the language groups, or different conceptualisations of time as evidenced by use of the term “future” exist), also inadequate sampling of the construct, incomplete coverage of the construct and an overlap of the explanations of the construct across cultures in the sample. It also has to be borne in mind that this group is represented by the smallest amount of participants and a larger and more representative group may yield different findings. This means that future research specifically aimed at different cultural groups and testing of the understanding of specific constructs relating to job insecurity needs to be done to further validate these scales. Attention to the language of certain scale items in order to increase the interpretation and understanding of the specific content and context as well as developing of additional items. Thus, more caution should be taken when applying this specific scale. Further investigation would, however, clarify if these job-related elements can be taken into account when examining the quantitative measures of job insecurity. The more global, quantitative scale, however, proves to be equivalent and it can be safely concluded that it measures *the same* and *the same construct* across the different groups of employees.

For the third hypothesis, it was found that gender had a small, but statistically significant effect on employees' level of job insecurity. Males showed higher levels of qualitative job insecurity than females. Conversely, the results from Sverke *et al.* (2004) consistently show that females experience higher levels of job insecurity than men. The result from this study is, however, in line with the hypotheses that South African males experience higher levels of job insecurity than females. This result must also be interpreted within the context of the Employment Equity Act (1998) and the Mining Charter (2010) that seek to enhance female participation in the South African workforce and specifically in the mining sector. These results are in line with the assumption that males perceive more job insecurity due to the fact that they are least advantaged by the current employment equity legislation. Women stand to benefit more from the legislation and as a result experience less qualitative job insecurity. Given the aims of the employment equity legislation, men may find it harder to progress in their careers in terms of salary adjustments, or in terms of the responsibility-level of the work they are awarded. Hypothesis four

and five were not supported as it was clear that marital status and level of education have no influence in terms of experiences of qualitative and quantitative job insecurity.

The last hypothesis, which investigated the notion that white (traditionally English or Afrikaans speaking) will experience higher levels of job insecurity than black (traditionally African speaking) employees, was also not supported in these results.

The following reasons can explain why some of the hypotheses were not supported. Firstly, the way an individual perceives his background characteristic has a relation to the feeling of job insecurity (Näswall & De Witte, 2003). The actual value that a person links to his/her background characteristics, e.g. educational background, may or may not create the feeling of vulnerability. Secondly, the variables or background characteristic have been defined as predictors of job insecurity, but they can also function as moderators. This by implication does not mean that the proposed predictors for the study have nothing to do with job insecurity, but highlights the need to continue testing the moderating effects of the various demographical variables on the relation between job insecurity and other outcomes. Thirdly, the interpretation of the item content by different language groups can also have an influence on the importance that a person attaches to the variable. In the fourth place, the educational level of the participants -as indicated -was high for all the respondents, which explains the absence of feelings of job insecurity by the respondents, taking into account that one would normally expect that lower skilled employees display higher levels of job insecurity.

LIMITATIONS

The limitations of the study are firstly that self-report measures were relied upon. The use of a cross-functional study design also represents a limitation. Longitudinal data would also allow for a test of the stability of the measure over time. A further limitation could be the fact that although the population size was deemed adequate, the study sample did not seem to fully represent the total population of the company – i.e. Africans represent 80% of the population, while only 16% of the the sample indicated as such. The majority of the participants were white-

collar workers, because of the on-line nature of the questionnaire that required access to a computer.

After inspecting the psychometric properties of this measure of job insecurity, further research suggestions can be made. The nature of a reliable and valid measurement instrument for job insecurity will ensure the true assessment of the prevalence of job insecurity in South Africa. A representative sample of the working population in the mining industry needs to be surveyed in order to establish representative norms for job insecurity in demographic categories (e.g. gender, educational level) which would enable comparisons between different organisations and groups of employees. Different data sets from different organisations (on this subject) can be combined to determine such norms. Longitudinal research and trends studies are also recommended to measure the influence and prevalence of job insecurity over a period of time.

Further research to the study of job insecurity can include the analysis of the antecedents and therefore the consequences for individuals in organisations. Sverke *et al.* (2004), advised for specific attention to moderating variables, which might mitigate the consequences of job insecurity. Further research in the field of job insecurity in South Africa will assist organisations in preventing the detrimental effects it has on individuals in the working environment.

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CHAPTER 3
ARTICLE 2

JOB INSECURITY, WORK STRESS AND SAFETY PERFORMANCE IN A MULTI-NATIONAL GOLD MINING COMPANY

Melissa Jacobs

ABSTRACT

Orientation: The increased prevalence of job insecurity in the mining industry has led to an interest on the influence thereof on important aspects of adherence to legal and productivity requirements.

Research purpose: The primary objective of this study was to investigate the relationship of work stress and job insecurity with unsafe behaviour at work. A secondary objective was the testing of the possible moderating effect of individual employees' coping behaviour between experienced work stress and job insecurity, and unsafe behaviour in a mining company.

Motivation for the study: The association of job insecurity and work stressors with negative safety outcomes has not been given a lot of attention specifically in the mining industry.

Research design, approach and method: A cross-sectional survey design was used ($n = 771$). An electronic survey, with a biographical questionnaire and scales on role conflict, role ambiguity, role overload, job insecurity, coping, and unsafe behaviour at work were administered. To establish the construct validity of the measuring instruments, exploratory factor analyses were employed. Stepwise logistic regression was conducted to clarify the contribution of work related attitudes and experiences (job insecurity and work stressors) to the participants' safety behaviour.

Main findings: The results indicated that when employees experience work stress and job insecurity, their safety compliance is low.

Practical/managerial implications: Investigation of coping strategies that are displayed by individuals and offering of support by means of wellness programs can have positive effects on safety compliance behaviours. Companies need to pay more attention to the clarifying of roles and responsibilities and ensuring career plans for employees.

Contribution/value-add: In the presence of job insecurity and role stressors employees will apply coping strategies which may help or hinder their safety behavior at work.

Key words: Qualitative and quantitative job insecurity, work stress, role ambiguity, role conflict, qualitative and quantitative role overload, coping, moderation, safety performance, safety outcomes

Job insecurity has been widely researched and reported as having created negative feelings and experiences for employees in the workplace (Cheng & Chan, 2008; Sparks, Faragher & Cooper 2001; Sverke, Hellgren & Näswall, 2002), including negative health outcomes (De Witte, 1999; De Witte, De Cuyper, Handaja, Sverke, Näswall & Hellgren, 2010; Mak & Mueller, 2000; Mohr, 2000; Näswall, 2004; Rothmann & Joubert, 2007). The association of job insecurity with negative safety compliance however, has not been given a lot of attention, especially in dangerous workplaces. There is literature on the precursors of worker safety, researching and addressing the influence of ergonomic surroundings (Melamed, Luz, Najemson, Jucha & Green, 1989), personal employee characteristics such as education, gender, and personality (Ferguson, McNally & Both 1984; Hansen, 1989) and lastly also the organisational safety climate (Burke, Sarpy, Tesluk & Smith-Crowe, 2002; Probst, 2004). However, few studies investigated the influence of job insecurity on the outcome of safety behaviour (Probst & Brubaker, 2001, 2007; Probst, 2002, 2004; Størseth, 2006).

According to the Chamber of mines, pressure from government for compliance with safety legislation has increased in the South African mining context as fatality and injury statistics soar (Barker, 2009). The recent global downturn, however, means a reduction of jobs in the mining industry and therefore an increase in pressure on employees and managers to work more productively and safely (Business World, 2009). Thus, the reduction and subsequent restructuring of jobs often leads to fewer people available to do the work and therefore increases extra work tasks, shorten the time in which to complete work, and as a result increases personal stress for the individual (Rundmo & Iversen, 2007; Rundmo & Sjöberg, 1998). Job insecurity is also seen as a stressor (Barling & Kelloway, 1996), and has frequently been noted as contributing to work-related strain responses (Størseth, 2006).

Effects of rising job insecurity are well documented, especially on employee attitudes, behaviours, and physical and psychological health outcomes. However, as Landsbergis, Cahill and Schnall (1999) and Probst (2002, 2004) pointed out, research on the detrimental consequences of job insecurity for employee safety compliances and injury rates is very limited. The work of Probst and Brubaker (2001, 2007) suggests a negative relation between job insecurity, work stress and safety compliance outcomes. Explaining these results, employees

tend to disregard safety policies more and more in order to increase productivity and ensure job retention. Research has also indicated a strong relation between job insecurity and health and well-being (Armstrong-Strassen, 1993; Heaney, Israel & House, 1994; Hellgren & Sverke, 2003; Ibrahim, Smith & Muntaner, 2009). Since coping (managing stress) is considered a determinant of health and quality of life, the importance of studying coping mechanisms in the workplace can contribute to organisational effectiveness and theory (Folkman & Moskowitz, 2000; Zeidner & Endler, 1996). The role of coping in the relationship between work stress and job insecurity and safety compliance, specifically, needs consideration. Typically, coping is considered as a moderator between work stress and its outcomes (Edwards & Baglioni, 2000).

A moderator is a variable that will modify the influence of job insecurity and work stress (i.e. role conflict, clarity or overload) on the consequent variables. The strengths of correlations for moderators vary across studies, due to the fact that the outcomes of job insecurity are influenced by many other aspects (Sverke *et al.*, 2002). Various studies have suggested moderators like occupational status (De Witte, 1999), gender characteristics (Kinnunen & Mauno, 1998), disposition of individuals (Roskies, Louis-Guerin & Fournier, 1993), control over work (Barling & Kelloway, 1996) and support from supervisors and co-workers (Lim, 1996).

The question thus beckons whether job insecurity, in the presence of work stress, influences work behaviours in a negative way and as a consequence has detrimental effects on the safety compliance of individuals (Rundmo & Iversen, 2007). The aim of this study was to investigate the relationship between work stressors and job insecurity in relation to safety compliance for a group of employees in the gold mining industry in South Africa. A secondary objective was the testing of the possible moderating effect of employee coping strategies between experienced work stress and job insecurity.

Work stress

The concept of stress has been defined as early as the 1950s by Selye (1956), as an arousal in response to something that needs to be warded off or avoided. It also points to not knowing whether an event will occur, thereby inducing “a state involving uncertainty about something important” (Schuler, 1982, p. 6). This creates a mobilisation of an activity or reaction to the

stress stimulus. The implication of this stimulus can be defined as coming from an external source, thereby suggesting direct targets of change (Sulsky & Smith, 2005). The appraisal of these stress sources differs from individual to individual, and can lead to specific short-term and eventually chronic outcomes, but it can also be influenced by specific characteristics of the person or group, and/or situation (Viswesvaran, Sanchez & Fisher, 1999).

The nature of job insecurity has frequently been studied and defined in within the framework of stress theory and has led to many predictions of how individuals or groups could react to the experiences of job insecurity (Reisel, Chia & Maloles, 2005). Research on stress and job insecurity further listed job insecurity as a major contributor to work-life stress and the prolonged experience of insecurity can be more devastating than the actual loss of the job itself (Jacobson, 1991; Lazarus & Folkman, 1984). Downsizing, and ultimately a reduction in the workforce, is often the cause of an increase of work, or additional and new tasks for the individuals who are still employed. Greater demands in terms of time, volume of work and job demands lead to more stress in general for the individual (Rundmo, 1995; Rundmo & Sjöberg, 1998). The consequences of these stress appraisals by individuals can be either psychological, somatic, or behavioural (Jex & Beehr, 1991; Spector, 2000). The attitude that a worker has as a consequence of a certain stressor is classified as the psychological reaction, for example dissatisfaction. Job dissatisfaction also plays a major role in job-related strain and is seen as a valid predictor of work injuries (Paul & Maiti, 2007).

The employee's well-being is affected by the somatic stress reaction, and this can be evidenced in health-related complaints. The important stress reaction related to this study is the behavioural stress reaction, in terms of the actions that an employee takes to alleviate certain stressors, or the response to the stress experienced (Näswall, 2004). Undesirable behavioural responses or reactions to stress (or job insecurity) can be the cause of negative attitudes or perceptions (Reisel *et al.*, 2005).

Given the fact that most of the recent studies about work stress experiences and consequences have been conducted in Western countries, it must be taken into account that cultural influences on the experience of work stress can be significant. In African countries people tend to be more

tolerant of uncertainty and unpredictability, as a result of not being able to avoid the uncertainty (Hang-yue, Foley & Loi, 2005). It has been found that the experience of job insecurity might influence safety motivation and knowledge negatively, and therefore increase risk behaviours (Rundmo & Iversen, 2007). Apart from job insecurity, the defining of specific role stressors, namely role conflict, role ambiguity (or *lack of* role clarity) and role overload are described in this study (Chen, Chen, Tsai & Lo, 2007; Glazer & Beehr, 2005; Montgomery, Blodgett & Barnes, 1996; Newstrom & Davis, 2002; Örtqvist & Wincent 2006; Rothmann & Malan, 2006; Singh, 1998).

Role conflict

Larson (2004) describes role conflict as the outcome experienced when job demands are contradictory, making the compliance to role expectations difficult. Therefore, role conflict is the result of role demands clashing. Role conflict has therefore been identified as an important cause of work-related stress with numerous negative outcomes associated with it, such as lowered job gratification and commitment to the organisational, decreased job performance, impaired organisational efficiencies and eventually higher intentions to leave the organisation (Eatlough, Chang, Miloslavic & Johnson 2011; Fisher & Gitelson, 1983, Jackson & Schuler, 1985; Lambert & Lambert, 2001; Örtqvist & Wincent, 2006).

Role ambiguity (Lack of role clarity)

Role ambiguity occurs when an individual receives insufficient or unclear information on how to perform the expected tasks for successful completion of the job (Khan, Wolfe, Quinn, Snoek & Rosenthal, 1964). Role ambiguity, or a lack of role clarity, has also further been described as the absence of clear directions to complete the task or a lack of feedback on task progression (Aziz, 2004). Similar to role conflict, previous studies have shown that higher levels of role ambiguity relate to lower work commitment, job performance and involvement, higher work-related pressures, more stress, and as a result lower satisfaction with the job leading to higher turnover intentions (Eatlough *et al.*, 2011; Griffin, Neal & Parker, 2007; Murphy & Jackson, 1999; Tubre & Collins, 2000). Links have been identified between the lack of role clarity and employees' well-being and safety performance, whereas lower well-being indicates a higher risk of poor safety compliance (Bray & Brawley, 2002; Parker, Axtell & Turner, 2001).

Role overload

Role overload differs from tasks which involve heavy responsibilities and/or long hours continuing over long periods of time. It rather refers to very high workloads that influence the successful completion of work negatively (Parker *et al.*, 2001). Qualitative and quantitative overload are the two specific dimensions of work overload that have been identified in theory (Beehr, Walsh & Taber, 1976; Sverke, Hellgren & Öhrming, 1999). Qualitative overload refers to constraints of available time or a lack of access to specific resources, which in turn hinders the individual in the successful completion of the task. Quantitative overload describes the personal view point of an individual that he does not have the required capability or skill to complete the task (Thatcher, Stepina, Srite & Liu, 2003). It has been identified in previous research that greater levels of strain, e.g. anxiety, feelings of depression and poor work performance, occur when work overload is present (Cooper, Dewe & O'Driscoll, 2001; Glazer & Beehr, 2005; Kushnir & Melamed, 1991). Newman, Griffin and Mason, (2005) indicated in their research that workload and lack of role clarity are of special interest with regards to safety perceptions and safety outcomes. This is also the case for safety behaviour (Hofmann & Stetzer, 1998; Parker *et al.*, 2001).

Job insecurity and safety compliance behaviour

Research suggests that experiencing job insecurity may influence the outcomes and results of employees' safety compliance and behaviour negatively (Grunberg, Moore & Greenberg, 1996; Probst, 2002; Probst & Brubaker, 2001). Probst and Brubaker (2001) further found that a decrease in an employee's complying with safety rules and standards was positively related to an increase in job insecurity. As a result, employees with more secure jobs did not suffer as many incidents and accidents, compared to employees with insecure jobs (Probst, 2004). Previous researchers (Ashford, Lee & Bobko, 1989; De Witte, 2000; Mauno & Kinnunen, 1999; Siegrist, 1996; Sverke, Hellgren, Näswall, Chirumbolo, De Witte & Goslinga, 2004) clearly established the link between stressors such as excessive demands and feelings of job insecurity, while Guastello, Gershon and Murphy (1999), Murray, Fitzpatrick and O'Connell (1997), and Siu, Phillips and Leung (2004), confirmed that workers who have indicated high perceptions of job insecurity, anxiety and stress, tend to take fewer precautions and get involved in more injuries and accidents.

Coping

Coping behaviours have been described in numerous studies as a very important aspect of understanding human behaviour (Cox & Ferguson, 1991; Lazarus & Folkman, 1984). Coping is defined in this context as the intellectual and behavioural attempts to alleviate, decrease, or endure the stressful demands of individuals with their immediate environment (Lazarus & Folkman, 1984; Mostert & Joubert, 2005). Although many studies have explored the negative influences of occupational stressors on an individual's work performance (Cropanzano, Rupp & Byrne, 2003; LePine, Podsakoff & Lepine, 2005; Spector, 2008), somewhat limited studies have addressed the working individual's ability to cope with work as opposed to general life-stressors (Cartwright & Cooper, 1996; Lazarus, 1991).

The original context that was set by the cybernetic theory described self-adaptable systems as framework for the understanding of human behaviour (Ashby, 1966; Wiener, 1984). The theory elaborates on explaining specific psychological and behavioural phenomena, such as goal setting (Champion & Lord, 1982), motivation (Lord & Hanges, 1987; Taylor, Fisher & Ilgen, 1984), impression management (Bozeman & Kacmar, 1997) and mental and physical health (Hyland, 1987; Pyszczynski & Greenberg, 1987; Seeman, 1989).

The theory of cybernetic principles has also been applied to concepts of stress and coping (Carver & Scheier, 1985; Cummings & Cooper, 1979; Edwards, 1992; Latack, Kinicki & Prussia, 1995). Edwards developed the integrative theory of stress, coping and well-being in organisations in 1992, drawing from the cybernetic theory. Stress in this instance is described as inconsistencies that occur between the individual's internal and external environment, which in turn is harmful to the well-being of an individual. In order to restore the balance, the individual will make use of certain coping strategies. Edwards (1992) integrated other theories that defined stress in terms of person-environment congruence and incorporates feedback relationships linking coping to the sources of stress (Beehr & Newman, 1978, 1998; French, Caplan & Van Harrison, 1982; Lazarus & Folkman, 1984; Schuler, 1980). Through the use of coping strategies, the individual is attempting to restore well-being by reducing or eliminating adverse effects of stress (Guppy, Edwards, Brough, Peters-Bean, Scale & Short, 2004).

Coping, according to Edwards (1992, 1998), has been described in five specific ways: Firstly, directed at well-being to decrease stress, secondly, by changing the situation, thirdly, through accommodating the stressor, fourthly, by downgrading the importance of the stressor, and lastly by avoiding the stressor.

Aims and hypothesis

Based on the reasoning above, the present study aims to examine the influence of workplace stressors, i.e. role conflict, role ambiguity and role overload, and qualitative and quantitative job insecurity, on workers' safety behaviour. Two specific hypotheses were investigated:

- H1: Qualitative and quantitative aspects of job insecurity, together with work stress (i.e. role conflict, ambiguity and role overload), will be positively related to unsafe behaviour of employees from a selected gold mining company based in South Africa.
- H2: Coping will moderate the influence of role stress and job insecurity on worker safety behaviour.

The model for these hypotheses is illustrated below:

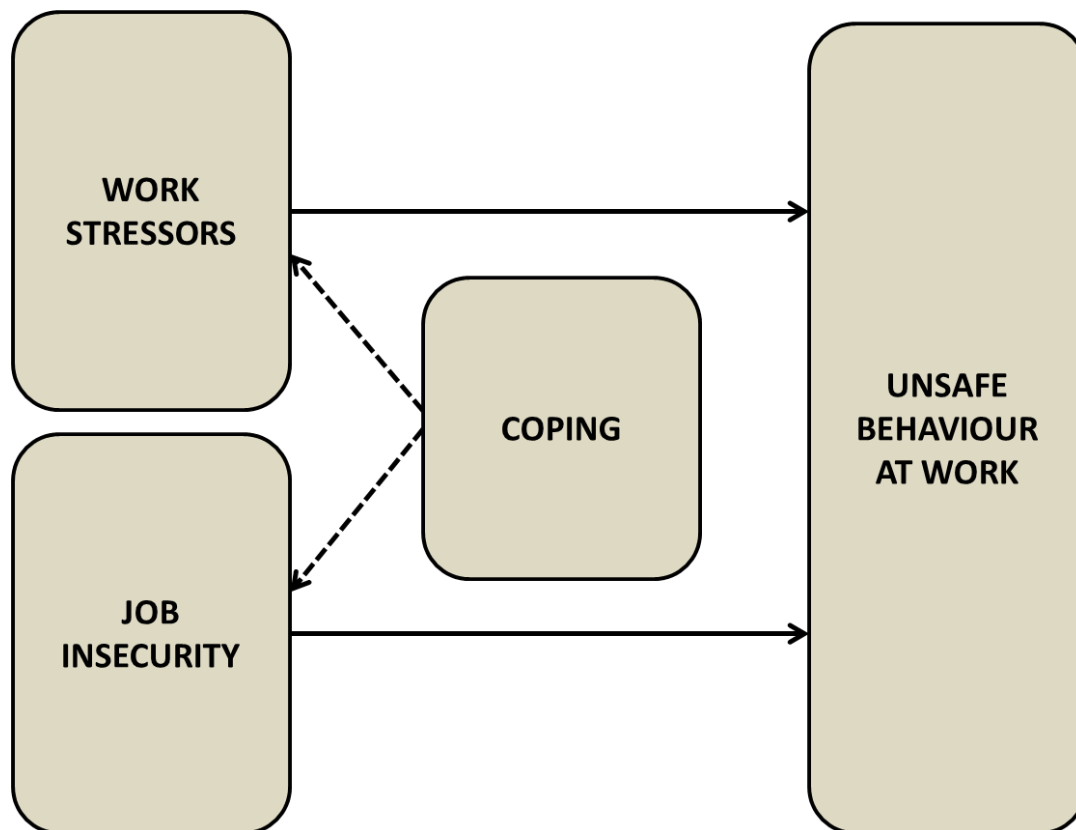


Figure 1. A research model illustrating the relationship of work stress and job insecurity with unsafe behaviour at work and coping.

METHOD

Research design

A cross-sectional survey design was used to test the research hypotheses. According to Shaughnessy and Zechmeister (1997), cross-sectional designs give a clear indication of the inter-relationship amongst variables within a population observed at a definite point in time. This type of design is particularly suited to investigate the reliability of psychometric measures, group differences and addressing the descriptive and predictive purposes associated with correlation research.

Participants

The study population could be defined as a random sample of employees in different business units in one selected multi-national mining company, based in South Africa ($n = 771$). The participants included workers who have access to e-mail facilities in five different countries in Africa. The organisation has mining operations in South Africa, Mali, Namibia, Tanzania and Ghana, and thus covers a large geographic area in South, East and West Africa. Characteristics of the respondents are reported in Table 1.

Table 1

Demographic Characteristics of the Participants (n = 771)

<i>Item</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage</i>
Gender	Male	539	69,90
	Female	232	30,10
Household	Single	66	8,60
	Married or living with a partner	595	77,20
	Living with parents	9	1,20
	Divorced or separated	59	7,70
	Remarried	42	5,40
Educational qualifications	Grade 10 (Standard 8)	31	4,00
	Grade 11 (Standard 9)	26	3,40
	Grade 12 (Standard 10)	205	26,60
	Technical College diploma	126	16,30
	Technical Diploma	130	16,90
	University Degree (BA, B Comm., Bsc.)	131	17,00
	Postgraduate Degree (Honours, Masters or Doctorate)	122	15,80
Home language	Afrikaans	325	42,20
	English	247	32,00
	Sepedi	8	1,00
	Sesotho	36	4,70
	Setwana	17	2,20
	isiSwati	3	0,40
	Tshivenda	1	0,10
	isiXhosa	17	2,20
	isiZulu	11	1,40
	isiTshonga	5	0,60
	Other	101	13,10
Employment status	Full time	762	98,80
	Part-time	9	1,20
Union membership	Yes	397	51,50
	No	374	48,50
Country of work	Mali	61	7,90
	Namibia	15	1,90
	South Africa	566	73,40
	Tanzania	34	4,40
	Ghana	95	12,30

From Table 1 it can be seen that more males (69,9%) than females (30,1%) participated in the research. All participants have an average of 14 years work experience with the organisation, and

an average age of 43 years. The majority of the participants (77,2%) are married or living with a partner. Over half of the sample (66%) has a tertiary level of education, and less than 10% (7,4%) of the sample has not completed high school. The language distribution shows that most of the participants speak Afrikaans as a home/first language (42,2%), while 32% speak English and 25,7% an African language as their first language. Most participants (98,8%) indicated that they are employed on a full time basis and 51,5% of the employees belong to a union. Most of the respondents were from the South African operations (73,4%), with representation from Mali (7,9%), Namibia (1,9%), Tanzania (4,4%), and Ghana (12,3%).

Measuring instruments

For the purpose of this study, scales were used from the *Experiences in the Modern World of Work* (Näswall, Baraldi, Richter, Hellgren & Sverke, 2006) questionnaire. Näswall *et al.* (2006) summarised Swedish reliability information about the questionnaire in a technical report. The questionnaire firstly gathers biographical information regarding age, qualification, gender, and race. All participants completed the questionnaire electronically and in English. The focus of this paper is on work stress, i.e. role conflict, role ambiguity, role overload (quantitative and qualitative), job insecurity (qualitative and quantitative), coping strategies, and unsafe behaviour at work. The measures for these variables are described below.

The ***Role conflict*** scale was based on the scale by Rizzo, House and Lirtzman (1970). It consists of four items indicating the conflict between how the employees think the work should be done and how supervisors or others tell them to do it. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), (e.g. “*I have to buck a rule or policy in order to carry out an assignment*”) and a lower score indicates the presence of greater conflict. This scale was found to be psychometrically sound with a reliability ranging between 0,77 and 0,78 in a Swedish sample (Näswall *et al.*, 2006).

Role ambiguity (or lack of role clarity) is measured by a combination of items from those of Rizzo *et al.* (1970) and Caplan (1971). It consists of four items measuring the extent to which the purpose of one’s work tasks is clear. The responses ranged from 1 (strongly agree) to 5

(strongly disagree), (e.g. “*I know exactly what is expected of me*” (reversed item)) where a low score indicates higher role ambiguity or lack of role clarity. The reliabilities were satisfactory with $\alpha > 0,78$ for different samples (Näswall *et al.*, 2006).

Role overload was measured with a scale capturing two dimensions thereof, namely quantitative and qualitative role overload. The quantitative role overload scale consisted of three items (Beehr, Walsh & Taber, 1976), and measures the feeling of having too much to do in too little time. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), e.g. “*I often have too much to do in my job.*” A low score represents a heavier workload. The reliability coefficients were found acceptable in different samples ($\alpha \geq 0,73$; Näswall *et al.*, 2006). The qualitative role overload dimension consisted of four items developed by Sverke, Hellgren and Öhrming (1999), and captures the sense that the work is too difficult or demanding. The responses also ranged from 1 (strongly agree) to 5 (strongly disagree), with a low score representing more difficult or demanding tasks. An example of an item from this scale is “*I feel unreasonable demands in my work.*” Good reliability ($\alpha > 0.70$) was found in different samples (Näswall *et al.*, 2006).

The **Qualitative job insecurity** scale consists of four items and was developed by Hellgren, Sverke and Isaksson, (1999). This scale measures a worry about losing valued features of the job, such as remuneration, career prospects, and benefits, e.g. “*I feel worried about my career development within the organization*”. A high score indicates a low level of qualitative job insecurity, and the response alternatives range from 1 (strongly agree) to 5 (strongly disagree). The specific scale measuring **Quantitative job insecurity** consists of three items and was also developed by Hellgren *et al.* (1999). This scale measures worry and uncertainty regarding the future existence of the current employment. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), and a low score on this scale represents a strong sense of quantitative job insecurity. One example item of the scale measuring quantitative job insecurity is “*I am worried that I will be given notice or be retrenched.*” Previous research indicates the internal consistency reliability to be satisfactory for both Quantitative ($\alpha = 0,79$) and Qualitative job insecurity ($\alpha = 0,75$) (Hellgren *et al.*, 1999). Previous South African research has shown the job insecurity scale to be reliable locally, with a reliability for total insecurity of $\alpha = 0,90$

(Pienaar, Sieberhagen & Mostert, 2007; Jacobs & Pienaar, 2012). *Unsafe behaviour at work* was measured by the *Workplace accidents and Safety compliance* measure of Probst and Brubaker (2001). The scale consists of a single item reflecting on whether an individual ignores safety regulations (e.g. “*I ignore safety regulations in my workplace*”) with a five-point response scale 1 (strongly agree) to 5 (strongly disagree), with a lower score indicating greater risk.

Coping strategies were measured with a five-dimension scale developed by Guppy *et al.* (2004). The 15-item version of their scale was applied. Each factor represents an aspect of the coping process: Symptom reduction, Changing the situation, Accommodation, Devaluation, and Avoidance. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), (e.g. “*I try to change the situation to get what I want*” from the Change the situation subscale), and a high score represents a lower preference for the coping strategy being implemented by the individual. The reliability coefficients for the five subscales have been found to be the following: Symptom reduction – ranging between $\alpha = 0,38$ and $\alpha = 0,56$, Changing the situation: $\alpha = 0,80$; Accommodation: $\alpha > 0,40$; Devaluation: – ranging between $\alpha = 0,70$ and $\alpha = 0,79$; Avoidance: – ranging between $\alpha = 0,68$ and $\alpha = 0,76$ (Näswall *et al.*, 2006).

Statistical Analysis

The SPSS Programme, version 19. (SPSS, 2011) was used for the statistical analysis in this study. To establish the construct validity of the measuring instruments an exploratory factor analysis was employed. The internal consistencies of the instruments were indicated by the Cronbach’s alpha test. According to Sekaran and Bougie (2010), the Cronbach’s alpha coefficient has shown to be the most prevalent test of inter-item consistency reliability. For 95% confidence, the internal level p was set at $\leq 0,05$ for statistical significance. Pearson product–moment correlation coefficients were used to specify the relationships between variables. The cut-off point of 0,30 for correlation coefficients was set for practical significance, as indicated by Cohen (1988).

In order to clarify the contribution of work related attitudes and experiences (job insecurity, work stressors, i.e. role conflict, role clarity, and role overload) to the participants’ safety behaviour a

stepwise logistic regression was conducted. The stepwise process picks a subset that offers the best predictive power from a group of potential predictors. The goal of logistic regression is to assess the ‘goodness of fit’ and then provides the adequacy of the research model (set of predictor variables). This technique allows the determination of how well the set of predictor variables predicts the dependant variable (Pallant, 2007). Moderation was investigated by creating interaction terms between the independent variables (i.e. stress, insecurity and coping) (see Aiken & West, 1991). In order to perform a logistic regression, the dependent variable needs to be on two levels. Here, the responses to the safety question were recorded into “*Compliant*” (only participants that indicate that they never ignore safety regulations in their workplace; i.e. scored a “5”, indicating that they *strongly disagree* with the statement that they ignore safety regulations ($n = 664$)), and “*Non-compliant*”, which included all other participants who *sometimes* ignore safety regulations (i.e. all participants who indicated that they *strongly agree* to *somewhat disagree* with the statement that they ignore safety regulations ($n = 107$)).

RESULTS

Table 2 shows the Cronbach alpha coefficients obtained for all the subscales of the described measuring instruments. The reliabilities ranged from 0,51 to 0,84. The variables describing the work stress dimension included Role Ambiguity ($\alpha = 0,65$), Role Conflict ($\alpha = 0,65$), and Role Overload – Quantitative (0,58) and Role Overload – Qualitative ($\alpha = 0,73$). A Cronbach coefficient of 0,66 was found for Job Insecurity – Qualitative, while Coping – Symptom Reduction (0,51) also showed a low alpha value (ref. Nunnally & Bernstein, 1994). However, given the exploratory nature of this investigation, values above 0,60 were deemed acceptable (Hair, Money, Samouel & Page, 2007; Konting, 2005). In order to increase the alpha value of the indicator of Role Overload, the two subscales (Qualitative and Quantitative Role Overload) were combined into a Total Role Overload Scale, which yielded an acceptable alpha coefficient of 0,78. Because of the very low alpha value of the Coping – Symptom Reduction variable (0, 51), it was decided to exclude it from any further analysis.

It is evident from Table 2 that the scores from the various scales are relatively normally distributed, with low skewness and kurtosis; except for the Unsafe Behaviour at Work variable

which is negatively skewed (i.e. most respondents indicated themselves as being safe). The reliability of the measure cannot be computed, since it is indicated by a single item.

Table 2

Descriptive Statistics and Chronbach Alpha Coefficients of the Measuring instruments

Item	Mean	SD	Skewness	Kurtosis	Alpha (α)
Role conflict	3,43	0,84	-0,24	-0,38	0,65
Role ambiguity	3,96	0,88	-0,86	0,40	0,65
Quantitative role overload -	2,79	0,88	0,09	-0,42	0,58
Qualitative role overload -	3,57	0,89	-0,39	-0,30	0,73
Total role overload	3,23	0,78	-0,17	-0,33	0,78
Quantitative job insecurity -	3,52	1,14	-0,41	-0,66	0,84
Qualitative job insecurity -	3,03	0,96	0,01	-0,51	0,66
Unsafe behaviour at work	1,86	0,35	-2,09*	2,39*	-
Coping – Symptom reduction	2,67	0,77	0,12	0,05	0,51
Coping - Changing the situation	2,25	0,83	0,49	-0,02	0,77
Coping - Accommodation	2,82	0,91	0,16	-0,35	0,74
Coping – Devaluation	3,13	0,10	0,04	-0,35	0,71
Coping - Avoidance	3,59	0,99	-0,55	-0,22	0,78

*High skewness and/or kurtosis

Correlation coefficients were used to specify the relationship between all the variables. Since Unsafe Behaviour at Work was assessed with a single item, Spearman-rank correlations were used to compute relationships for this variable, as it is a more restrictive procedure than Pearson’s product-moment correlation. The correlations are reported in Table 3 below.

Table 3

Correlations between Role Conflict, Role Ambiguity, Total Role Overload, Qualitative and Quantitative Job Insecurity, Safety Compliance, and Coping (Changing the situation, Accommodation, Devaluation, and Avoidance)

	1	2	3	4	5	6	7	8	9	10
1 Role conflict	-									
2 Role ambiguity	0.42 ^{**+}	-								
3 Total role overload	0.50 ^{***}	0.28 ^{**}	-							
4 Quantitative job insecurity	0.25 ^{**}	0.35 ^{**+}	0.19 ^{**}	-						
5 Qualitative job insecurity	0.29 ^{**}	0.39 ^{**+}	0.25 ^{**}	0.47 ^{**+}	-					
6 Unsafe behaviour at work	0.15 [*]	0.28 ^{**}	0.10 ^{**}	0.20 ^{**}	0.06	-				
7 Changing the situation	0.06	-0.13 ^{**}	0.05	-0.09 [*]	0.01	-0.21 ^{**}	-			
8 Accommodation	-0.04	-0.08 [*]	-0.05	0.04	-0.03	-0.01	0.14 ^{**}	-		
9 Avoidance	-0.05	0.09 [*]	0.04	0.13 ^{**}	0.09 [*]	0.19 ^{**}	-0.02	0.40 ^{**+}	-	
10 Devaluation	0.01	0.02	-0.02	0.08	0.05	0.06	0.12 ^{**}	0.41 ^{**+}	0.47 ^{**+}	-

^{*}Correlation is significant at the 0.05 level (2-tailed)

^{**}Correlation is significant at the 0.01 level (2-tailed)

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

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

Table 3 shows that Role Conflict shows positive, statistically significant correlations with Role Ambiguity, Total Role Overload (practically significant: large effect), Qualitative and Quantitative Job Insecurity and being Unsafe at Work. Role Ambiguity shows positive, statistically significant correlations with Total Role Overload, Qualitative and Quantitative Job Insecurity (practically significant: medium effects), being Unsafe at Work and Preference for Avoidance as a coping strategy. Role Ambiguity also shows negative, statistically significant correlations with Changing the Situation and Accommodation as coping strategies. Total Role Overload showed statistically significant positive correlations with Qualitative and Quantitative Job Insecurity and being Unsafe at Work. Qualitative and Quantitative Job Insecurity were statistically and practically significantly positively related, with medium effect. Quantitative Job Insecurity also relates statistically significantly positively to Unsafe Behaviour at Work and preferring an Avoidance Coping Strategy; while it relates negatively to Changing the Situation as a coping strategy. Qualitative Job Insecurity showed a statistically significant positive correlation with an Avoidance Coping Strategy. Being Unsafe at Work relates statistically significantly with the coping strategies of Changing the Situation (negative) and Avoidance (positive). Among the coping strategies, Changing the Situation relates positively and statistically significantly to

Accommodation and Devaluation; Accommodation relates positively with Avoidance and Devaluation (practically significant, medium effects); and Avoidance relates positively to Devaluation (practically significant, medium effect).

In the final step, a logistic regression was performed in order to gauge which of the independent variables held any predictive power in terms of safety behaviour, and also if evidence for the moderating role of coping exists. The results are reported in Table 4 below.

Table 4

Logistic Regression Predicting Likelihood of Reporting Unsafe behaviour at work

Step		B	S.E.	Wald	Df	p	Odds Ratio	95% C.I. for EXP Ratio (β)	
								Lower	Upper
1	Role ambiguity	0,37	0,16	5,59	1	0,02*	1,45	1,07	1,97
	Role conflict	0,50	0,19	7,18	1	0,01*	1,65	1,14	2,38
	Total role overload	-0,16	0,18	0,80	1	0,37	0,85	0,59	1,22
2	Quantitative job insecurity	0,27	0,12	4,87	1	0,03*	1,31	1,03	1,66
	Qualitative job insecurity	-0,11	0,16	0,49	1	0,48	0,89	0,65	1,23
3	Coping – Avoidance	0,32	0,16	3,95	1	0,05*	1,38	1,00	1,90
	Coping – Changing the situation	-0,48	0,16	8,97	1	0,03*	0,62	0,45	0,85
	Coping – Accommodation	0,03	0,17	0,04	1	0,84	1,04	0,74	1,44
	Coping – Devaluation	-0,11	0,17	0,41	1	0,52	0,90	0,64	1,26

Table 4 continued

Logistic Regression Predicting Likelihood of Reporting Unsafe behaviour at work

Step		B	S.E.	Wald	Df	p	Odds Ratio	95% C.I. for EXP Ratio (β)	
								Lower	Upper
4	Role ambiguity x Avoidance	-0,06	0,17	0,12	1	0,73	0,95	0,68	1,31
	Role ambiguity x CC – Changing	0,17	0,17	1,09	1	0,30	1,19	0,86	1,65
	Role ambiguity x CC – Accommodation	-0,00	0,20	0,00	1	0,10	0,10	0,68	1,48
	Role ambiguity x CC – Devaluation	-0,28	0,20	2,00	1	0,16	0,75	0,51	1,12
	Role conflict x CC – Avoidance	-0,01	0,19	0,00	1	0,98	0,99	0,69	1,43
	Role conflict x CC – Changing	-.221	0,22	1,04	1	0,31	0,80	0,53	1,23
	Role conflict x CC - Accommodation	0,14	0,24	0,31	1	0,58	1,15	0,71	1,85
	Role conflict x CC – Devaluation	0,05	0,22	0,06	1	0,81	1,05	0,68	1,63
	Total role overload x CC - Avoidance	-0,57	0,23	6,20	1	0,01*	0,57	0,36	0,89
	Total role overload x CC - Changing	0,32	0,21	2,35	1	0,13	1,38	0,91	2,09
	Total role overload x CC - Accommodation	0,12	0,24	0,26	1	0,61	1,13	0,70	1,82
	Total role overload x CC - Devaluation	-0,12	0,24	0,25	1	0,62	0,89	0,56	1,42
	Quantitative Job Insecurity x CC - Avoidance	0,13	0,13	1,00	1	0,32	1,14	0,89	1,45
	Quantitative Job Insecurity x CC - Changing	0,10	0,14	0,49	1	0,48	1,10	0,84	1,46
	Quantitative Job Insecurity x CC -Accommodation	0,02	0,16	0,01	1	0,91	1,02	0,75	1,39
	Quantitative Job Insecurity x CC - Devaluation	-0,04	0,15	0,08	1	0,78	0,96	0,72	1,28
	Qualitative Job Insecurity x CC - Avoidance	0,17	0,18	0,91	1	0,33	1,19	0,83	1,70
	Qualitative Job Insecurity x CC - Changing	-0,06	0,18	0,10	1	0,75	0,95	0,67	1,34
	Qualitative Job Insecurity x CC - Accommodation	-0,31	0,22	1,99	1	0,16	0,74	0,48	1,13
	Qualitative Job Insecurity x CC - Devaluation	-0,02	0,22	0,01	1	0,94	0,98	0,64	1,52
	Constant	-1,08	0,69	2,41	1	0,12	0,34		

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

In the classification baseline model it was indicated that 86,1% of the sample could be classified. It is therefore estimated that more respondents indicated that they display compliant behaviour in terms of safety, because of the higher percentage answering negatively on the question regarding safety compliance.

Testing of the model with the first set of independent variables (Role Ambiguity, Role Conflict, Total Role Overload) proved to be highly statistically significant with a reported significance value of $p = 0,000$ ($\chi^2 = 42, 72; df = 3$). The Hosmer-Lemeshow Goodness of Fit Test indicated a non-significant value ($\chi^2 = 14, 56; p = 0,068$), when these values are reached it indicates support for the model. By exploring the Cox and Snell R^2 and the Nagelkerke R^2 (referred to as “pseudo R^2 statistics”; Pallant, 2007, p. 174), it was however found that the model in this instance only explains between 5,4% and 9,7% of the variance, which is deemed to be low. This model actually correctly classified 86,1% of the cases.

In the second step of the regression, the work-related variables of Quantitative and Qualitative Job Insecurity were added, the statistical significance of this model was proved with $p=0,000$. The Cox and Snell R^2 and the Nagelkerke R^2 now indicated that the model explained additional variance (i.e. between 6,3% and 11,4%). A significant value ($\chi^2 = 17,2; p = 0,03$), was indicated by the Hosmer-Lemeshow Test which indicates support for the model. The percentage accuracy in correctly classifying this model was somewhat reduced (85,9%).

In the third step of the regression analysis, the coping variables were included. Again this model proved to be statistically significant with $p = 0,000$. The Cox and Snell R^2 and the Nagelkerke R^2 explained 9,0% to 16,3% of the variance with this set of variables. The Hosmer and Lemeshow Goodness of Fit Test indicated support for the model with $p = 0, 45$ and $x^2 = 7,8$. This model allowed for 87,0% accuracy in classification.

Inspection of Table 4 indicates that the independent variables of Role Ambiguity, Role Conflict, Quantitative Job Insecurity, Coping – Avoidance, Coping – Changing the situation and the interaction terms of Total Role Overload and Coping – Avoidance made a statistically significant contribution to the prediction of Unsafe Behaviour at Work. Examining the odds ratio for the statistically significant variables, the following can be seen: If there is role ambiguity (lack of goal clarity), someone will be 1,45 times more likely to display unsafe behaviour at work; if someone experiences role conflict, they will be 1,65 times more likely to engage in unsafe behaviours; if someone experiences quantitative job insecurity, they will be 1,31 times be more likely not to show safety complaint behaviour. The coping strategies of Change the Situation and

Avoidance also predict unsafe behaviours. Someone who chooses an Avoidance Strategy will 1,38 times more likely, and someone who chooses a coping strategy of Changing the Situation 0,62 times less likely to display unsafe behaviour. The interaction of Total Role Overload with the coping strategy of Avoidance is also statistically significant. This indicates that the coping strategy of Avoidance moderates the effect of high Role Overload on unsafe behaviour at work. This effect is graphically represented in Figure 1 below.

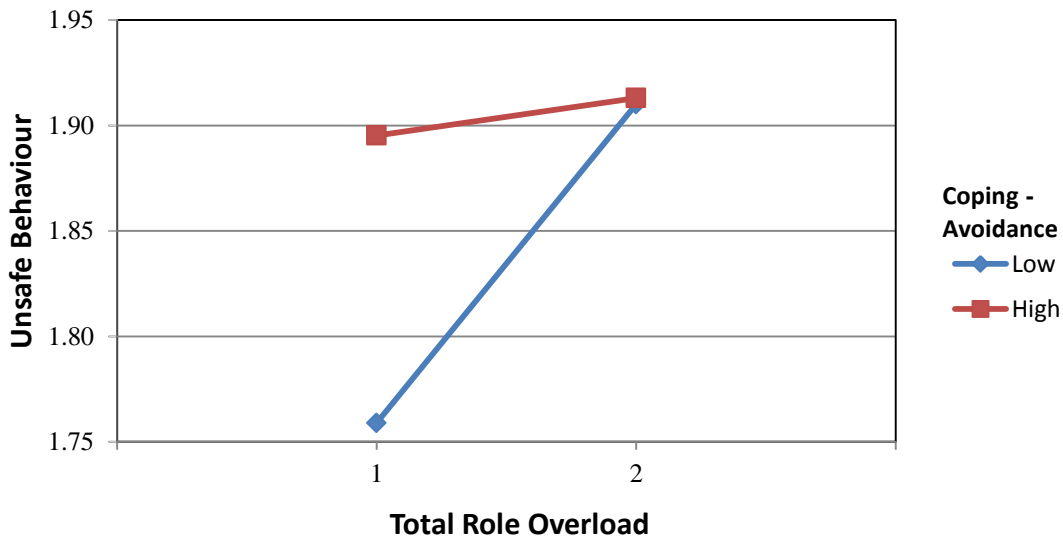


Figure 2. The interaction effect of coping - avoidance with role overload in relation to unsafe behaviour.

Figure 2 above reveals that individuals, who experience low levels of role overload with a high level of avoidance coping strategy, will tend to interact in more unsafe behaviours. However, when one moves to high levels of role overload, there is a marked increase in unsafe behaviour for individuals who make low use of an avoidance coping strategy. There is a small increase in the already high, unsafe behaviours when individuals experience high levels of role overload and make use of a high level of avoidance coping. What is seen though is that when role overload is high, individuals making use of low and high avoidance coping strategies show high unsafe behaviours to a similar extent.

DISCUSSION

The aim of the current study was firstly to investigate the relationships between work stressors (role conflict, role clarity and role overload), job insecurity (qualitative and quantitative) and worker safety behaviour. A second objective was to investigate the moderating effect of coping on the relation between work stressors and job insecurity on the one hand, and unsafe behaviour at work. The results showed that most of the measuring instruments used for the study are reliable, although those for role ambiguity, role conflict, qualitative – role overload, qualitative – job insecurity and the coping strategy of symptom reduction presented with lower reliability scores. Reliability results for these measurements are mostly from international literature and the investigation into their reliability in the South African context presents a distinctive contribution. The use of the measures of role ambiguity, conflict, and qualitative job insecurity could be justified, since these measures have not been used extensively in South Africa, and these reliability results are similar to previous South African results (Masia & Pienaar, 2011; Van Wyk & Pienaar, 2008; Willemse & Pienaar, 2008).

In order to increase the reliability of the role overload dimension, it was decided to combine the sub-dimensions of quantitative and qualitative role overload into a total overload dimension, which yielded acceptable reliability. Masia and Pienaar (2011) also found the combined qualitative and quantitative role overload scale to be more acceptable in terms of reliability compared to the individual dimensions. Pienaar *et al.* (2007) also found that the quantitative role overload scale did not reach adequate reliability, and a similar approach of combining these subscales was employed in their study. For the purpose of this study, the subscale measure of coping – symptom reduction was excluded from any further analysis due to a very low reliability score. Guppy *et al.* (2004), Fourie, (2005) and Näswall *et al.* (2006, 2010), all found this scale to be problematic. It is therefore suggested that the coping – symptom reduction scale has some inherent problems and should be used with great caution, or rather not at all.

Results indicate that employees experiencing role conflict (the degree of clarity relating to job roles within the organisation) are likely to experience a lack of role clarity (the situation where there is lack of clear expectations from the role or lack of feedback on performance), and role

overload (excessive work demands that have certain negative effects on work performance) and being unsafe at work. The research on stressors and strains clearly confirms the consistent relationship between role conflict, overload and ambiguity, and various types of strains (Eatough, Chang, Miloslavic & Johnson, 2011; Lee & Ashforth, 1996, Örtqvist & Wincent, 2006) and being unsafe at work (Dawson, 1991; Hofmann, Jacobs & Landy, 1995; Hofmann & Stetzer, 1998; Janssens, Brett & Smith, 1995; Kotze, 2005; Van Zyl, 2003).

When experiencing role ambiguity and role overload, the stressors of work overload, job (quantitative and qualitative) insecurity and not being safe at work will increase, confirmed by studies done in this regard (Dawson, 1991; Hofmann *et al.*, 1995; Hofmann & Stetzer, 1998; Janssens *et al.*, 1995; Kotze, 2005; Van Zyl, 2003). In this instance there will also be a preference to use the coping strategy of avoidance and less of the coping strategies, changing the situation and/or accommodation. This is in line with what Dillinger, Weigmann and Taneja, (2003), found that when utilising the avoidance strategy can increase unsafe behaviour. In turn the more ineffective the coping strategy, the more the possibility of negative outcomes on employee's safety attitudes, outcomes and behaviours (Grunberg *et al.*, 1996; Probst, 2002; Probst & Brubaker, 2001; Richter, 2011). Semmer (1996) reasoned that individuals who employ an avoidant coping strategy will be more prone to stress experiences if they have low levels of resilience, an inadequate self-esteem or an external locus of control. The alternative interpretation is that when individuals inaccurately appraise ("value") coping challenges and prefer a changing the situation, accommodative or avoidant coping strategy, they are more likely to experience role ambiguity too.

The qualitative and quantitative dimensions of job insecurity were strongly related (Charles & James, 2003; Fourie, 2005; Hellgren *et al.*, 1999; Richter, 2011) and also showed positive relations with all the role stress dimensions (role conflict, ambiguity and overload). These results confirm previous findings in indicating job insecurity to be a dimension of general work stress (Ashford *et al.*, 1989; Greenhalgh & Rosenblatt, 1984; Lim, 1996; Mattesson & Ivancevich, 1987; Sverke *et al.*, 2002). At the same time employees specifically worrying about the future existence of the current (quantitative job insecurity) and experiencing high role stressors, also prefer to divert attention away from discrepancies as a possible coping mechanism and only to

result in an increase of unsafe behaviour in the workplace (Ashford *et al.*, 1989; Grunberg *et al.*, 1996; Kotze, 2005; Masia & Pienaar 2011; Paul & Mati, 2005; Probst, 2002; Probst & Brubaker, 2001; Richter, 2011). In the context of job insecurity, one way of coping could be that the employee takes measures in order to increase the personal employability; therefore as per our results an individual will be reluctant to try and change his or her current situation. The inter-relationship correlations of the Coping scales indicated the expected directions, i.e. when applying an avoidance coping strategy, the coping strategy of devaluation will also be implemented at the same time. This might lead to questioning the effectiveness of the avoidance coping mechanisms for an option to deal with stress.

Interestingly, when inspecting the regression analysis, it showed that two dimensions of stress (role ambiguity and role conflict), quantitative job insecurity and the coping preference for avoidance played a role in predicting the safety compliance behaviour. The implication of the above is that should an individual experience role ambiguity and role conflict, quantitative job insecurity and prefer an avoidant coping strategy, he/she will be more likely to display unsafe behaviour. This is in line with research that indicated the absence of job resources components, for example role ambiguity and increased job insecurity, has an influence on how employees regard management's commitment to safety, as well as how they consider safety and safety compliance (Larsson, Pousette & Torner, 2008; Neal, Griffin & Hart, 2000; Probst, 2005, 2006; Probst & Brubaker, 2001; Størseth, 2007). In previous research the contribution of role conflict on safety compliance behaviour has not yet been established (Parker *et al.*, 2001), which is confirmed by the results of this study.

Lastly, the second hypothesis enquiring if coping will moderate the influence of role stress and job insecurity on worker safety behaviour; it was found that there was a moderating effect in terms of high role overload and the coping mechanism of avoidance. The results indicated that when an individual experiences low overload, there is a marked increase in unsafe behaviours for the individuals who makes use of high avoidance coping strategy. What is seen though is when role overload is high; individuals making use of low and high avoidance coping strategies show high unsafe behaviours to a similar extent. What is illustrated is that when individuals make use of an avoidance coping strategy, their unsafe behaviour at work is more likely, regardless of their

levels of role overload. The findings of Dillinger *et al.* (2003), Jex, Bliese, Buzzell and Primeau, (2001) and Zohar (2002) confirm that the continuous use of the avoidance coping strategy highlights the negative experiences of work overload and can even increase the stressor as such.

LIMITATIONS AND RECOMMENDATIONS

Limiting contextual factors that need to be considered when interpreting these results are the pressures on the gold mining industry in terms of reducing costs, increasing productivity and remedial actions to curb the deteriorating safety statistics. All these factors create a climate of job insecurity and more pressures on individuals to perform better. Low representation of the African operations may have skewed the results in terms of the true reflection of other safety cultures in the organisation.

Measuring the effect of coping strategies in particular, the cross-sectional nature of the research had its own restrictions. Although the coping strategy of avoidance and changing the situation was measured to be a significant contributor to predicting safety behaviour when experiencing work stressors, the relationships of the other coping measures (i.e. accommodation, and devaluation) could not be defined clearly. The explanation for this finding could be that the common method variance did not allow us to make conclusive statements about the influence of coping strategies in this study, since coping is normally a process that takes time to institute (Edwards, 1992; Lazarus, 1991; Lazarus & Folkman, 1984). For this reason, the usage of the cross-sectional design may have not been as effective as when a longitudinal design was employed for studying the coping strategies used by individuals.

Another limitation was the application of the safety compliance measure, which consisted participants' responses to a single item. The additional use of real and objective safety data, such as that available through monitoring of real incidents, could increase the value of these results. The inclusion of more items in the scale or even using a more comprehensive safety compliance scale could have given a broader sense of the influence of the safety behaviour outcome. The findings of the study specifically in regard to the safety measurement need further refinement in

order to accommodate the specific cultures combined in the organisation, and more items in the measurement can also be included.

Some of the measures applied showed less than anticipated reliability coefficients (as indicated by Cronbach alpha coefficient). Regarding the measure of role overload, the two combining of the subscales of quantitative and qualitative role overload into a total role overload scale was required in order to enhance the reliability of the scale. The application of the quantitative role overload scale consisting of only three items has proven to be unreliable in this study. Recommendations in this regard could be to include more items in the measurement to increase the consistency or work with larger samples to explore the inter-item relationships of the scale. The combination of the quantitative and qualitative role overload scales is defensible, as the overlap of constructs assists in giving a reliable overview of the variable in general. The subscale symptom reduction of the cybernetic coping scale was excluded because of the very low reliability score it yielded. For future research regarding this subscale, more items can perhaps be included in the questionnaire.

Although certain coping strategies can alleviate the impact of role stressors and job insecurity, the organisation needs to pay more attention to the clarifying of roles and responsibilities, as well as securing the insecure environment by communicating through managers and ensuring career plans for employees. When companies understand the coping scenarios that are displayed by individuals and they offer support by means of wellness programs, they can have positive effects on safety compliance behaviours.

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CHAPTER 4
ARTICLE 3

JOB STRESSORS, EMPLOYABILITY, JOB SATISFACTION AND TURNOVER INTENTION – A LONGITUDINAL ANALYSIS

Melissa Jacobs

ABSTRACT

Orientation: Working life is not only about organisational and structural changes, work and work conditions, has changed. By implication the nature of work stress for individuals has increased.

Research purpose: For the purpose of this research, job stressors (task completion ambiguity, task quality ambiguity, competency demands and employability perceptions (internal and external)) were conceptually reviewed. Empirically, the investigation also focused on how job satisfaction may play a mediating role between these and employee turnover intentions in a multi-national African mining organisation.

Motivation for the study: Employees working in organisations are typically faced with an increase in work load, less resources and more uncertainties about the role and accountabilities that need to be performed therefore more pressure is put on the individual to perform better and rely on past knowledge and experience.

Research design, approach and method: The measuring battery included instruments on task completion ambiguity, task quality ambiguity, competency demands, employability perceptions, job satisfaction and turnover intention. A longitudinal study was conducted and data was gathered by means of an electronic survey. All employees, representing both genders, and all races, job levels and business units within a gold mining company ($N = 6000$) were approached to obtain the data, with 771 employees participating at Time 1, and 345 participating at Time 2. The Pearson's product-moment correlation coefficients were used to determine the relationship between the variables. A regression analysis was employed to clarify the contribution of task completion ambiguity and task quality ambiguity, competency demands and employability perceptions to turnover intention over time. To test for the hypothesized mediating effect of job

satisfaction on the intention to leave the organisation, procedures as outlined by Baron and Kenny (1986) were implemented.

Main findings: Results for these employees indicate that in predicting employees' turnover intentions, experience of task completion ambiguity, external employability and job satisfaction make a direct contribution in predicting their intention to leave the organisation. No mediating role of job satisfaction between job stressors, competency demands and employability perceptions on the one hand, and turnover intentions on the other hand, was found.

Practical/managerial implications: Although over time the lack of job satisfaction can lead to increase turnover intentions it would be in an organisation's interest to find relevant mediators that may be amenable to training to ensure skilled employees are retained. Further investigation into the role of the job stressors in the work environment, specifically in South Africa, is proposed.

Contribution/value-add: This study represents the first attempt in South African literature to investigate if job stressors in the workplace correlated with other outcomes, by means of a longitudinal approach. The measurement over time confirmed the prolonged effect of the job stressors as leading to a negative outcome for the individual and the organisation.

Key words: Job stressors, task completion ambiguity, task quality ambiguity, job challenge, competency demands, internal/external employability perceptions, job satisfaction, turnover intention

The working life of individuals has gone through numerous changes in recent decades (e.g. Burke & Cooper, 2000; ILO, 2004; Tetrick & Quick, 2003). These work changes relate to the increased occurrence of reorganisations and changes of ownership, often resulting in downsizing (Burke & Nelson, 1998; Pfeffer, 1998). Consequences for the organisation and individuals are a diminished degree of predictability and an increased experience of job insecurity (Green, 2003; Sverke, Hellgren & Näswall, 2002). The working life is not only about organisational and structural changes, it is also about the work and work conditions, and how it has changed (Burchell, Lapido & Wilkingson, 2002). According to the Hay Group (2004), the fast changing competitive work environment has forced private and public companies to become more flexible and effective, therefore increasing the demand for capable, skilled employees. Education and training have become more important throughout the career (Eurostat, 2005), increasing the educational levels of the workforces in many countries and also providing for the potential to continuously develop own competencies. Subsequently, the employability of individuals improves by providing more alternatives in the labour market and also by offering the opportunity for individuals to negotiate their own career (Fugate, Kinicki & Ashford, 2004).

The era after 1994 has been marked with continuous changes in political, economic, social and technological spheres in South Africa (Bainbridge, 1996; Brill & Worth, 1997). Grogan (2000) proposed that most of the significant changes took place in the South African labour relations arena, where legal guidelines forced organisations to comply. The Employment Equity Act (South Africa, 1998) and the Broad-Based Socio-Economic Empowerment Charter for the South African Mining Industry (Mining Charter, 2010) specifically changed the compilation of the workforce for the mining industry. Compliance to the Mining Charter (2010) requires mining companies to enforce affirmative action in middle to senior management categories. In order for mining companies to retain their mining licenses, it is a requirement to publically reveal their plans for employment equity at all levels in the organisation. This type of reporting may certainly expose employees working within the organisation and lead to the increased experiences of job stressors like job dissatisfaction and role overload (Moodie, 1994). Concurrently, productivity improvements mean cutting of costs and therefore restructuring through workforce reductions. The employees that are still working in the organisation are typically faced with an increase in work load, less resources and more uncertainties about the role and accountabilities that need to

be performed (Burke & Nelson, 1998, Hartley, Jacobson, Klandermans & Van Vuuren, (1991). More pressure is put on the individual to perform better and rely on past knowledge and experience, possibly exposing a lack of certain competencies (Gallardo, 2009).

General research and literature on the subject of work has argued that in order for individuals to experience their work situation as satisfactory, they must have the possibility of exercising control, both in and over, the work situation (Ganster & Fusilier, 1989; Theorell, 2003; Warr, 1987). Occupational stress research in South Africa confirms that the experience of different types of job demands and job resources are not the same for diverse organisations (Rothmann, 2005). The individual's perception of job demands and resources is therefore dependent on the organisation that the individual works in. Great disparities in levels of education and skills levels in South Africa lead to more pressure on individual workers to constantly develop themselves in order to be compliant to job requirements. It has been established internationally that emergent stress factors focused more on the uncertainty employees felt about the work and their own competencies (Hellgren, Sverke & Näswall, 2008).

Hellgren *et al.* (2008) established that work today tends to be less clearly defined in respect to knowing which work tasks are to be carried out by the individual, and when these work tasks should be completed. It was also reported that judging the amount and level of work required for a task was becoming increasingly difficult, which in turn may likely lead to the individual experiencing an uncertain and stressful work situation and, in the long run, reacting with diminished job satisfaction, commitment, and motivation in regard to both the work and the organisation. Bedeian and Armenakis (1981) proposed a job-related stress model which hypothesises that role conflict and role ambiguity lead to increased job tension, which results in lower job satisfaction. Lower job satisfaction, in turn, increases the intention of the employee to leave the organisation. Employability has become more important for the individual and the organisation as job insecurity increased (De Witte, 2005); the labour force has become more flexible as well (Castells, 2000; Sundin & Wikman, 2004).

Organisations competing in a fluctuating business arena and employees that want to achieve career success regard employability as a critical requirement (Fugate *et al.*, 2004; Van der Heijde

& Van der Heijden, 2006). Continual changes in organisational structures, technologies and job assignments have forced employees to upgrade current skills and move to new positions (Chan, 2000; Pulakos, Arad, Donovan & Plamondon, 2000) and be concerned about their ability to secure a new job (Fugate *et al.*, 2004; Kluytmans & Otto, 1999; Van Der Heijde & Van Der Heijden, 2006). Workers that are employability-orientated are more likely to recognise vacancies inside and outside of the organisation (McQuaid & Lindsay, 2005). The result of the focus on employability is that employees and organisations have shown a lesser degree of loyalty towards each other. Stimulating - especially external - employability can increase employees' intentions to leave the organisation more easily and as a result threaten the flexibility of the organisation (Tissen, LekanneDeprez, Burgers & Montfort, 2010; Van der Heijde & Van der Heijden, 2006).

Job Stressors

In times of reorganisation and restructuring there is not only a diminished degree of predictability and an increased experience of job insecurity (Ferrie, Shipley, Marmot, Stanfeld & Smith, 2001; Sverke, Hellgren & Näswall, 2002), but work itself and conditions have changed (Howard, 1995; Burchell, Ladipo & Wilkinson, 2002). Control over in and over the work situation is crucial for individuals to experience their work experiences as satisfactorily (Ganster & Fusilier, 1989; Theorell, 2003; Warr, 1987). The question remains as to how employed people can stay competitive in the labour market that is characterised by continuous job insecurity (e.g. Forrier & Sels, 2003; Fugate *et al.*, 2004; Garsten, 2004).

For the purpose of this study, new potential challenges and demands as job stressors (i.e. task completion ambiguity, task quality ambiguity, competency demands, employability perceptions) whose importance for workers' motivation, performance, and well-being extends beyond the more traditional role stressors (e.g. role overload, conflict, and ambiguity), (Landy & Conte, 2007) and job insecurity (Ashford, Lee & Bobko 1989; Batt & Valcour, 2003; Brotheridge & Ito, 2007; Cheng & Chan, 2008; De Cuyper & De Witte, 2007; Sverke *et al.*, 2002; Sverke, Hellgren, Näswall, Chirumbolo, De Witte & Goslinga, 2004) will be investigated.

Additionally, this study investigates the mediating role that job satisfaction can play on the subsequent intention for an individual to leave the organisation, following exposure to job stressors.

Task Completion Ambiguity and Task Quality Ambiguity

Work design in the organisation allows individuals to work in specific roles and therefore form part of the organisational hierarchy (Aziz, 2004). The role enables the individual to understand his or her accountabilities and responsibilities. Pareek (1993) describes the role of the individual as a set of tasks that must be achieved through performance and reaching of deadlines, as expected by the organisation. The interpretation of the role and the subsequent completion of the tasks can put a strain on individuals if they find that their competencies are not fitting, and a greater demand is put on their knowledge and skills (Hellgren *et al.*, 2008).

According to Green (2006), in order to execute work, the individual must understand, plan and prepare some portion beforehand. Task performance decisions imply that employees must have enough knowledge and ability in order to resolve problems and make decisions. The degree of autonomy and control that an individual has over his/her job is influenced by how the work is organised, standardised and clarified by rules and procedures (Dahl, Nesheim & Olsen, 2009). However, if it is not clear to the employee what is expected of him or her, increased autonomy or gained control may not be beneficial at all (Gallie, White, Cheng & Tomlinson, 1998). A combination of a too high degree of autonomy at work with lack of a well-defined completion point that could clearly be recognised and related to, may lead to frustration and tension which in the long run may result in the development of stress symptoms (Hellgren *et al.*, 2008). Therefore in business and industry, Bosselut, Heuzé and Sarrazin (2010) considered task ambiguity to differ from role ambiguity in that task ambiguity specifically relates to a lack of information on what must be completed in order to achieve the requirements of the work, while role ambiguity refers to a multidimensional construct where there is a lack of clear, consistent role appraisal, role consequences, and the prevalence of task uncertainty.

Task completion ambiguity is therefore defined as the understanding an individual has of what the task entails and also the difficulty experienced to judge when an assignment is completed

(Hellgren *et al.*, 2008; Näswall *et al.*, 2006). Hellgren *et al.* (2008) found that employees felt that when it came to independent work, task completion ambiguity is especially problematic where the individual does not always have the opportunity to check with a colleague on whether the work should be considered finished. It happens particularly when the individual feels that she/he always could have done a little more, but instead chose to consider the work finished; it could lead to experiences of stress. Further about the ability to judge the completion of a task: the same judgment of colleagues was not always shared in respect to when an assignment or service was finished, which can lead to differences in opinion.

In combination with task completion ambiguity, the next related role stressor that emerges is where an individual experiences the demand for the personal appraisal of the quality of their work. The definition of *task quality ambiguity* is therefore described as the difficulty an individual experiences to determine whether his/her work results were of high enough quality (Hellgren *et al.*, 2008; Näswall *et al.*, 2006). Specifically, when an individual worked independently and was personally responsible for the quality of work, the lack of a definite measure for comparison or someone to consult with about how well the work/service is being carried out, often results in a sense of uncertainty which can lead to the experiencing of stress.

Competency Demands

Competent employees remain high on the list of organisations operating in the global market place requiring a competitive advantage. The competence of a person refers to the knowledge, skills, aptitudes, abilities, appropriate traits and behaviours, which will allow him or her to successfully operate within a position (Vathanophas & Thai-ngam, 2007). It would therefore be appropriate for companies to invest in the up skilling of their workforce in order to increase competence and successful performance towards the benefit of the individual and the organisation in general (Rao, 2000; Rodrigues & Chincholkar, 2005).

Hellgren *et al.* (2008) further noted that work was currently considered to be less clearly defined and without boundaries with regards to the work's structure and content. Individuals felt that to a greater extent it was up to them to see that their competencies were in line with those needed to carry out their work tasks. There was also a constant demand for renewing their competencies;

knowledge and abilities needed to be developed and updated in order to be competent to do the work and ensure gradual career advancement in the organisation (Fugate *et al.*, 2004; Garsten, 2004). A frustration was also expressed over uncertainty over which competencies would be in demand for specific work tasks (Hellgren *et al.*, 2008). A further demand was always to be prepared for the eventuality that one's knowledge would be lacking and would need to be complemented and increased in order to complete the assigned work.

Competency demands can therefore be defined as the individual characteristics or abilities required by a certain job situation and job responsibility to demonstrate appropriate specific actions (Vathanophas & Thai-ngam, 2007). Job demands *per se* are not harmful to an individual, but can lead to stress experiences when they cannot be met or employees feel that they are not equipped to comply with the demands (Meijman & Mulder, 1998; Rothmann, Mostert & Strydom, 2007). It also becomes more difficult to develop themselves further in their job and organisation. This leads to discontent with the job and increases the individual's intention to leave the organisation (Masri, 2009).

Employability Perceptions

Employability is considered to be the new protection mechanism in the current labour market and likely to enhance employees' well-being and further favourable attitudes and constructive behaviours, gradually replacing job security (Forrier & Sels, 2003; Worth, 2002). Employability, or the sensing of being in control of one's profession, may positively affect employees' experience of work (Fugate *et al.*, 2003; Marler, Barringer & Milkovich, 2002). Employability-enhancing activities, such as training, can have favourable effects on workers' job satisfaction and motivation (Virtanen *et al.*, 2003).

Employability refers to the “continuous fulfilling, acquiring, or creating of work through the optimal use of one's competences” (Van der Heijde & Van der Heijden, 2006, p. 453). Berntson (2008, p. 15), also defined employability as “an individual's perception of his or her possibilities of getting new, equal, or better employment.” A closer look at the definition of employability reveals the following: Firstly that the perception of employability is on an individual level; secondly it suggests that the individual is still employed in the organisation;

thirdly that it is not only a matter of advancement, but to rather secure or attain similar employment and lastly that the perception of the individual is rather subjective than objective in this regard. Employability can be divided into two dimensions, namely internal and external, where internal employability refers to the ability of the employee to obtain employment in the current organisation. External employability describes the perception of the employee that he or she can secure employment outside of the current organisation (Groot & van den Brink, 2000; Kluyttmans & Otto, 1999).

Research (Griffeth, Hom & Gaertner, 2000; Lee, Carswell & Allen, 2000; Nauta, Van Vianen, Van der Heijden, Van Dam & Willemsen, 2009; Van Dam, 2005) has indicated that career fulfillment was negatively related to employability alignment and turnover intention. In the new world of work when demands on companies increase, a workforce that is multi-skilled can adapt to changes, increase production and services more quickly. This will normally entail that employees will be requested to further develop their competence in order to create flexibility within the organisation (Hellgren *et al.*, 2008).

Job Satisfaction

Ivancevich and Matteson (1997, p. 91) defined job satisfaction as “an attitude that individuals have about their jobs. It results from their perception of their jobs and the degree to which there is a good fit between the individual and the organisation.” Therefore, job satisfaction will increase when employees feel that their abilities and skills can be utilised in the workplace and that they are accordingly rewarded for outputs (Bull, 2005; Dawis, 1992). When completing tasks, the appraisal and selection of significant features of the job by individuals will take place in order to increase job satisfaction (Sempane, Rieger & Roodt, 2002). In a model developed by Hellgren, Sjöberg and Sverke (1997), they take into account the casual chain of three components, cognition, conation and affect, when trying to predict specific behaviour. They further suggest that the effect of job perceptions (cognition) on turnover intention (conation) is mediated by job satisfaction (affect). The model postulates that perceptions of the environment are considered to take on personal meaning through a cognitive process of appraisal in which the individuals’ personal needs and values guide the interpretation of the organisational characteristics that they experience (James, Hater, Gent & Bruni, 1978). Job perceptions

constitute an attribute of the individual, which in turn implies that these perceptions are more important than the organisational characteristics' influence when determining affective and behavioural responses to the job situation (Hwang & Kuo, 2006; Zhao, Wayne, Glibkowski & Bravo, 2007).

Studies identified variables related to turnover intention which includes attitudinal factors like work-related stress, level of commitment and job satisfaction, which are apparent in their organisation (Bodla & Naeem, 2004; Sattar, Khan, Nawaz & Qureshi, 2010; Tan, Vicky & Tiong, 2007; Zimmerman & Darnold, 2009). In general, positive and favourable job perceptions have been found to increase job satisfaction (James & Jones, 1980). This is confirmed by a recent model of turnover intentions developed by Griffeth and Hom (2001). They postulated that job satisfaction and organisational commitment are two strong predictors of turnover intentions. Job satisfaction can be influenced by various work-related elements, like remuneration and benefits, training and development, promotional opportunities and career succession (Sloane & Williams, 2000); therefore indicating the influence it might have on job stressors, competency demands and employability perceptions.

Turnover Intentions

Although different forms of employee behaviour are critical to organisational functioning, job turnover intentions and job turnover have received perhaps the most extensive research attention due to organisational costs and negative connotations associated with high turnover rates (Cascio, 1991; Robbins & Judge, 2007). Turnover intention gives an indication of the strength of the respondent's intentions to leave the present position (Näswall *et al.*, 2006). One important factor in turnover research is the utility of the concept of turnover intention. Intention is generally considered the immediate precursor of behaviour (Fishbein & Ajzen, 1975), thus indicating that intention to quit is the best predictor of actual turnover (Lambert, Hogan & Barton, 2001; Price, 2001). The importance to identify factors that relate and give impetus to turnover intentions should therefore be considered.

Many studies have indicated from a moderate to a strong negative correlation between job satisfaction and turnover intentions (Brough & Frame, 2004; Korunka, Hoonakker & Carayon,

2005; Sarminah, 2006). Ample research proves the positive effects that job satisfaction will have on the intentions of an individual not to apply for another position within the company, or even leave the company. There is, however, limited research in the field of the job stressors (task completion ambiguity and task quality ambiguity), competency demands and employability perceptions, and how these could influence job satisfaction and the intention to leave. This study will contribute towards an understanding of these variables by investigating them amongst individuals in a South African-based gold mining company. The findings could suggest some interventions and remedies for the company in order to retain people and skills.

The job demands-resources model (Karasek, 1979; Karasek & Theorell, 1990) is applied in this study to explain the relationship between job demands (i.e. time pressures, workload, and social interactions in the work place), as well as resources available (i.e. assistance with work completion, reducing of work load and positive social interactions). The conclusion is made that should job demands increase, they will have a negative impact on the experiences at work and depletes the necessary resources available to an individual to increase job satisfaction and the reaching of job requirements (Bakker, Hakanen, Demerouti & Xanthopoulou, 2007; Demerouti *et al.*, 2001). The resources available to an individual can have a buffering effect to alleviate the stress of high demands (Day, Scott & Kelloway, 2010).

Job stress and job satisfaction, as predicting factors of employee turnover, have been a topic widely studied (Brotheridge & Grandey, 2002; Griffeth & Hom, 2001). Research has shown that job satisfaction reduces turnover (Griffeth *et al.*, 2000; Trevor, 2001) and increases retention (Kim *et al.*, 1996). Job satisfaction was chosen to be considered for this study to be an important potential mediating variable between job stress and turnover.

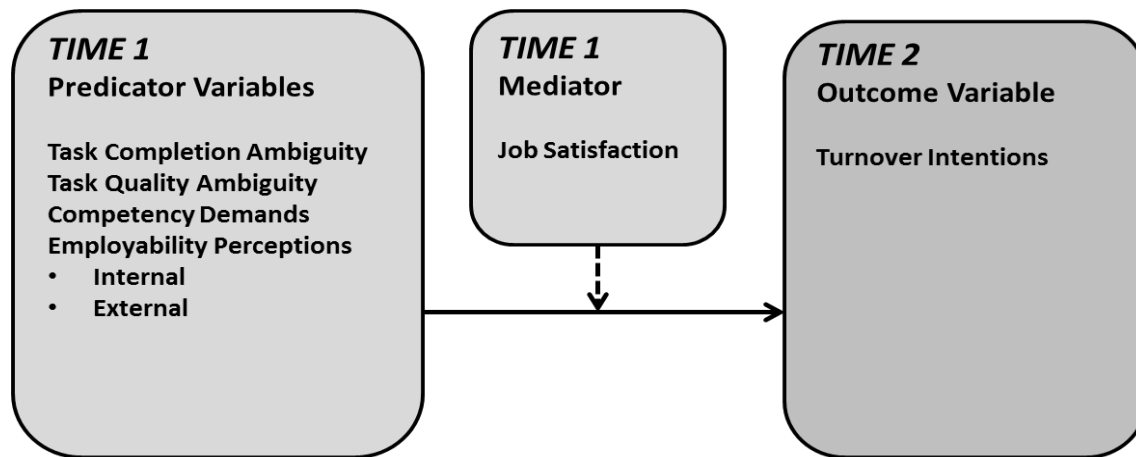


Figure 1. A research model illustrating the relationship between job stressors (task completion ambiguity and task quality ambiguity), competency demands, employability perceptions, job satisfaction and the intention to leave over time.

Aims and Hypothesis

For the purpose of this study the mediating effect of job satisfaction when experiencing job stressors, i.e. task completion ambiguity, task quality ambiguity, competency demands and employability perceptions (internal and external) on subsequent turnover intention will be investigated.

H1a: There will be a negative relationship between Task Completion Ambiguity, Task Quality Ambiguity and Job Satisfaction.

H1b: There will be a positive relationship between Competency Demands, Employability Perceptions (internal and external) and Job Satisfaction.

H2: There will be a negative relationship between Job Satisfaction and Turnover Intention.

H3a: There will be a positive relationship between Task Completion Ambiguity, Task Quality Ambiguity and Turnover Intention.

H3b: There will be a negative relationship between Competency Demands, Employability Perceptions (internal and external) and Turnover Intention.

H4: Job Satisfaction will mediate the relationship between Task Completion Ambiguity, Task Quality Ambiguity, Competency Demands, Employability Perceptions (internal and external) on the one hand, and Turnover Intentions on the other.

METHOD

Research design

A longitudinal, electronic survey design with two specific points of data collection was used to gather data and test the hypotheses. Advantages of utilising a longitudinal study are firstly that it enables the researcher to model time as an independent variable (Wright, 2007). Secondly, while it allows for a stable appraisal of the variables over time it can therefore discriminate between constructs more effectively (Conley, 1984). Thirdly, it gives the opportunity to assess within person variance, which accommodates the change in individuals over time. Finally, it measures the order of change responses. Tekleab, Takeuchi and Taylor, (2005) indicated that turnover intention in employees is something that develops over time, and therefore this design seems ideally suitable to answer questions relating to the development of turnover intention.

Participants

The study population could be defined as a random sample of employees in different business units in one selected multi-national mining company based in South Africa ($N = 6\ 000$). The participants included employees who have access to an e-mail facility in five different countries in Africa. The organisation has mining operations in South Africa, Mali, Namibia, Tanzania and Ghana and thus covers a large geographic area in South, East and West Africa.

Time 1 sampling. A total of 771 employees participated and completed the questionnaire in the first study. This survey took place in 2006 and the amount of participation represents a response rate of 15,30%.

Time 2 sampling. During the second measurement, a total of 345 completed questionnaires were returned, representing a response rate of 5,75% of the total population. This survey took place in 2007.

A total of 233 employees participated at both T1 and T2; therefore the longitudinal analysis was conducted for this subset of employees. Descriptive information of the sample is given in Table 1.

Table 1
Characteristics of the Participants (Longitudinal sample; n = 233)

<i>Item</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage</i>
Gender	Male	152	65,2
	Female	81	34,8
Children younger than 12 living with you	No	140	60,1
	Yes	93	39,9
Household	Single	99	8,2
	Married or living with a partner	175	75,1
	Living with parents	4	1,7
	Divorced or separated	19	8,2
	Remarried	16	6,9
Educational qualifications	Grade 10 (Standard 8)	10	4,3
	Grade 11 (Standard 9)	6	2,6
	Grade 12 (Standard 10)	70	30,0
	Technical College Diploma	32	13,7
	Technical Diploma	35	15,0
	University Degree (BA, B Comm., BSc.)	40	17,2
	Postgraduate Degree (Honours, Masters or Doctorate)	40	17,2
Home language	Afrikaans	110	47,2
	English	76	32,6
	Sepedi	2	0,9
	Sesotho	8	3,4
	Setwana	6	2,6
	isiSwati	1	0,4
	Tshivenda	1	0,4
	isiNdebele	1	0,4
	isiXhosa	5	2,1
	isiZulu	2	0,9
	isiTshonga	1	0,4
	Other	20	8,6
	Employment status	Full time	230
Part-time		3	1,3
Union membership	Yes	133	57,1
	No	100	42,9

The participants had an average age of 43 years, with average work experience of 17 years. According to Table 1, the majority of participants (65,2%) represented in the study population were male, which reflects the demographics of the organisation very well, given the fact that the mining industry is still very much dominated by men. Of the respondents 39,9% indicated that

they have children younger than 12 years living with them in the house. Three-quarters (75%) of participants indicated that they are either married or living with a partner. The greater majority of the participants (63%) indicated that they have a tertiary-level qualification, also confirming that the population of respondents would represent more white-collar employees (supervisory and administrative staff) in the company. Afrikaans (47,2%) and English (32,6%) were the main two home languages noted by the respondents. Most of the respondents (98,7%) were employed full time, and 57,1% belonged to a union.

Statistical Analysis

The researcher used the SPSS-programme (SPSS, 2011) for the statistical analysis. In describing the statistics the means, standard deviations, skewness and kurtosis were displayed. The measuring instruments' internal consistencies, homogeneity and uni-dimensionality were determined by Cronbach alpha coefficients (Clark & Watson, 1995). The Pearson's product-moment correlation coefficients were used to determine the relationship between the variables. Statistical significance in this regard was set at a 95% confidence interval level ($p \leq 0,05$). The effect sizes (Steyn, 1999) of the correlation coefficients for practical significance were set at $r > 0,30$ (medium effect) and $r > 0,50$ (large effect) (Cohen, 1998).

A regression analysis was employed to clarify the contribution of task completion ambiguity and task quality ambiguity, competency demands and employability perceptions to turnover intention over time. This method allowed the researcher to determine how well the set of predictor variables predict the dependant variable (Pallant, 2007). To test for the hypothesized mediating effect of job satisfaction on the intention to leave the organisation, procedures as outlined by Baron and Kenny (1986) were implemented. To test the appropriate practical effect sizes of the change in the R^2 , Cohen's guidelines were utilised (Cohen, Cohen, West & Aiken, 2003). The f^2 effect measure for multiple regressions is defined as:

$$f^2 = \frac{R^2}{1 - R^2}$$

The f^2_A effect sizes of 0,02, 0,15 and 0,35 are termed small, medium and large respectively (Cohen *et al.*, 2003).

Measuring Instruments

The *Experiences in the Modern World of Work* (Näswall, Baraldi, Richter, Hellgren & Sverke, 2006) questionnaire was developed to capture several different aspects of the working situation for the white-collar worker. This questionnaire firstly gathers biographical information regarding age, qualification, gender, and race. The questionnaire presents the basic measuring instrument for a joint research project between the North-West University in South Africa and Stockholm University in Sweden. Swedish reliability information is available in a technical report of the questionnaire (Näswall *et al.*, 2006). All participants completed the questionnaire in English.

The focus of this study is on task completion ambiguity, task quality ambiguity, competency demands, employability perceptions, job satisfaction and turnover intentions.

The specific scale measuring *Task completion ambiguity* consists of four items and was developed by Näswall *et al.* (2006). This scale measures to what extent employees could, or had to determine when their tasks were completed. A high score on this scale represents the individual's feeling that he/she has a low sense of what his/her tasks entail, and when they can be considered to be complete. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), (e.g. 'I can determine when my work assignments are completed.'). The scale is reversed to reflect ambiguity. The reliability coefficients of this scale were above 0,80 in previous research (Näswall *et al.*, 2006).

The *Task quality ambiguity* scale consists of four items and was developed by Näswall *et al.* (2006). This scale measures to what extent the individual feels she/he can determine when his/her job is well, or adequately, done. A low score indicates that the individuals can determine the quality of their work themselves, and the response alternatives range from 1 (strongly agree) to 5 (strongly disagree), (e.g. 'I know when I have done good work'). This scale is reversed to reflect ambiguity. This scale has previously been shown to be highly reliable ($\alpha = 0,80$; Näswall *et al.*, 2006).

Competency demands. The scale for "job challenge" was developed by Hellgren *et al.* (1997) and was used to gain information about the extent to which the job is demanding of employees'

competencies. It consists of four items, with a high score indicating that the job does not contribute to new knowledge and learning. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), (e.g. “*I am learning new things all the time in my job*”). The scale showed acceptable reliability ratings with the alpha value at 0,81 (Hellgren *et al.*, 1997).

The next scale that was used is *Employability* (internal and external). The employability – internal scale was developed by Van Der Vliet and Hellgren (2002) and consists of five items that measure the respondent’s sense of being attractive to the present employer and the possibility for finding work within the same organisation. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), and a low score on this scale represents a strong sense of internal employability. One example item of the scale is “*My competence allows me to work in several positions within the organisation.*” The employability – external scale consists of five items, also developed by Van Der Vliet and Hellgren (2002). This scale measures the respondent’s sense of being attractive to other employers and the ability to find work outside the present organisation. A low score indicates a strong sense of external employability. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), (e.g. “*I am aware of other employments where I could make use of what I have learned in my current job*”). The internal consistency reliability has proven satisfactory for both internal ($\alpha > 0,83$) and external employability ($\alpha = 0,85$) (Näswall *et al.*, 2006).

Job satisfaction was measured with a three dimensional scale developed by Hellgren *et al.* (1997), based on Brayfield and Rothe (1951). The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), (e.g. “*I enjoy being at my job*”) and a high score represents dissatisfaction with the job. The scale measuring job satisfaction exhibited good measurement properties, with a high reliability coefficient of 0,88 (Näswall *et al.*, 2006).

The scale for *Turnover intention*, consisting of three items, was developed by Sjöberg and Sverke (2000). The scale consists of items reflecting the strength of the respondent’s intentions to leave the present position (e.g. “*I feel that I could leave this job*”), with a five-point response scale (1 strongly agree; 5 strongly disagree). This scale exhibited consistent high factor loadings

and satisfactory internal consistencies, with the alpha coefficients ranging between 0,77 and 0,85 in several studies (Näswall *et al.*, 2006).

RESULTS

Descriptive and reliability statistics of the various scales for both measurements are reported in Table 2.

Table 2

Descriptive Statistics and Cronbach Alpha Coefficients of the Measuring Instruments

	Mean		SD		Skewness		Kurtosis		α	
	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1. Task completion ambiguity	2,23	2,12	0,90	0,86	0,64	0,87	0,21	0,70	0,81	0,80
2. Task quality ambiguity	1,70	1,71	0,81	0,74	1,90*	0,74	4,40*	3,00*	0,87	0,85
3. Employability (External)	2,60	2,41	0,84	0,85	0,35	0,53	-0,11	0,39	0,76	0,77
4. Employability (Internal)	2,42	2,30	0,86	0,82	0,51	0,62	-0,02	0,22	0,84	0,82
5. Job challenge	2,24	2,22	1,01	0,94	0,81	0,90	0,50	0,55	0,76	0,74
6. Job satisfaction	2,27	2,26	0,97	1,02	0,85	1,02*	0,30	0,26	0,88	0,90
7. Turnover intention	3,55	3,49	1,10	1,17	-0,46	-0,54	-0,56	-0,61	0,81	0,84

* High skewness and/or kurtosis

Table 2 shows that Cronbach alpha coefficients that were obtained for all the subscales, at both measurements, range from 0,74 to 0,90. It therefore appears that the scales employed are good representations of the relevant constructs, also over time. The measuring instruments have relatively normal distribution, with skewness and kurtosis within the +1 and -1 range. The only exceptions are Task Quality Ambiguity which shows high skewness (T1 and T2) and kurtosis (T1 and T2), and Job Satisfaction, which shows high skewness (T2).

Table 3 below reports on the correlations between the variables. Time 1 data is reflected above the diagonal and Time 2 data is reflected below the diagonal.

Table 3

Product-Moment Correlation Coefficients between Task Completion Ambiguity, Task Quality Ambiguity, Employability (External), Employability (Internal), Job Challenge, Job Satisfaction, and Turnover Intention Scales.

	1	2	3	4	5	6	7
1. Task Completion Ambiguity	1	0,61* ⁺⁺	-0,27*	-0,33* ⁺	-0,40* ⁺	0,24*	-0,40* ⁺
2. Task Quality Ambiguity	0,52* ⁺⁺	1	-0,3* ⁺	-0,40* ⁺	-0,48* ⁺	0,30* ⁺	-0,55* ⁺⁺
3. Employability (External)	-0,10	-0,30* ⁺	1	0,58* ⁺⁺	0,28*	-0,07	0,35* ⁺
4. Employability (Internal)	-0,22*	-0,33* ⁺	0,57* ⁺⁺	1	0,34* ⁺	-0,18*	0,45* ⁺
5. Job Satisfaction	-0,38* ⁺	-0,36* ⁺	0,27*	0,27*	1	-0,64* ⁺⁺	0,66* ⁺⁺
6. Turnover Intentions	0,31* ⁺	0,27*	-0,00	-0,12	-0,64* ⁺⁺	1	-0,51* ⁺⁺
7. Competency Demands	-0,42* ⁺	-0,48* ⁺	0,23*	0,33* ⁺	0,63* ⁺⁺	-0,53* ⁺⁺	1

* $p \leq 0, 01$ (statistically significant) (2-tailed)

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

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

The analysis of Time 1 data indicates that - with the exception of the correlations between employability (external) and turnover intentions - all correlations were statistically significant. The analysis of Time 2 data in Table 3 revealed that with the exception of the correlations between Task Completion Ambiguity, Employability (external and internal) and Turnover Intentions, all others were statistically significant.

Further inspection of Table 3 indicates that Task Completion Ambiguity is positively and practically significantly (large effect) related to Task Quality Ambiguity at both T1 and T2, negatively to Employability (external and internal – with medium and small practical significance respectively, at T1 only) at T1 and T2, and negatively practically significantly

(medium effect) related to Job Satisfaction at T1 and T2, positively related to Turnover Intention at both times (practically significant only at T2), negatively practically significantly (medium effect) related to Competency Demands at both T1 and T2.

Task Quality Ambiguity is negatively and practical significantly (medium effect) related to Employability (internal and external), Job Satisfaction both T1 and T2. It is further positively related to Turnover Intentions, with practical significance of a medium effect at T1. Lastly, Task Quality Ambiguity is negatively related to Competency Demands with medium practical significance at T1 and at T2.

A positive correlation exists between external and internal Employability (and Job Satisfaction at both T1 and T2 (practically significant with medium effect at T1 for internal employability only). Only internal Employability correlated statistically significantly negative with Turnover Intention at T1. A positive relationship for Employability (external and internal) with Competency Demands at T1 (practically significant with medium effect for both dimensions) and T2 (practically significant only for internal employability) was found.

Job Satisfaction showed a strong negative relation with Turnover Intention at both T1 and T2, and a strong positive relation with Competency Demands at both T1 and T2. Lastly Turnover Intentions showed a negative practically significant (large effect) with Competency Demands at both T1 and T2.

A multiple regression analysis was performed next to test the possible mediating effect of Job Satisfaction in the relationship between Task Completion and Quality Ambiguity, Competency Demands, Employability Perceptions and Turnover Intentions. According to Baron and Kenny (1986), three steps are recommended to test for mediation. Firstly, mediation can be illustrated by regressing Job Satisfaction on Job stressors, Competency Demands, Employability Perceptions and showing it to have an effect. Secondly, those Job stressors, Competency Demands and Employability Perceptions should have an effect on Turnover Intentions. Thirdly, that Turnover Intention should be regressed on the Job Satisfaction and Job stressors Competency Demands, Employability Perceptions, and that Job Satisfaction should still affect

the Turnover Intentions. The effect of time was also investigated, in that Turnover Intention at Time 2 was used as the outcome variable, while other variables were indicated by Time 1 data.

The regression analysis is displayed in Table 4.

Table 4

Regression Analyses with Job Satisfaction and Turnover intentions as Dependent Variables

Model	Unstandardised Coefficients		Standardised Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
	B	SE	Beta						
			Dependent Variable: Job Satisfaction (T1)						
(Constant)	0.53	0.18		2.96	0,00*	38.56	0,68	0,46	0,46
Task Completion Ambiguity	0.12	0,10	0.11	1.82	0,07				
Task Quality Ambiguity	0.11	0,08	0.10	1.40	0,17				
Employability - External	0,02	0,07	0,02	0.28	0,78				
Employability - Internal	0.01	0,07	0.01	0.17	0,86				
Competency Demands	0,54	0,07	0,55	8.91	0,00*				
			Dependent Variable: Turnover Intention (T2)						
(Constant)	3.96	0,27		14,46	0,00*	7.26*	0,37	0,14	0,14
Task Completion Ambiguity	-0.33	0,10	-0.26	-2.36	0,00*				
Task Quality Ambiguity	0,26	0,13	0,18	2,05	0,04*				
Employability - External	0,24	0,11	0,17	2,24	0,03*				
Employability - Internal	0.04	0,11	0,28	0,34	0,73				
Competency Demands	-0,39	0,09	-0,33	-4,24	0,00*				
2(Constant)	4.18	0,27		15.48	0,00*	17.08*	0,45	0,20	0,06
Task Completion Ambiguity	-0.28	0,10	-0.22	-2.86	0,01*				
Task Quality Ambiguity	0,31	0,12	0,21	2,49	0,73				
Employability – External	0,25	0,10	0,18	2.39	0,03*				
Employability – Internal	0,04	0,11	0,03	0,40	0,69				
Competency - Demands	-0,17	0,10	-0,15	-1.68	0,10				
Job Satisfaction (T1)	-0,41	0,10	-0,34	-4,13	0,00*				

* $p \leq 0,05$ (statistically significant)

With regards to the first regression analysis, with Job Satisfaction (T1) as dependent variable, results indicated that Competency Demands made a statistically significant contribution in explaining the variance in Job Satisfaction (T1). The results further show that 46% of the variance in Job Satisfaction (T1) is predicted by Task Completion Ambiguity, Task Quality Ambiguity, Internal and External Employability and Competency Demands ($F = 38.56, p \leq 01$).

In the first step of the second regression analysis, with Turnover Intention as dependant variable, it was Task Completion Ambiguity, Task Quality Ambiguity, Employability – external, and Competency Demands (All T1) which made statistically significant contributions in explaining the variance in Turnover Intention (T2). The results further indicate that 14% of the variance in Turnover Intention is predicted by the independent variables ($F = 7.26, p \leq 01$). In the second step of the regression analysis it was only Task Completion Ambiguity, Employability – external and Job Satisfaction that made statistically significant contributions in explaining Turnover Intention. The variance explained increases to 20%, when Job Satisfaction (T1) is considered additionally. Based on the results it is evident that Job Satisfaction does not have a mediating effect in the investigated relationships. It is, however, evident that Task Completion Ambiguity, Employability – external and Job Satisfaction (All T1) has direct relations to Turnover Intention (T2). Practical significance for the mediating effect in the last step of the regression analysis with Turnover Intention (T1) as dependent variable was $f^2_{A} = 0,25$, which indicated a medium effect.

DISCUSSION

The objective of this study was to conceptualise and investigate the longitudinal relationship between individual job stressors (task quality ambiguity and task completion ambiguity), competency demands and employability perceptions (internal and external), and subsequent turnover intentions. The study also investigated the possible mediating effect that job satisfaction might have on the relationship between the job stressors and turnover intentions, in a sample of gold mining employees in Africa.

All the measurements showed that they represent the constructs of the intended variables efficiently, specifically over time. This finding for these measures is encouraging, given that they

have not been applied in a South African context before. This finding substantiates international findings in terms of the reliability of the Task Quality Ambiguity and Task Completion Ambiguity (Näswall *et al.*, 2006), Competency Demands (Hellgren *et al.*, 1997), Employability – external (Näswall *et al.*, 2006; Van der Vliet & Hellgren, 2002) and internal (Näswall *et al.*, 2006; Van der Vliet & Hellgren, 2002), Job Satisfaction (Hellgren *et al.*, 1997; Näswall *et al.*, 2006), and Turnover Intention (Näswall *et al.*, 2006; Sjöberg & Sverke, 2000) scales, and their applicability and suitability in a South African working population.

Results indicated that employees experiencing task completion ambiguity (the understanding an individual has of what the task entails and also the difficulty experienced to judge when an assignment is completed) will also experience task quality ambiguity (the difficulty an individual experiences to determine whether his work results were of high enough quality). These two measures, however, share conceptual similarity and were highly related, also over time. It is also understandable on a practical level that completion and quality ambiguity should be closely related and intertwined. In the development of these measures, Hellgren *et al.*'s (2008) statistical analysis yielded a 0.67 correlation between the two job stressors.

Hypothesis one was supported by the results indicating that the higher task completion and quality ambiguity for an individual, the lower the experience of job satisfaction and work competency demands (job challenges). Thus, unclear requirements of when the task is to be completed and whether it is good enough detract from job satisfaction and the feeling of work being a learning experience. Similar findings were presented by Hellgren *et al.* (2008), where both these job stressors had a negative relationship with job satisfaction. They, however, could find no relationship between task completion ambiguity, task quality ambiguity and competency demands. Hypothesis one is further confirmed in this study by the findings of higher task quality and completion ambiguity are also related to lower employability (internal and external). Thus, being unsure whether job requirements in terms of completion and quality have been met, employees see themselves as less employable – either within the same organisation, or outside at another. The perceived ability of employees to obtain employment within the same organisation and also to secure employment outside of the organisation is strongly related. In Kalyal and Saha (2008), employability - internal and employability - external shows a positive relation which is to

be expected because of the overlap of the construct. Employees may therefore be under the impression that they can get other employment within the organisation and at the same time feel that they are able to move to another organisation, should it be required from them. Although the participants felt that they are employable within and outside of the current company, this will not necessarily move them to resign from the company, as the weak relationship with turnover intention illustrates. The relationship with internal employability was somewhat stronger - when compared to external employability - signifying that it may be more attractive to move within the same organisation, for example between departments or business units, than to go to another organisation altogether. This finding is comparable to previous studies (Griffeth *et al.*, 2000; Lee *et al.*, 2000; Maertz & Campion, 1998; Van Dam, 2005) which showed that lower feelings of job satisfaction were associated with perceptions of being more employable *internally*, and therefore would not consider searching for external employment and leave the organisation altogether. The results of this particular study may also be explained by the context of the labour and work environment in South Africa, where strict labour legislation dictates the difficulty in dismissing employees from the organisation, as well as the existence of high unemployment ratios in the country. This may provide a safety net which implies that even if high employability feelings are experienced, employees feel it safer to retain their current employment, or remain with their employer.

In terms of predicting employees' turnover intentions, it was seen that their experience of task completion ambiguity, their views of their own external employability and their experienced job satisfaction make a direct contribution in predicting the intention to leave the organisation over time. It was found in this study that job satisfaction showed a strong negative relation with turnover intention at both times, endorsing hypothesis two. Earlier studies confirmed the negative relationship with employability orientation and turnover intention to job satisfaction (Griffeth *et al.*, 2000; Lee *et al.*, 2000; Nauta *et al.*, 2009; Van Dam, 2005).

Confirming hypothesis 3, it is indicated in this study at both measurements that task completion ambiguity and task quality ambiguity detract from job satisfaction and contribute to turnover intention. Furthermore, Hellgren *et al.* (2008) indicated that the job stressor specifically, task completion ambiguity, related inversely to job satisfaction. The implication for the organisation

would be that the greater the work pressures due to unclear task completion knowledge, the belief of the individual that he will be able to obtain external employment and together with lower levels of job satisfaction can lead to the intention to leave the company. The strong negative relationship found between competency demands and the intention to leave the company in this study, contributed to the additional confirmation of hypothesis three. These findings are supported by work done by De Cuyper, Bernard-Oettel, Bertnson, De Witte and Alarco, (2008), where they confirmed that the more employable an individual feels the lower the intention to leave the current organisation.

No evidence was found for confirming hypothesis 4, in order to establish the mediating role of job satisfaction between job stressors, competency demands and employability perceptions on the one hand and turnover intentions on the other hand. Although we know from previous studies (Cooper, Dewe & O'Driscoll, 2001; Griffin, Neal & Parker, 2007; Lambert & Lambert, 2001) that the classic job stressors (role overload, role ambiguity, and role conflict) have various outcomes on work performance, the current study indicates that the job stressors (task completion ambiguity and task quality ambiguity) display a similar potential to become equally important in the investigation on how individuals experience the changed workplace and consider their intentions to remain with the organisation. According to findings from Hellgren *et al.* (2008), those who experience a high degree of uncertainty in respect of the completion of the work or not, or those who also feel unsure about the quality, suffer impeded work performance in the long run. This highlights the call for attention to the importance of clarifying the roles and accountabilities of employees with clear feedback on work completion and quality in the workplace.

LIMITATIONS AND RECOMMENDATIONS

This study represents the first attempt in South African literature to investigate if job stressors in the workplace correlated with other outcomes, by means of a longitudinal approach. This was specifically proposed by Hellgren *et al.* (2008) as further research to be done with regards to the job stressors. Good reliabilities were found for the variables, confirming results with previous investigations. These results affirm the worth of investigating the job stressors in addition to

classic stressors in the workplace. The measurement over time confirmed the prolonged effect of the stressors as leading to a negative outcome for the individual and the organisation. Further investigation into the role of the job stressors in the work environment, specifically in South Africa, is proposed.

An obvious limitation could be the mediating effect of job satisfaction on the outcome to leave the organisation was not found in this study, although it was seen that over time the lack of job satisfaction can lead to increase turnover intentions. Given the abovementioned limitation it would be important to find relevant mediators that may be amenable to training or other organisational intervention to ensure skilled employees are retained.

The inclusion of the job stressors can add much value to organisations if they understand the impact of these job stressors on performance, motivation and job satisfaction in the new working life. Being satisfied at work will allow employees to feel that they are adequately competent, able to judge the amount of work that is necessary, as well as able to determine when tasks are completed.

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CHAPTER 5
ARTICLE 4

THE INFLUENCE ON SUBSEQUENT HEALTH OF INTERPERSONAL WORK EXPERIENCES AND JOB INSECURITY

Melissa Jacobs

ABSTRACT

Orientation: Interpersonal relations in the workplace have had significant impact on the overall contribution of individuals to the performance of organisations.

Research purpose: This study aims to examine the moderating effect of social support at work (co-worker and supervisory support) when experiencing positive interpersonal (communication with the manager and feedback), negative interpersonal experiences (powerlessness and interpersonal conflict) and job insecurity (quantitative and qualitative) on subsequent health.

Motivation for the study: Job insecurity and a healthy workplace goes hand in hand, the diverse workforce of South African companies calls for a better understanding of interpersonal relationships and support.

Research design, approach and method: The measuring battery included instruments on communication with the manager, feedback, powerlessness, interpersonal conflict, job insecurity (quantitative and qualitative), social support (supervisory and co-worker) and health. A longitudinal study was conducted and data was gathered by means of an electronic survey. The study population was a random sample of employees in different business units in one selected multi-national mining company based in South Africa ($n = 771$). Cronbach alpha coefficients were used to determine the homogeneity, uni-dimensionality and internal consistency of the instruments. Social support's main and interactive effects were tested by employing the hierarchical multiple regression analysis.

Main findings: Results for these employees indicated that all the proposed variables were statistically significantly related to health. No moderating effect for social support could be found over time.

Practical/managerial implications: Interaction with management and co-workers, through regular communication, e-mails, open-door policies, clarity regarding roles and accountabilities, and enabling participation in decision-making, can alleviate the feelings of job insecurity and assist in increasing health and well-being.

Contribution/value-add: Although many variables have been considered in this study, it was seen that only interpersonal conflict was a significant predictor of health, over time. In a South African workplace with diverse groups of employees working together this finding is significant, and it is clear that if conflicts can be managed, it may play a role in mitigating the detrimental effects thereof in terms of employee wellbeing.

Key words: Feedback, communication with the manager, powerlessness, interpersonal conflict, job insecurity, social support, health

Working life has the potential to affect individual employees' interpersonal relationships both positively and negatively (Stoetzer, 2010). Because of the diverse society in South Africa, many complex features arise, with different cultural groups having their own identities. Different variables like race, gender, age, ethnicity and language distinguish the groups from one other (Booyesen, 2007; Booyesen & Nkomo, 2005, 2006; Bornman, 1999; Cilliers & May, 2002; Cilliers & Smit, 2006) and these are also pronounced in the workplace. It may even be proposed that these are highlighted in the workplace by legislation enforcing employment equity (Employment Equity Act, 1998) and affirmative action (Mining Charter, 2010).

Employees who make a significant contribution to the overall performance of the company can only be enabled to do so by supervisors and managers who allow for good working relationships, an open environment and support (Ahmed, Shields, White & Wilbert, 2010). Beslin and Reddin (2004) showed in their research that individual organisational performance improves when employees are allowed to communicate freely, are provided the necessary resources and assistance and are remunerated according to delivered performance. The negative outcomes (work stress) of work are frequently highlighted in research, but some studies indicated that well-being and health could also be advanced through work (Luthans, 2002). Positive health-related behaviours may, however, be impaired by high levels of job stress experiences (Payne, Jones & Harris, 2002).

Work and organisational attitudes are found to be related to job insecurity (Davey, Kinicki & Scheck, 1997; Green, Felstead & Burchell, 2000; Human, 2002; Orpen, 1993). In South Africa, where the presence of job insecurity is noted in many companies, it would be detrimental to ignore the hampering influences thereof on successful performance of individuals and organisations (Bothma, 2005; Elbert 2002; Labuschagne, Buitendach & Bosman, 2005; Reynders, 2005). The occurrence of job insecurity and subsequent material and psychological cost in South Africa cannot be afforded by most organisations (Botha, 2006; Sauer, 2003; Snoer, 2005; Van Schalkwyk, 2005; Van Zyl, 2005). Sverke and Goslinga (2003) indicated that the immediate effects of job insecurity on an individual can also lead to long term consequences in behaviour, health and well-being. The experiences of work stress can be a threat not only to the individual, but to the whole organisation. The adverse impact of stress experiences can lead to

lower productivity and an increase in the number of employees who are not at work due to ill-health (Sieberhagen, Rothmann & Pienaar, 2009).

The phenomenon of a healthy workplace in today's society shows clearly that it can be beneficial to the workforce and productivity of the organisation. In South Africa specifically, occupational risk indicators have been linked to the outcomes of stress (Barkhuizen & Rothmann, 2004; Pienaar & Rothmann, 2005; Rothmann, 2005; Temkin, 2004). The World Health Organization (WHO) defines health as “a complete state of physical, mental and social well-being and not just the absence of disease” (World Health Organization, 2002, p.2). It is important to note that although the definition includes physical and psychological health, the tendency is to focus on physical health (through the prevention of occupational diseases), which leaves psychological health at risk. Health and well-being is described as a relationship between mental health and environmental features (Andrea, Bültman, Beurskens, Swaen, van Schayck & Kant, 2004; Sousa-Poza & Sousa-Poza, 2000), but limited attention has been given to the relationship between mental health and interpersonal work characteristics. In today's changing world of work, employers look for enhanced interpersonal communication, critical thinking skills and problem-solving abilities (Martin, Jandaghi, Karimi & Hamidizadeh, 2010; Un ange passé, 2008). It is often very context-specific factors that prove to be associated with poor health. However, negative feedback, inadequate appraisal and communication process factors from management/leadership appear to be important (Leung, Su & Morris, 2001; Van Knippenberg, Van Knippenberg, De Cremer & Hogg, 2004). Other dimensions related to communication in organisations, such as a lack of feedback, contribution in decision making processes and independence have been shown to be detrimental to psychological well-being (Lee & Ashforth, 1996; Pfennig & Hüsich, 1994).

Several studies have indicated that managers' behaviour has an influence on how employees react mentally to work. Gilbreath and Benson (2004) indicated that positive managerial behaviour (e.g., giving control to employees, effective communication, being cognisant of employees' well-being outcomes) increased employees well-being and perceptions of their own health, above the effects of social support, age, support from home, and work/home stressors. When effective communication is not present, personal goals will not be achieved by individuals

(Magnus, 2009). Social interaction between people is emphasised by good communication skills, aiding the building and maintenance of these relationships. The downside of poor communication in the workplace is lower job satisfaction, productivity, performance and interpersonally lower morale, trust and respect for management and co-workers, and ultimately, poorer health (Un ange passé, 2008).

In the changing work environment it is important for managers to retain loyal employees through the promotion of interpersonal communication (Brunetto & Farr-Wharton, 2004). However, few studies have focused on the role of interpersonal communication in enhancing commitment to the organisation and management (Bambacas & Patrickson, 2008). Performance feedback in organisations has indicated that the recipient of the feedback still has a sincere regard for obtaining the feedback to start and complete work performance, even if such feedback is negative (Ashford, Blatt & Vandewalle, 2003). The proximal factors (e.g. feedback at work and challenges of everyday work) directly affect employees' interpretation of the work situation and have a significant bearing on related work experiences (Van der Vliet & Hellgren, 2002). Diversity of worker groups (Williams & O'Reilly, 1998) includes varied value and belief systems that can lead to misinterpretation and disregard. A 2005 UK survey by Roffey Park found that "78% of managers are suffering from work-related stress, 52% have experienced harassment, *(and)* 46% have seen an increase in conflict at work" (www.roffeypark.com).

Positive work engagements have been shown to consist of social support from managers and co-workers, work performance feedback and developmental opportunities (Bakker & Demerouti, 2008; Halbesleben, 2010; Schaufeli & Salanova, 2007). For instance, feedback assists in identifying areas of learning for individuals, assisting them to increase job skills, whereas autonomy in decision making and support from co-workers increases the feeling of coherence in the organisation. In either case, the experiences of these interventions lead to a positive influence on the individual and organisation (Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2007).

More of the day-to-day exchanges of people at work are reasonably positive (Watson, 2000). Unfortunately it is suggested that the negative events, such as interpersonal conflict, overshadow the effects of positive work experiences and can influence well-being and health in the long run

(Rook, 2001; Taylor, 1991). Interpersonal conflict at work has been shown to increase job dissatisfaction, lower organisational commitment, increase other negative work behaviours and in the end contribute to the intention to leave the company (Fox, Spector & Miles, 2001; Frone, 2000; Penney & Spector, 2005). Feelings of powerlessness, on the other hand, have received a lot of attention in research. Experiencing feelings of power can induce a positive state of mind and action (Anderson & Galinsky, 2006; Galinsky, Gruenfeld & Magee, 2003). Increased feelings of powerlessness or people who are not allowed to express opinions or control the decision-making processes may experience psychological distress (Tepper, 2001; Greenberg, 2004).

In general, employees who see their managers as abusive tend to experience low job and life satisfaction, emotional commitment, and elevated levels of conflict at work and at home, subsequently increasing stress (psychosomatic symptoms, anxiety and depression) at work (Hoel, Rayner & Cooper, 1999; Tepper, 2001). Social support can reduce workplace stressors by acting as a buffer to reduce these negative effects on an individual (Cohen & Wills, 1985; Pierce, Lakey, Sarason, Sarason & Joseph, 1997; Sarason & Duck, 2001; Sarason, Sarason & Pierce, 1990; Stroebe & Stroebe, 1996). Support for the shielding effects of social support has been confirmed in various meta-analytic studies (e.g., Viswesvaran, Sanchez & Fisher, 1999).

In the remainder of this article the positive interpersonal work attributes of communication with the manager and feedback, versus the negative interpersonal work attributes of powerlessness and interpersonal conflicts, job insecurity and their importance in employee health will be considered.

Positive Interpersonal Work Attributes

Two dimensions seem to be important from the above-mentioned problem statement, namely communication with the direct manager and feedback provided by said manager on job performance. These two dimensions are discussed in more detail under this heading.

i. Communication with the manager

Interpersonal communication skills of managers refer to the ability to reply to employees' requirements in a positive fashion, by delegating authority, creating a work environment where people feel that they are not being discriminated against and have the opportunity to learn and develop (Avkiran, 2000). Colquitt (2001) has described organisational justice as providing acceptable deliberation to an individual's point of view by overturning prejudices, applying decision-making criteria consistently, providing timeous feedback, having open and clear communication and treating employees with respect. In other words, it implies the degree to which the manager or supervisor indicates the level of clear and open communication with the employee.

Bell and Martin (2008) defined managerial communication as “the downward, horizontal, or upward exchange of information and transmission of meaning through informal or formal channels that enables managers to achieve their goals” (p.130). Interpersonal communication skills include a defined set of knowledge, skills and the ability to have self-awareness (Robinson, 2006).

The leadership style depicts the interpersonal skills perceived (e.g. listening, goal setting, and clarifying expectations) through the effective resolving of conflicts, chairing of meetings and promoting empowering interactions. Positive perceptions and the correct interpretation of messages by employees will be dependent on how successful the manager can deliver his or her message (Bambacas & Patrickson, 2008; Hynes, 2008). It has been shown that communication is also related to interpersonal and informational justice perceptions (Kernan & Hanges, 2002). For justice perceptions to be positive, it is imperative that the information communicated is delivered accurately, well-timed, and supportive (Schweiger & DeNisi, 1991). A positive relationship with managers induces obligations by employees to return hard work and commitment to their respective organisations (Colquitt, 2001). Autocratic leadership styles can hamper successful communication with employees. Accordingly, good quality communication increases employee health and decreases burnout, turnover and absenteeism (Ahmed *et al.*, 2010; Liljegren & Ekberg, 2009).

ii. Feedback

Leadership is identified by effective feedback practices (Leung *et al.*, 2001; Yukl, 2002). Feedback is divided into two areas, by directly enquiring for it, or by monitoring the environment and other people for signals that might indicate feedback. Receiving feedback increases the assessment of own abilities (Williams & Johnson, 2000), enables adjustment of behaviour towards goals (Morrison & Weldon, 1990), abets the learning of new skills and acquiring of knowledge (Morrison, 1993) and progressive work performances (Renn & Fedor, 2001). Research has shown that employees constantly try to achieve a balance between the actual receiving of feedback and the expense of seeking feedback. People proceed to action when the need for feedback exceeds the cost of perceptions of seeking the feedback (Ashford & Cummings, 1985; VandeWalle & Cummings, 1997). Feedback delivery and fair treatment as part of leadership behaviour has shown to influence employees' conceptions of themselves (Van Knippenberg, Van Knippenberg, De Cremer & Hogg, 2004), performance at work (Gerstner & Day, 1997) and also employee well-being (van Dierendonck, Haynes, Borrill & Stride, 2004).

Negative Interpersonal Work Attributes

The two dimensions of negative interpersonal work attributes which appear most pertinent from the problem statement, seem to be powerlessness and interpersonal conflict, and are discussed below.

i. Powerlessness

Powerlessness can be defined as not having control over circumstances and the absence of control over personal life experiences (Banai & Reisel, 2007), and when applied to the workplace, the inability to control work practices (Yang, Yang & Kawachi, 2001). Managerial behaviour has an influence on the experience of powerlessness (Rucker & Galinsky, 2008; Taylor, White & Muncer, 1999). Having a lack of freedom or autonomy can lead to feelings of powerlessness, and individuals experiencing powerlessness might employ damaging behaviours to express their frustrations to reclaim the feeling of power (Ambrose, Seabright & Schminke, 2002). According to Tabak and Koprak (2007), individuals tend to evade feelings of powerlessness because such feelings prevent problem-solving behaviour in the workplace. Providing employees with job autonomy through access to resources, equitable distribution of

resources and the ability to define their roles will increase their sense of control (Dacher, Gruenfeld & Anderson, 2003; Gilbert & Ivanchevich, 1999).

Feelings of powerlessness are a dimension of worker alienation, where an employee is cognitively separated from work and the workplace, leads to an absence of job involvement as well as a lack of identifying with the organisation they work for (Armstrong-Stassen, 2006). Many studies (Ambrose *et al.*, 2002; Tabak & Koprak, 2007; Zellars, Liu, Bratton, Brymer & Perrewe, 2004) have highlighted the negative consequences of feelings of powerlessness. Ambrose *et al.* (2002) and Spector (2007) highlighted that feelings of powerlessness may contribute to depression which in turn may motivate negative acts, deviance and aggressiveness in order to gain control again.

ii. Interpersonal conflict

Conflict has been described in many different ways; three themes emerge that generally describe the experience of conflict, namely different valuations of the same goals, intrusion and negative feelings (Barki & Hartwick, 2001). Ilies, Johnson, Judge and Keeney, (2010, p.3), defined interpersonal conflict as “a dynamic process that occurs between interdependent parties as they experience negative emotional reactions to perceived disagreements and interference with the attainment of their goals.” Further definitions by Jehn and Mannix (2001, p. 238) define conflict as “an awareness on the part of the parties involved of discrepancies, incompatible wishes, or irreconcilable desires” and Wall and Callister (1995, p. 517) defined it as “a process in which one party perceives that its interests are being opposed or negatively affected by another party”. Because interpersonal conflicts at work correspond with other specific negative workplace occurrences, many people may react negatively to the conflict and conclude that conflict has many costly and detrimental effects to the individual and also the organisation (De Dreu & Weingart, 2003). Poor health and well-being already puts the individual on the back foot and may actually increase further conflicts with co-workers and supervisors (De Dreu & Beersma, 2005).

Interpersonal conflict's relation to psychological well-being has been investigated in numerous studies (Chen & Spector, 1991; Lazarus, Rodafinos, Matsiggos & Stamatoulakis, 2009; Spector,

1987). Giebels and Janssen (2005) and Nakata (2007) indicated that interpersonal conflict may increase depressive symptoms and emotional exhaustion. Further studies on the relation between conflict and health are noted; most researchers agree that conflicts are potential stressors plausibly related to negative outcomes (Bjarte, Mykletun, Dahl, Moen & Tell, 2005; Guerra, Martinez, Mundaete & Medina, 2005). The appearance of conflict at work is sometimes included in general indexes used to measure other detrimental working conditions (Ilies, Schwind, Wagner, Johnson, DeRue & Ilgen, 2007).

Job Insecurity

Job insecurity has been studied, conceptualised and defined in various ways (Ashford, Lee & Bobko, 1989; Caplan, Cobb, French, Harrison & Pinneau, 1975; De Witte, 2000; Greenhalgh & Rosenblatt, 1984; Hartley, Jacobson, Klandermans & Van Vuuren, 1991; Johnson, Messe & Crano, 1984; Reisel, 2002; Sverke, Hellgren, Näswall, Chirumbolo, De Witte & Goslinga, 2004; Van Harrison & Pinneau, 1975). Individuals have different reactions to job insecurity because of its subjectively perceived nature (Sverke *et al.*, 2004). Where Greenhalgh and Rosenblatt (1984, p.438) defined it as “the perceived powerlessness to maintain the desired continuity in a threatened job situation”, Isaksson, Pettersson and Hellgren, (1998) extended on the definition of job insecurity by distinguishing two dimensions, namely quantitative and qualitative job insecurity. Whereas *quantitative job insecurity* points to the perceived threat of losing the job itself, *qualitative job insecurity* describes the uncertainty and threats to loose significant job features.

Perceived feelings of job insecurity in times of change in the organisation have been positively associated with poor communication in the organisation (see De Witte, 2005; Mauno & Kinnunen, 2002), feedback and the lack of feedback (Hubert & Van Veldhoven, 2001; Zapf & Einarsen, 2003), interpersonal conflicts (Hoel & Cooper, 2000), low workplace control and high existence of powerlessness (see for example Barling, Weber & Kelloway, 1996; Leach, 2006; Mauno & Kinnunen, 2002). While international research has considered these factors in relation to job insecurity, the lack of research specifically in South Africa deserves to be addressed.

Social support: A buffer

Social support refers to helpful social interactions often divided in instrumental support, e.g. the individual is given the information or the resources to do the requested task, and emotional support, e.g. emotional backup, personal feedback and appreciation in general (Waldenström, Ahlberg, Bergman, Forsell, Stoetzer, Waldenström & Lundberg, 2008). In the workplace, social support is normally provided by both co-workers and supervisors who relate closely to the individuals and their subsequent health and well-being (Ng & Sorensen, 2008; Thompson, 2005). Workplace social support specifically focuses on assistance from co-workers, supervisors and managers through joint problem solving, involvement in information sharing, and gaining advice (Wills & Shinar, 2000). The receiving of emotional support has become more of a focal point when investigating social support in the workplace (Brough & Frame, 2004; Hauck, Snyder & Cox-Fuenzalida, 2008; Pears, 2004). Work-related stress is assumed to be more affected by co-workers and supervisors rather than non-work related stress, which in turn would be more affected by family support (LaRocco, House & French, 1980).

Supervisor social support, in particular, has shown to have a strong positive influence on lessening the negative costs of occupational stress (Van Emmerik, Euwema & Bakker, 2007). Schirmer and Lopez (2001) agreed that the awareness of social support from managers can significantly reduce the consequences of stressors and strains. Similarly, Bliese and Castro (2000) established that defining roles and enabling control over decision making can only make a contribution if supervisors support employees.

Co-worker support refers to the assistance of employees with performance in the job, sharing of work-related knowledge and encouragement (Zhou & George, 2001). Support from colleagues and receiving performance feedback increase the probability of being successful in achieving one's work goals with the ultimate outcome of being positive and engaged (Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2007). Higher levels of co-worker support in a company are likely to be associated with enhanced organisational performance and good physical and mental health (Joiner, 2007; Kaul & Lakey, 2003).

The last 20 years of the previous century provided for many studies to be published on the influence of social support in encouraging and preserving health and well-being (Beehr, Farmer, Glazer, Gudanowski & Nair, 2003; Lincoln, Chatters & Taylor, 2005; Mendelson, Catano & Kelloway, 2000; Peeters & LeBlanc, 2001; Rau, Georgiades, Fredrikson, Lemne & De Faire, 2001; Sargent & Terry, 2000; Song & Lin, 2009; Väänänen, Kivimaki, Pentti & Vahtera, 2005). Regardless of social support's positive influence on health-related outcomes, it is a fundamental form of human interaction (Burlison, Albrecht & Goldsmith, 1993). As such, social support plays a crucial role in the formation, growth and upkeep of interpersonal relationships. In general, these findings indicate that social support can contribute to the positive experience of job satisfaction (Limbert, 2004), overall well-being (Thompson, 2005) and therefore has the ability to alleviate the negative effects of stressors.

Mental Health

Workplace health and well-being issues are an increasingly important phenomenon in today's organisations. Recent research emphasised that the relationship between mental health and workplace characteristics is becoming more important (Andrea *et al.*, 2004; Danna & Griffin, 1999; Sousa-Poza & Sousa-Poza, 2000), but limited attention has been given to the relationship between workplace characteristics and personal work experiences. If mental health influences the experience of workplace characteristics (Colling & Hicks, 2007), it could postulate that the degree of mental health and life accomplishment could influence responses to environmental workplace features (De Lange, Taris, Kompier, Houtman & Bongers, 2004). In confirmation, Andrea *et al.* (2004) found that environmental work characteristics, specifically psychosocial aspects (i.e. autonomy in decision making, social support, emotional demands, conflict with supervisor and/or co-workers, job insecurity, and job satisfaction), were related to anxiety and depression.

The Job Demands-Resources (JD-R) model (Bakker, Demerouti, De Boer & Schaufeli, 2003; Demerouti, Bakker, Nachreiner & Schaufeli, 2001) assumes that job characteristics can be classified into two general categories, i.e. job demands and job resources. Job demands firstly refer to those aspects of physical, psychological, social, or organisational nature that will necessitate the ability to sustain physical or psychological effort. Job resources in this instance

can change the relationship between negative experienced job characteristics and the potential outcomes thereof. Good working relationships with the supervisor, for instance, can ease the effects of job stressors and strains, since leaders' support tends to shift the focus of negative demands. Communicating, constructive feedback and appraising employees in a positive manner for good performance preserve employees' motivation and have a positive impact on work performance (Bakker & Demerouti, 2006; Hackman & Oldham, 1980). Again, manager and co-worker support in the workplace can assist workers in coping with high demands and act as a buffer against ill health (Vaänänen *et al.*, 2003).

The conclusion of the above-mentioned studies indicating that work performance and mental health are related, led to the proposed hypothesis in this regard. If personal work-related characteristics, job insecurity - including interpersonal relationships with managers and/or co-workers - can be found to be related to mental health, then steps to develop employees and the organisation via attention to the assessed workplace attributes ought to, in turn, assist organisations in achieving higher levels of performance.

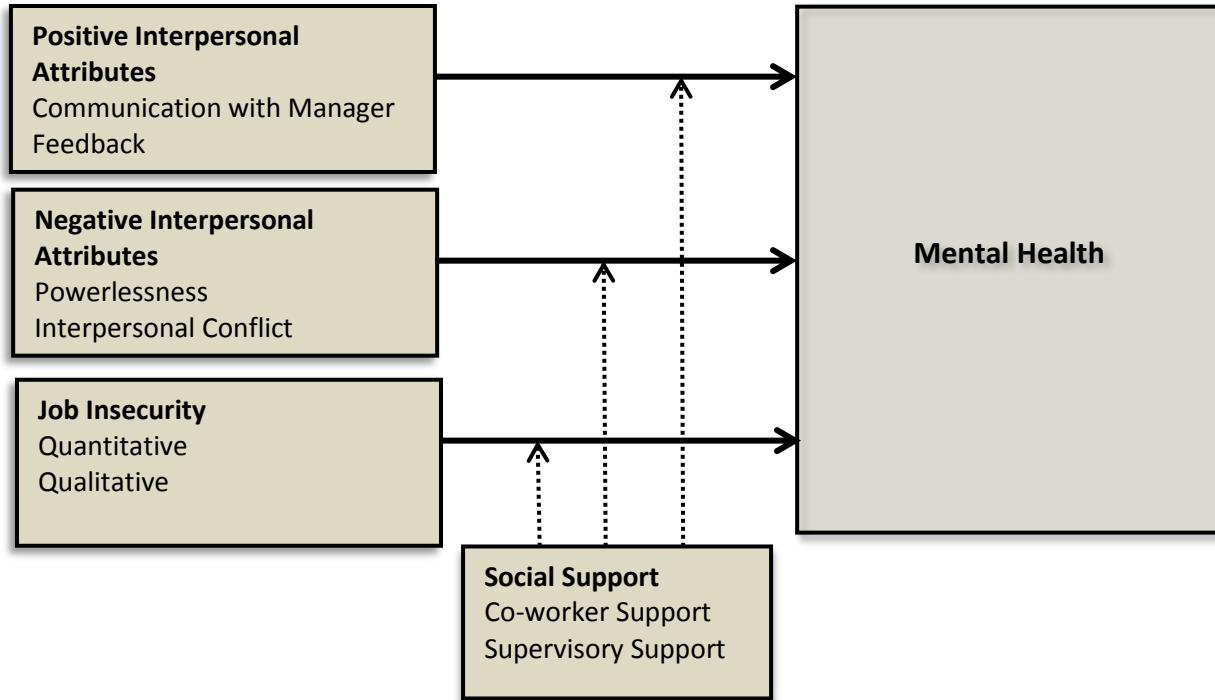


Figure 1. A research model illustrating the relationship between positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict), job insecurity (quantitative and qualitative) and mental health moderated by social support (co-worker support and supervisory support) over time.

Aims and hypothesis

Based on the reasoning above, the present study aims to examine the moderating effect of social support (co-worker and supervisory support) when experiencing positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict) and job insecurity (quantitative and qualitative) on subsequent mental health. The following hypotheses are investigated:

H1: There will be a positive relationship between positive interpersonal attributes (communication with the manager and feedback) and health at T1 and T2.

- H2: There will be a negative relationship between negative interpersonal attributes (powerlessness and interpersonal conflict) and health at T1 and T2.
- H3: There will be a negative relationship between job insecurity (quantitative and qualitative) and mental health at T1 and T2.
- H4: Social support (co-worker and supervisory support) will moderate the relationships between positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict) and job insecurity (quantitative and qualitative) on the one hand, and health on the other, over time.

Research design

To achieve the research objectives of the study, the researcher made use of a longitudinal study design in order to understand how and why a relation between variables exists in relation to aspects of stability and change across time.

Participants

The study population could be defined as a random sample of employees in different business units in one selected multi-national mining company based in South Africa ($n = 771$). The participants included workers who have access to an e-mail facility in five different countries in Africa. The organisation has mining operations in South Africa, Mali, Namibia, Tanzania and Ghana respectively and thus covers a large geographic area in South, East and West Africa. Data was gathered by means of an electronic survey which was distributed to approximately 6000 employees in the different operations of the organisation. A total of 771 surveys were completed, representing a response rate of 12,9% for the final data analysis. During the second measurement (Time 2), the same electronic questionnaires were sent out to exactly the same employees as for T1. The T2 measurement took place 12 months after the first survey. A total of 301 completed questionnaires were returned, which represented a response rate of 5,02%. When matching participants from the pre- to the post measurement was done, only 233 respondents could be matched, representing a response rate of 30% (compared to the original 771 potential respondents) with useable data for the longitudinal study.

The results presented below are based on longitudinal data of 233 respondents. The characteristics of these participants are reported in Table 1.

Table 1

Characteristics of the Participants (Longitudinal sample; n = 233)

<i>Item</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage</i>
Gender	Male	152	65,2
	Female	81	34,8
Children younger than 12 living with you	No	140	60,1
	Yes	93	39,9
Household	Single	99	8,2
	Married or living with a partner	175	75,1
	Living with parents	4	1,7
	Divorced or separated	19	8,2
	Remarried	16	6,9
Educational qualifications	Grade 10 (Standard 8)	10	4,3
	Grade 11 (Standard 9)	6	2,6
	Grade 12 (Standard 10)	70	30,0
	Technical College diploma	32	13,7
	Technical Diploma	35	15,0
	University Degree (BA, B Comm., BSc.)	40	17,2
	Postgraduate Degree (Honours, Masters or Doctorate)	40	17,2
Home language	Afrikaans	110	47,2
	English	76	32,6
	Sepedi	2	0,9
	Sesotho	8	3,4
	Setwana	6	2,6
	isiSwati	1	0,4
	Tshivenda	1	0,4
	isiNdebele	1	0,4
	isiXhosa	5	2,1
	isiZulu	2	0,9
	isiTshonga	1	0,4
	Other	20	8,6
	Employment status	Full time	230
Part-time		3	1,3
Union membership	Yes	133	57,1
	No	100	42,9

The average age of the participants was 42 years, with an average work experience of 17 years. According to Table 1 more participants in this study were male (65,2%), whereas the females presented 34,8%. Of these respondents, 39,9% had children younger than 12 living with them, 75,1,% was married or had a live-in partner. The education levels were quite high, with 17,2% indicating that they had a postgraduate degree. In terms of home language, 47,2% indicated that they were Afrikaans-speaking, and 32,6% indicated that they are English-speaking. Most (98,7%) indicated that they are employed on a full- time basis and 57,1% belonged to a union.

Measuring instruments

Data was gathered by means of an electronic, web-based survey. All participants completed the questionnaire on-line and in English.

The focus of this paper is on the following: interpersonal work attributes (communication with the manager, feedback, powerlessness, interpersonal conflict), job insecurity (quantitative, qualitative), social support (co-worker support, supervisory support) and health. Swedish reliability information is available in a technical report of the questionnaire (Näswall, Baraldi, Richter, Hellgren & Sverke, 2006).

The first scale measuring *Communication with the manager* consists of five items and is based on the scale developed by Colquitt (2001). This scale measures the degree to which the supervisor employs clear and open communication with the employee. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), and a high score on this scale represents a lack of clear and ample communication. One example item of the scale measuring communication with the manager is “*My manager explains clearly and comprehensively when I need it*”. The reliability coefficients of this scale are above 0, 88 (Näswall *et al.*, 2006).

The *Feedback* scale consists of four items and was developed by Hackman and Oldham (1980). The measure captures whether respondents get feedback from the supervisor on how they have carried out their work. The response alternatives range from 1 (disagree) to 5 (agree), e.g. “*My boss gives me a pretty good idea of how well I’m performing my job*”. A high score indicates that

the supervisor gives feedback. Cronbach's alpha (reliability) is reported to be above 0.80 for this scale (Näswall *et al.*, 2006).

The scale for *Powerlessness* measures employees' amount of experienced control and was developed by Ashford *et al.* (1989). It consists of three items, and a high score indicates the lack of influence over one's work situation and organisational processes. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), e.g. "*In this organisation I can prevent negative things from events that might affect my job*". The scale has shown satisfactory internal consistency ($\alpha = 0.78$; Näswall *et al.*, 2006).

Interpersonal conflict was measured with a three-item scale developed by Hovmark and Thomsson (1995) and measures the extent to which the work is negatively affected by conflicts between employees. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), e.g. "*There is a great deal of tension in the workplace due to prestige and conflicts*" and a low score indicates a more negative impact of interpersonal conflicts. The scale measuring interpersonal conflicts previously exhibited good measurement properties, with satisfactory reliability coefficients of 0,87 and higher (Näswall *et al.*, 2006).

The specific scale measuring *quantitative job insecurity* consists of three items and was developed by Hellgren, Sverke & Isaksson, (1999). This scale measures worry and uncertainty regarding the future existence of the current employment. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), and a high score on this scale represents a strong sense of quantitative job security. One example item of the scale measuring quantitative job insecurity is "*I am worried that I will be given notice or be retrenched*". The *qualitative job insecurity* scale consists of four items and was developed by Hellgren *et al.* (1999). This scale measures a concern about losing valued features of the job, such as remuneration, career prospects and benefits, e.g. "*I feel worried about my career development within the organization*". It is measured on the same scale as quantitative job insecurity.

Social support was measured with a two-factor scale developed by Caplan *et al.* (1975). Six items representing the two factors based on the source of support, co-worker support and

supervisor support were employed. The response alternatives range from 1 (strongly agree) to 5 (strongly disagree), e.g. “*I usually receive help from my co-worker when something needs to be done quickly*”; and “*When I encounter problems at work I can always ask my manager for advice*” and a high score represents that support is unavailable. Previous research has found the reliability coefficients for the scales to be the following: *Social support from co-workers* – 0,80; *Social support from supervisor* – 0.90 (Näswall *et al.*, 2006).

Health was measured by the General Health questionnaire, a 12-item version by Goldberg (1979), describing the general mental health of an individual. The response alternatives ranged from 1 (“never”) to 4 (“always”), e.g. “*Lost much sleep over worry*” and “*Been feeling unhappy and depressed*”; a high score reflects a greater degree of mental health complaints. The reliability coefficients range from 0,83 to 0,84 (Näswall *et al.*, 2006). Due to the scale being scored in the opposite direction to the others used, it was reverse-scored for the purposes of analyses.

Statistical analysis

Statistical analysis for this research study was done with the assistance of the SPSS programme (SPSS, 2011). Descriptive statistics were presented by means of describing the means, standard deviations, skewness and kurtosis with applying inferential statistics to investigate the data. Cronbach alpha coefficients were used to determine the homogeneity, uni-dimensionality and internal consistency of the instruments (Clark & Watson, 1995). Further, to specify the relationship between the proposed variables, the Pearson’s product-moment correlation coefficients were applied and statistical significance was set at the 95% confidence interval level ($p \leq 0,05$). Steyn (1999) proposed the effect sizes for practical significance to be set at $d \geq 0,30$ indicating a medium effect and $d \geq 0,50$ for a large effect (Cohen, 1998).

Social support’s main and interactive effects were tested by employing the hierarchical multiple regression analysis. Firstly, communication with the manager and feedback were entered, followed by interpersonal conflict and powerlessness and thirdly job insecurity (qualitative and quantitative). Social support includes the interpersonal relationships between individuals performing similar tasks and it is also the aspect that is situated furthest away from work. In the

fourth step the interaction terms - communication with the manager, feedback, interpersonal conflict and powerlessness - were entered, to test for the hypothesised moderating effect of social support in the relation of the previous variables to health. The means of the variables are set to zero and standard deviations are kept together (Aiken & West, 1991). Cohen, Cohen, West and Aiken's, (2003), guidelines were utilised to test the appropriate practical effect sizes of the change in the R^2 . The f^2 effect measure for multiple regressions is defined as:

$$f^2 = \frac{R^2}{1 - R^2}$$

Where R^2 indicated the multiple correlations number. The f^2 effect sizes of 0,02, 0,15 and 0,35 are termed small, medium and large respectively (Cohen *et al.*, 2003). If a moderating effect is found, it can be graphically illustrated with a uni-variate general linear model.

RESULTS

Descriptive statistics and Cronbach's alpha coefficients of the scales obtained at both measurements (Time 1 and Time 2; $n = 233$) of the longitudinal study are reported in Table 2.

Table 2

Descriptive Statistics and Cronbach Alpha Coefficients of the Measuring Instruments

	Mean		SD		Skewness		Kurtosis		α	
	T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
Communication with Manager	2,38	2,47	1,07	1,06	0,72	0,69	-0,24	-0,32	0,93	0,92
Feedback	2,27	2,21	1,01	0,92	0,70	0,80	0,10	0,22	0,79	0,83
Powerlessness	3,06	3,13	1,10	0,94	-0,01	-0,30	-0,52	-0,60	0,76	0,73
Interpersonal Conflicts	3,24	3,30	1,04	1,12	-0,14	-0,30	-0,70	-0,84	0,72	0,77
Job Insecurity - Quantitative	3,54	3,85	1,15	1,09	-0,40	-0,82	-0,67	-0,07	0,87	0,89
Job Insecurity - Qualitative	2,98	3,13	0,94	0,99	0,12	-0,29	-0,49	-0,34	0,67	0,71
Social Support - Supervisor	2,40	2,35	1,08	1,17	0,80	0,90	-0,06	-,004	0,89	0,93
Social Support Co-worker	2,30	2,31	0,91	0,97	0,61	0,70	-0,19	-0,09	0,83	0,84
Health	2,27	2,31	0,97	1,02	0,85	1,02*	0,30	0,26	0,77	0,85

* High skewness and/or kurtosis

Table 2 shows that most of the measuring instruments have relatively normal distributions, with skewness and kurtosis within the +1 and -1 range. Health at Time 2, however, shows a peaked curve (leptokurtic). The internal consistencies of the constructs vary from 0,67 to 0,93. The guideline according to Nunnally and Bernstein (1994) for a satisfactory internal consistency is $\alpha \geq 0,70$. Therefore, as found in table 2, all scales were retained.

Table 3 below reports on the correlations between the variables. Time 1 data is reflected above the diagonal and Time 2 data is reflected below the diagonal.

Table 3

Product-Moment Correlation Coefficients between Communication with Manager, Feedback, Powerlessness, Interpersonal Conflict, Job Insecurity (Quantitative and Qualitative), Social Support (Supervisor and Co-worker) and Health.

	1	2	3	4	5	6	7	8	9
1 Communication with Manager	-	0.68**++	-0.39**+	-0.40**+	-0.22**	-0.41**+	0.69**++	0.51**++	0.24**
2 Feedback	0.71**++	-	-0.34**+	-0.32**+	-0.27**	-0.40**+	0.45**+	0.41**+	0.29**
3 Powerlessness	-0.37**+	-0.35**+	-	0.22**	0.30**+	0.30**+	-0.24**	-0.32**+	-0.16**
4 Interpersonal Conflict	-0.53**++	-0.45**+	0.28**	-	0.32**+	0.28**	-0.38**+	-0.31**+	-0.29**
5 Job Insecurity – Quantitative	-0.28**	-0.37**+	0.24**	0.34**+	-	0.46**+	-0.29**	-0.29**	-0.20**
6 Job Insecurity – Qualitative	-0.49**+	-0.46**+	0.31**+	0.36**+	0.49**+	-	-0.39**+	-0.26**	-0.25**
7 Social Support – Supervisor	0.69**++	0.53**++	-0.24**	-0.47**+	-0.28**	-0.45**+	-	0.74**++	0.21**
8 Social Support – Co-worker	0.40**+	0.31**+	-0.11**	-0.33**+	-0.21**	-0.28**	0.50**++	-	0.25**
9 Health	0.31**+	0.39**+	-0.17**	-0.32**+	-0.19**	-0.31**+	0.28**	0.22**	-

** $p \leq 0,01$ (statistically significant)

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

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

The inspection of Table 3 indicates that all the relationships between the variables at Time 1 and 2 were statistically significant. Communication with Manager correlated positively with Feedback (practically significant, large effect) at both T1 and T2. It further correlated negatively with Powerlessness and Interpersonal Conflict at both times with a medium practical significance. Communication with the Manager correlated negatively with Job Insecurity – Quantitative (practically significant, medium effect, T1 and T2), and with Job Insecurity – Qualitative at T2. Correlations with Social Support – Supervisor and Co-workers were

practically significant with large and medium effect at T1 and T2. Lastly, correlated positively with Health (practical significantly – medium effect) at Time 2.

Feedback correlates negatively with Powerlessness, Interpersonal Conflict and Job Insecurity – Qualitative and Quantitative, practically significant (medium effect) at both T1 and T2. A positive correlations was found with Social Support (Co-workers and Supervisor), practically significant (medium effect) with both at T1 and large effect with Social Support – Supervisor at T2. Feedback correlated positively with Health, with practically medium effect at T2.

Powerlessness positively correlated with Interpersonal Conflict and Job Insecurity – Quantitative (medium effect at T1), Quantitative (medium effect at T1 and T2). Powerlessness is also negatively correlated to Social Support (Supervisor and Co-workers with only medium effect for Co-workers at T1. It correlated negatively Health at both T1 and T2.

Interpersonal conflict is positively related to Job Insecurity – Quantitative and Qualitative at both times. Practically significant – medium effect for Quantitative Job Insecurity at both times and medium practical significance for Qualitative Job Insecurity at T1. Interpersonal Conflict is further negatively related with Social Support – Supervisor, Co-workers at T1 and T2, and practically significantly, medium effect for Social Support – Co-workers at T1. Interpersonal conflict correlated negatively with Health (T1 and practically significantly (medium effect) at T2).

Job Insecurity – Quantitative is positively and practically significant (medium effect) related to Job Insecurity – Qualitative at T1 and T2. Job Insecurity – Quantitative is further negatively related to Social Support – Co-worker, Supervisor - and Health at both T1 and T2, with practical significance, medium effect to Social Support – Supervisor and Health at T2. Job Insecurity – Qualitative negatively related to Social Support – Supervisor (practically significantly, medium effect, T1 and T2), negatively related to Social Support – Co-workers at both T1 and T2. Job Insecurity – Qualitative related negatively to Health at T1 and at T2 (practically significantly with medium effect only at T2).

Social Support – Supervisor - was positively and practically significantly (large effect) related to Social support – Co-workers at T1 and T2. Social Support – Supervisor was further positively related to Health at both T1 and T2. Social Support – Co-workers was positively related to Health at T1 and T2.

In the final step, a linear regression was performed in order to gauge which of the independent variables held any predictive power in terms of health. The results are reported in Table 4 below.

Table 4 *Multiple regressions analysis with Health as dependant variable*

Model		Unstandardised Coefficients		Standardised Coefficients	t	p	F	R	R ²	ΔR ²
		Beta (β)	SE	Beta (β)						
1	Constant	2.06	0.09		23.78	0.00*	4.77	0.20	0.04	0.04
	Communication with Manager	0.02	0.04	0.04	0.47	0.64				
	Feedback	0.09	0.05	0.17	1.91	0.06				
2	Constant	2.32	0.21		11.20	0.00*	2.40	0.24	0.06	0.02
	Communication with Manager	-0.00	0.04	-0.01	-0.08	0.00*				
	Feedback	0.09	0.05	0.16	1.81	0.07				
	Interpersonal Conflict	-0.07	0.03	-0.15	-2.19	0.03*				
	Powerlessness	0.01	0.03	0.02	0.28	0.78				
3	Constant	2.54	0.24		10.74	0.00*	1.83	0.27	0.08	0.02
	Communication with Manager	-0.01	0.04	-0.03	-0.29	0.77				
	Feedback	0.07	0.05	0.13	1.44	0.15				
	Interpersonal Conflict	-0.06	0.03	-0.14	-1.87	0.06				
	Powerlessness	0.02	0.04	0.04	0.59	0.56				
	Job Insecurity - Quantitative	-0.01	0.03	-0.02	-0.22	0.83				
	Job Insecurity - Qualitative	-0.07	0.04	-0.13	-1.69	0.09				
4	Constant	2.54	0.25		10.01	0.00*	1.08	0.29	0.08	0.00
	Communication with Manager	0.02	0.05	0.04	0.37	0.71				
	Feedback	0.06	0.05	0.11	1.19	0.24				
	Interpersonal Conflict	-0.07	0.03	-0.14	-1.92	0.06				
	Powerlessness	0.03	0.04	0.07	0.90	0.37				
	Job Insecurity - Quantitative	-0.01	0.03	-0.02	-0.23	0.82				
	Job Insecurity - Qualitative	-0.08	0.04	-0.15	-1.94	0.05*				
	Social Support - Supervisor	-0.08	0.05	-0.17	-1.42	0.16				
	Social Support – Co-workers	0.06	0.05	0.12	1.20	0.23				

Table 4 continued

Model	Unstandardised Coefficients		Standardised Coefficients	t	p	F	R	R ²	ΔR ²
	Beta (β)	SE	Beta (β)						
5	Constant	2.37	0.25						
	Communication with Manager	0.06	0.05	0.14	1.15	0.25			
	Feedback	0.04	0.05	0.08	0.85	0.40			
	Interpersonal Conflict	-0.07	0.03	-0.14	-1.91	0.05*			
	Powerlessness	0.04	0.04	0.08	1.10	0.27			
	Job Insecurity - Quantitative	0.00	0.03	0.01	0.06	0.95			
	Job Insecurity - Qualitative	-0.07	0.04	-0.14	-1.79	0.08			
	Social Support - Supervisor	-0.05	0.06	-0.12	-0.90	-0.37			
	Social Support – Co-workers	0.08	0.06	0.16	1.41	0.16			
	Communication with Manager x Social Support – Supervisor	-0.09	0.05	-0.26	-1.82	0.07			
	Communication with Manager x Social Support – Co-workers	-0.00	0.06	-0.00	-0.02	0.98			
	Feedback x Social Support – Supervisor	0.03	0.07	0.07	0.49	0.62			
	Feedback x Social Support – Co-workers	-0.10	0.08	-0.20	-1,29	0.20			
	Powerlessness x Social Support – Supervisor	-0.06	0.04	-0.15	-1.44	0.15			
	Powerlessness x Social Support – So-workers	0.02	0.05	0.04	0.41	0.69			
	Interpersonal Conflict x Social Support – Supervisor	-0.02	0.04	-0.04	0.40	0.69			
	Interpersonal Conflict x Social Support – Co-workers	0.00	0.05	-0.00	-0.01	0.99			

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

Table 4 indicates that when only Communication with the Manager and Feedback were considered, no direct significant contribution could be established between the latter variables and Health.

In step 2, when Powerlessness and Interpersonal Conflict were added, Communication with the Manager and Interpersonal Conflict proved to be statistically significant predictors of Health. These variables explained 6% of the variance in T2 Health ($F = 2,40, p \leq 0,05$).

At step 3, when Job Insecurity (Quantitative and Qualitative) was added, again neither made a significant contribution towards Health. Job insecurity – Qualitative proved to have a significant

contribution towards Health in step 4, when the two additional dimensions of Social Support were considered ($F = 1,08$, $p \leq 0,05$). In Step 5, when considering all the variables and their interaction terms, only Interpersonal Conflict showed a statistically significant relation in predicting Health, of small practical significance ($f^2_A = 0,02$). All variables considered predicted 15% of the variance in Health over time ($F = 2,21$, $p \leq 0,05$). In investigating the moderating effect of Social Support (Supervisor and Co-worker) and the other variables, no significant effect could be found in predicting health.

DISCUSSION

The aim of the current study was firstly to investigate the relationships between communication with the manager, feedback, powerlessness, interpersonal conflict, job insecurity (quantitative and qualitative), and health. A further objective included investigating the moderating effect of social support (supervisor and co-worker) on the relation between communication with the manager, feedback, powerlessness, interpersonal conflict, job insecurity (quantitative and qualitative) on the one hand, and health on the other.

Most of the measuring instruments proved to be reliable in this study, with the exception of the qualitative job insecurity dimension, which was a bit lower but still acceptable (Nunnally & Bernstein, 1994). The findings of the reliability of the scales specifically in South Africa presents a distinctive contribution, since most of the measurement scales were sourced from international research.

Results indicated that employees experiencing good communication from the manager are also likely to receive good feedback (Colquitt, 2001; Kernan & Hanges, 2002; Renn & Fedor, 2001). Of course, the distinction between communication with the manager and feedback is to some extent academic, but the found relationship with other variables in the study indicated the two construct are stronger when used together to enhance positive work experiences in the workplace. The results further indicated that good communication increases well-being and health (specifically mental health), in line with Ahmed *et al.* (2010); Liljegren and Ekberg,

(2009), and van Dierendonck, Haynes, Borrill and Stride, (2004). The same relation is, however, not evident for feedback. Therefore, support for hypothesis 1 in this study is found.

As could be expected, the relationship between feelings of absence of control over work process and interpersonal conflict were positively linked, indicating that should an individual experience feelings of powerlessness, interpersonal conflicts are also likely to increase, and vice versa (Skogstad, Matthiesen & Einarsen, 2007). Results indicate that health, and general well-being are negatively affected by feelings of powerlessness (Ambrose *et al.*, 2002; Spector, 2007) – a finding confirmed by the results, and therefore hypothesis 2. As interpersonal conflicts increase, health will be deteriorating over time as confirmed by Giebels and Janssen (2005); Lazuras *et al.* (2009) and Spector, (1987).

The dimensions of job insecurity were positively related to each other, which could be expected because of the overlap of the constructs. The results for job insecurity further indicated that increased levels of job insecurity (quantitative and qualitative) affect health negatively, which confirmed hypothesis 3. These findings correspond with those of Probst (2002) and Siegrist (2000) who found that when perceptions of job insecurity exist, the resultant strain increases individuals' vulnerability to illness, which may become evident at the physiological, behavioural or psychological level, or any combination of these. Further studies in terms of the relation with job insecurity and health found again that higher burnout scores exist among the job insecure (e.g. Dekker & Schaufeli, 1995; De Witte, 2000). Research also shows that general indicators of psychological well-being are worse amongst worker experiencing job insecurity (e.g. Botha, 2006; Goslinga, 2003; Sauer, 2003; Snoer, 2005; Sverke, Hellgren, & Näswall, 2002; Van Schalkwyk, 2005; Van Zyl, 2005).

Social support from the supervisor and co-worker was strongly correlated and both dimensions were also positively related to health. Better psychological well-being as a result of positive perceptions of social support in the workplace has also been noted by Limbert, (2004). The last hypothesis in this study could not be accepted, as the buffering effect of social support that has been confirmed in previous studies (Bliese & Castro, 2000; Joiner, 2007; Kaul & Lakey, 2003; Kirmeyer & Dougherty, 1988) was not found here.

Although many variables have been considered in this study, it was seen that only interpersonal conflict was a significant predictor of health, over time. The contribution in this instance would be that interpersonal conflict experienced, although social support is received from the supervisor and co-workers, did not buffer the negative effects on health for the individual in the long run. It is clear that if control over conflicts can be regained, it may play a role in mitigating the detrimental effects of conflict when it does transpire. Therefore, fostering a sense of control in employees' relationships with one another and supervisors may increase control perceptions should a conflict arise (Eatough, 2010).

RECOMMENDATIONS AND LIMITATIONS

The results from this study may give organisational management the opportunity to focus on specific interventions in order to enhance good health in the company.

Interpersonal skills for managers (e.g. listening, goal setting, and clarifying expectations), management of conflicts, planning and conducting meetings, creating team enabling environments and team building and endorsing change (e.g. empowering individuals to perform) are becoming more and more important in today's workplace. The results of this study clearly indicated that when individuals receive clear communication from the manager, they are also likely to experience quality feedback and experience better health (Bambacas & Patrickson, 2008; Hynes, 2008; Van Dierendonck, Haynes, Borrill & Stride, 2004).

Feelings of powerlessness and interpersonal conflicts in the workplace, as a result of job insecurity or the lack of communication and feedback, can be addressed by organisations by involving employees in decision-making processes, being honest and fair, and making available opportunities to update skills and competencies to widen the employability status of employees. Increasing the consistent interaction with management and co-workers, as well as access to each other through regular communication, e-mails, open-door policies, clarity regarding roles and accountabilities, and enabling participation in decision-making, can alleviate the feelings of unpredictability and lack of control over situations (Eatough, 2010).

Coping strategy and communication skills training can be done in order to remedy the feelings of powerlessness that are created by job insecurity (Ambrose *et al.*, 2002; Spector, 2007), and also to regain control and increase health and well-being (De Dreu & Beersma, 2005).

A limitation in this study was that although many researchers have proved the ‘buffering’ effect of social support from the supervisor and co-workers against bad health (Joiner, 2007; Kaul & Lakey, 2003; Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2007); this was not found in this study. This finding is especially worrisome, considering that it was interpersonal conflict that predicted health over time.

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CHAPTER 6

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

The purpose of this chapter is to provide conclusions regarding the results of the empirical studies of the four research articles. Conclusions are drawn with regard to the set research objectives. Furthermore, limitations of the study are discussed. Finally, recommendations for the organisation are made and research opportunities that emanate from this research are presented.

6.1 CONCLUSIONS

Article 1: The psychometric properties of a measure and biographical correlates of job insecurity

The main aim of this article was to assess the psychometric properties of a measure of quantitative and qualitative job insecurity for employees in a South African based gold mining company. The total sample reached an acceptable level of reliability for the Job Insecurity - qualitative scale. For the Job insecurity – quantitative scale the African languages group's results was lower. The mean inter-item correlations of the quantitative job insecurity scale consistently showed higher correlations than the qualitative job insecurity scale. Based on the results of this article, the following conclusions could be made:

- Research hypothesis 1: The qualitative and quantitative scales of job insecurity are equivalent measuring instruments for employees from different language groups in a selected gold mining company in South Africa.

Construct equivalence was confirmed for quantitative job insecurity for all language groups in the study, e.g. Afrikaans, English and indigenous African language speaking employees. The qualitative job insecurity scale indicates lower equivalence for the African languages group. The critical value of 0,90 as indicated by Van de Vijver and Poortinga (1994) was not reached, but did surpass that suggested by Ten Berge (1986). Further investigation into the item bias of the

qualitative job insecurity scale for African languages indicated the problematic items. The phenomenon of non-uniform bias can be explained when both the main effect of culture and the interaction of level of insecurity are not significant (Mellenbergh, 1982; Van de Vijver & Leung, 1997). On a more global level the quantitative scale proved to be more equivalent; i.e. that it measures *the same* and *the same construct* across the different groups of employees.

- Research hypothesis 2: Job insecurity, as measured by the two-dimensional construct (qualitative and quantitative job insecurity) presents with acceptable levels of internal consistency for each of the subscales.

It is evident from the results that the mean score tends to be higher for the quantitative JI scales than for the qualitative JI scales. The internal consistencies of the quantitative JI scale for all groups are acceptable, according to the guideline of $\alpha \geq 0,70$ (Nunnally & Bernstein, 1994). It was found that, especially for the African languages group, the reliability of the scale is somewhat low ($\alpha = 0,63$). In general, these results confirm research aim 2, that the subscales present with sufficient reliability and consistency across language groups. However, the results for the qualitative JI scale need to be interpreted with caution.

- Research hypothesis 3: Men experience higher levels of job insecurity than women.

The general finding on the experiencing of job insecurity by different genders showed that males reported higher levels of qualitative job insecurity than females. In the South African context the Employment Equity Act (1998) and the Mining Charter (2010) seeks to enhance female participation in the mining sector. Therefore, confirming the hypothesis that South African males will experience higher levels of job insecurity.

- Research hypothesis 4: Single people experience higher levels of job insecurity than people who are married or living together.

In general, it was concluded that the factor of marital status has no influence in terms of experiences of the different components of insecurity.

- Research hypothesis 5: Employees with a higher level of education experience less job insecurity than employees with a lower level of qualification.

For the above-mentioned research aims it was concluded that again the factor of level of education did not influence the experiences of different components of job insecurity. The reason in this instance can be that most respondents specified a high level of education, which explains the lack of feelings of job insecurity, taking into account the expectation that lower skilled employees would experience greater levels of job insecurity.

- Research hypothesis 6: White (traditionally English or Afrikaans speaking) employees experience higher levels of job insecurity than black (traditionally African language-speaking) employees.

It was found that race did not influence the experiences of different components of job insecurity. The reasons for the hypotheses not supported could be explained by the following: firstly, the actual value that an individual perceives or links to his or her background has an influence on the feeling of job insecurity (Näswall & De Witte, 2003). Secondly, background characteristic or variables have been defined as predictors of job insecurity, but they can also function as moderators. Thirdly, different language groups can interpret item content differently and therefore change the importance that a person attaches to the variable.

Article 2: Job insecurity, work stress and safety performance in a multi-national gold mining company

The main aim of this article was to determine the relationship of work stress and job insecurity with unsafe workplace behaviour. In terms of the reliability of the subscales it was found that Role Ambiguity, Role Conflict, Role Overload – Quantitative, Role Overload – Qualitative, and Job Insecurity – Qualitative showed lower than prescribed reliability scores ($\alpha = 0,73$). However, given the exploratory nature of this investigation, values above 0,60 were deemed acceptable (Hair, Money, Samouel, & Page, 2007; Konting, 2005). The two subscales (Qualitative and Quantitative Role Overload) were combined into a Total Role Overload Scale. Because of the

very low alpha value of the Coping – Symptom Reduction variable ($\alpha = 0,51$), it was decided to exclude it from any further analysis. Based on the results of this article, the following conclusions can be made:

- Research hypothesis 1: Qualitative and quantitative aspects of job insecurity, together with work stress (i.e. role conflict, ambiguity and role overload), will be positively related to unsafe behaviour of employees from a selected gold mining company based in South Africa.

Reliability results for the measurements used in this study are mostly from international literature and exploring their reliability in the South African context presents a unique contribution. The outcomes showed that most of the measuring instruments used for the study are reliable. The sub-dimensions of quantitative and qualitative role overload were collapsed into a total overload dimension to increase the reliability of the role overload dimension. The further use of the measures of role ambiguity, conflict, and qualitative job insecurity could be warranted, since these measures have not been used widely in South Africa; these reliability results are also comparable to previous South African results (Masia & Pienaar, 2011; Van Wyk & Pienaar, 2008; Willemse & Pienaar, 2008). Due to a very low reliability score, the subscale measure of coping – symptom reduction was omitted from any further analysis. The same was found by Guppy, Edwards, Brough, Peters-Bean, Scale, and Short, (2004); Fourie, (2005); Näswall, Baraldi, Richter, Hellgren, and Sverke, (2006), who proposed that the scale has some inherent problems and should be used with great caution, or not at all.

Employees experiencing role conflict are likely to experience a lack of role clarity and role overload and being unsafe at work. When experiencing role ambiguity and role overload, the stressors of role overload, job (quantitative and qualitative) insecurity and not being safe at work will increase. In this case there will also be an inclination to use the coping strategy of avoidance and a reduced amount of the coping strategies, changing the situation and/or accommodation. The qualitative and quantitative dimensions of job insecurity were strongly related and also displayed positive relations with all the role stress dimensions (role conflict, ambiguity and overload). Further results showed that two dimensions of stress (role ambiguity and role

conflict), quantitative job insecurity and the coping inclination for avoidance played a role in predicting the safety compliance behaviour.

- Research hypothesis 2: Coping will moderate the influence of role stress and job insecurity on worker safety behaviour.

There was a moderating effect in terms of high role overload and the coping mechanism of avoidance. When an individual experiences low or high role overload, there is a marked increase in unsafe behaviours for the individuals who make use of high avoidance coping strategy. Findings confirm those of Jex, Bliese, Buzzell, and Primeau, (2001); Dillinger, Weigmann, and Taneja, (2003) and Zohar (2002) that the use of avoidance coping may increase the stressor of work overload and has a negative impact on safety behaviours.

Article 3: Job stressors, employability, job satisfaction and turnover intention – A longitudinal analysis

The main aim of this article was to review job stressors (task completion ambiguity, task quality ambiguity, competency demands and employability perceptions (internal and external)) conceptually. Empirically, the investigation also focused on how job satisfaction may play a mediating role between these and employee turnover intentions in a multi-national African mining organisation over time. All the measures of variables showed acceptable reliability, specifically over time. These findings authenticate international findings with regards to task quality ambiguity and task completion ambiguity (Näswall et al., 2006), competency demands (Hellgren, Sjöberg, & Sverke, 1997), employability (external & internal) (Näswall et al., 2006; Van der Vliet & Hellgren, 2002), job satisfaction (Hellgren et al., 1997; Näswall et al., 2006), and turnover intention (Näswall et al., 2006; Sjöberg & Sverke, 2000).

Based on the results of this article, the following conclusions can be made:

- Research hypothesis 1: There will be a negative relationship between task completion ambiguity, task quality ambiguity and job satisfaction, and there will be a positive

relationship between competency demands, employability perceptions (internal and external) and job satisfaction.

The stressors (completion ambiguity and task quality ambiguity) showed strong associations with each other (Hellgren, Sverke, & Näswall, 2008), and also with job satisfaction, work competency demands, employability (internal and external). Internal and external employability display a positive relation which is to be expected because of the overlap of the construct, in line with what has been found by Kalyal and Saha (2008).

- Research hypothesis 2: There will be a negative relationship between job satisfaction and turnover intention.

This research aim was established with a strong negative relationship between job satisfaction and turnover intention at both time 1 and time 2. Previous studies on the relationship between job satisfaction, employability orientation and turnover intention confirmed this finding (Griffeth, Hom, & Gaertner, 2000; Lee, Carswell, & Allen, 2000; Nauta, Van Vianen, Van der Heijden, van Dam, & Willemsen, 2009; Van Dam, 2005).

- Research hypothesis 3: There will be a positive relationship between task completion ambiguity, task quality ambiguity and turnover intention and there will be a negative relationship between competency demands, employability perceptions (internal and external) and turnover intention.

Employees' turnover intention was predicted by how their experience of task completion ambiguity and task quality ambiguity was seen, over time. Competency demands correlated negatively with turnover intention, indicating that individuals' appraisal of their own abilities will influence their intention to leave or stay in the organisation. The hypothesized negative relation of employability (external or internal) with turnover intention was not found in this instance. Internal employability, however, displayed a stronger negative relation to turnover intention, indicating that for the current sample of respondents (although they felt that they are

employable) it may be more attractive to move within the same organisation than to another organisation completely.

- Research hypothesis 4: Job satisfaction will mediate the relationship between task completion ambiguity, task quality ambiguity, competency demands and employability perceptions (internal and external) on the one hand and turnover intentions on the other hand.

No confirmation was found for the mediating role of job satisfaction between job stressors, competency demands and employability perceptions on the one hand and turnover intentions on the other hand.

The classic stressors (role overload, role ambiguity, and role conflict) showed to have a number of negative outcomes on work performance in previous studies (Cooper, Dewe, & O'Driscoll, 2001; Griffin, Neal, & Parker, 2007; Lambert & Lambert, 2001). This finding is echoed by the stressors (task completion ambiguity and task quality ambiguity) displaying similar outcomes in the current study.

Article 4: The influence of interpersonal work experiences and job insecurity on subsequent health

The article aims to examine the moderating effect of social support (co-worker support and supervisory support) when experiencing positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict) and job insecurity (quantitative and qualitative) on subsequent health.

All the measuring instruments used in this study were found to be reliable in terms of their use. The job insecurity qualitative dimension was a bit lower at 0,67, but still acceptable according to Nunnally and Bernstein (1994). The positive relatedness by both job insecurity subscales (quantitative and qualitative) strengthened the use of the measurement instrument in this study. Because most of these measures have been taken from the international literature, their

established reliability presents a unique contribution in the South African context. Based on the results of this article, the following conclusions can be made:

- Research hypothesis 1: There will be a positive relationship between positive interpersonal attributes (communication with the manager and feedback) and health at T1 and T2.

A positive relationship was found between employees receiving clear communication from the manager and good feedback. These results are confirmed by other investigations on these topics (Colquitt, 2001; Kernan & Hanges, 2002; Renn & Fedor, 2001). Results further indicated a positive relation between communication, feedback and health, in line with Ahmed, Shields, White, and Wilbert, (2010), Liljegren and Ekberg (2009) and van Dierendonck, Haynes, Borrill, and Stride (2004).

- Research hypothesis 2: There will be a negative relationship between negative interpersonal attributes (powerlessness and interpersonal conflict) and health at T1 and T2.

This hypothesis was confirmed in that health and general well-being were negatively affected by feelings of powerlessness (Ambrose, Seabright, & Schminke, 2002; Spector, 2007). Although limited studies have proven the negative role of interpersonal conflict on subsequent health, this study found that interpersonal conflict also negatively affected health over time.

- Research hypothesis 3: There will be a negative relationship between job insecurity (quantitative and qualitative) and mental health at T1 and T2.

In terms of the relation between job insecurity and health it was found that increased levels of job insecurity pointed to a decrease of health. Next, research also showed that common indicators of psychological well-being are lower amongst workers who experience job insecurity (e.g. Botha, 2006; Sauer, 2003; Snoer, 2005; Sverke & Goslinga, 2003; Sverke, Hellgren, & Näswall, 2002; Van Schalkwyk, 2005; Van Zyl, 2005).

- Research hypothesis 4: Social support (co-worker support and supervisory support) will moderate the relationships between positive interpersonal attributes (communication with the manager and feedback), negative interpersonal attributes (powerlessness and interpersonal conflict) and job insecurity (quantitative and qualitative) on the one hand, and health over time, on the other hand.

Previous studies did confirm the buffering effect of social support (Bliese & Castro, 2000; Joiner, 2007; Kaul & Lakey, 2003; Kirmeyer & Dougherty, 1988), but it was, however, not found in this particular study. Social support from the supervisor and co-worker were strongly correlated, and both dimensions were also positively related to health.

6.2 LIMITATIONS OF THIS RESEARCH

Although some methodological justifications could be made for the research, it does have limitations. Firstly, a sample of 12 business units within one international gold mining company was selected to partake in this study. Although data from a large number of participants across time and countries was available, the results may still be reflective of a single organisational culture. The limitations of the study are further that self-report measures were utilised, the representation of the sample was also small, compared to the available sample, and a larger and more representative group may have produced different results. A further limitation was the use of a cross-functional study design in this instance in the first two studies. Because of the on-line nature of the questionnaire and accessibility to a computer the majority of the participants were white-collar workers. Longitudinal data would also have allowed testing the stability of the measures over a period of time. Although many researchers have proved the ‘buffering’ effect of certain mediators and moderators as specified in two of the research articles, no evidence of this was found in these specific studies. Lastly the inadequate sampling of constructs, partial coverage of the construct (i.e. the use of single-item measures) and partial overlap of definitions across cultures can be noted as limitations.

6.3 CONTRIBUTIONS OF THE STUDY

6.3.1 Theoretical contributions

The literature review of this thesis contributed to the overall understanding of the phenomenon of job insecurity, its relation to other workplaces-stressors and outcomes in a South African based mining company. The four research articles attempt to provide a meaningful theoretical framework with sufficient evidence to investigate the existence of job insecurity and other workplaces stressors and relevant outcomes to the individual and organisations. The major elements of the research problem outlined in Chapter 1 are covered in each research article. The review of scientific and technical literature is relevant and current. The major theories and research on the constructs of concern are well covered.

6.3.2 Methodological contributions

The longitudinal design proved to be effective in establishing relationships, and these could be verified over time. The statistical techniques tested the research objectives thoroughly and gave the researcher the opportunity to come to definite conclusions and further recommendations.

The research design in each research article is appropriate in terms of addressing the research objectives. The objectives of the research for study one was to establish the psychometric properties of a measure of job insecurity in a selected gold mining company in South Africa. The contributions in study one are that construct equivalence was confirmed for quantitative job insecurity for all language groups. While problematic items for the qualitative job insecurity scale for African languages were indicated. It was found that males reported higher levels of qualitative job insecurity than females. Marital status, level of education and race had no influence in terms of experiences of the different components of insecurity of participants.

Study two aimed to determine the influence of job insecurity and work stress (i.e. role conflict, clarity and overload) on worker safety performance and if coping could moderate this. The exploration of the scales' reliability in the South African context presents a unique contribution. There was a moderating effect in terms of high role overload and the coping preference of

avoidance for the outcome of unsafe behavior in the workplace, which directs subsequent workplace interventions aimed at employee coping.

Study three investigated the empirical relationships between job stressors (task completion ambiguity and task quality ambiguity), competency demands, employability perceptions, job satisfaction and turnover intention, over time. The contribution of this study was the inclusion of task completion ambiguity and task quality ambiguity, which showed strong associations with job satisfaction, work competency demands, and employability (internal and external). Employees' turnover intention was predicted by how their experience of task completion ambiguity and task quality ambiguity was seen, over time. The hypothesized negative relation of employability (external or internal) with turnover intention was not found in this instance. No confirmation was found for the mediating role of job satisfaction between job stressors, competency demands and employability perceptions on the one hand and turnover intentions on the other hand.

Lastly, study four investigated if social support has a mediating effect between positive interpersonal attributes, negative interpersonal attributes, job insecurity and subsequent health. Positive findings for the relationship between employees receiving clear communication from the manager, good feedback and health were reported. It was confirmed that health and general well-being were negatively affected by feelings of powerlessness. I was also found that interpersonal conflict negatively affected health, over time. In terms of the relation between job insecurity and health it was found that increased levels of job insecurity pointed to a decrease of health. The proposed hypothesis that social support will act as a buffer was not confirmed in the study.

6.3.3 Practical contributions

The research findings and recommendation provided in each article, has proven to contribute to further research in the field of job insecurity. The academic and practical contribution to the field of industrial psychology is evident and useful. Recommendations to researchers, management and the organisation are made below.

6.4 RECOMMENDATIONS

Recommendations pertaining to the organisation used in this study, as well as recommendations for future research, are made in this section.

6.4.1 Recommendations for the organisation

The findings from the first article could be beneficial to organisations in the sense that the importance of diversity and different cultures are again highlighted, whereas the experiences of feelings of job insecurity cannot be regarded the same for different groups in the organisation. Although female participation in the workplace is encouraged, specifically in the mining industry, the role of the white male cannot be downplayed by organisations. A representative sample of the working population (e.g. blue collar workers) in the mining and other industries needs to be surveyed in order to institute representative norms for job insecurity. The further analysis of antecedents of job insecurity and the consequences for individuals in organisations and the influence of moderating variables can lead organisational management to implement mitigating measures to combat the consequences of job insecurity.

Recommendations for organisations to alleviate the impact of role stressors and job insecurity could, for example, be to pay more attention to the clarifying of roles and responsibilities and also secure the insecure environment by communicating through managers and confirming career plans for employees. The strengthening of individual coping strategies by offering support through wellness programs can have positive effects on safety compliance behaviours. The investigation of organisations to find relevant mediators that may be amenable to training or other organisational intervention to ensure skilled employees, are retained.

The inclusion of the stressors can add much value to organisations if they understand the impact of these stressors on performance, motivation and job satisfaction in the working life. Being satisfied at work will allow employees to feel that they are adequately competent, able to judge the amount of work that is necessary, as well as able to determine when tasks are completed. Recommendations in this instance can be that organisations can focus more on managers'

interpersonal skills (e.g. listening, goal setting, and clarifying expectations), handling of conflict, being involved in decision-making, running meetings, promoting team building and change (e.g. empowering).

Communication is becoming more and more important in the fast changing world of work and as indicated in this study, when individuals receive clear communication from the manager, they are also likely to receive quality feedback and as a result deliver more positive work performances and show better health and well-being (Bambacas & Patrickson, 2008; Hynes, 2008; van Dierendonck, Haynes, Borrill, & Stride, 2004). In order to empower employees, organisations should - through reliable communication structures and giving feedback - be able to alleviate the negative feelings of powerlessness that are created by job insecurity (Ambrose, et al., 2002; Spector, 2007) and again to reclaim control and increase health (De Dreu & Beersma, 2005).

6.4.2 Recommendations for future research

Future research regarding job insecurity should specifically aim at validating the job insecurity scales for different cultural groups and testing the understanding of specific constructs. Clarification of job-related elements can be taken into consideration when exploring the quantitative measures of job insecurity specifically. The development of a reliable and valid measurement instrument of job insecurity will ensure the true understanding of the prevalence of job insecurity in South Africa.

Because the cross-sectional design did not represent the optimal way of studying coping processes in study two, it is recommended that future research for longitudinal design is included to study the effect over time. Future investigations may look at a wider, multi-item scale to investigate safety compliance in order to accommodate the specific cultures combined in the organisation. The same recommendations can be made for the quantitative role overload scale, perhaps to include more items in the questionnaire to increase the reliability of this measure.

The third study represents the first attempt in South African literature to investigate if stressors in the workplace correlated with other outcomes by means of a longitudinal approach. This was specifically proposed by Hellgren et al. (2008) as further research should be done with regards to the stressors. Good reliabilities were found for the variables, confirming results of previous investigations. These results confirm the worth of investigating the stressors in addition to the classic stressors in the workplace. The measurement over time confirmed the prolonged effect of the stressors as leading to a negative outcome for the individual and the organisation. Further investigation into the role of the stressors in the work environment, specifically in South Africa, is proposed.

This chapter provided conclusions regarding the results of the empirical studies of the four independent articles that formed part of this study. Conclusions were formed with regard to the research objectives that were stated for each article. Limitations were stated and discussed. Finally, recommendations for the organisation were made and recommendations for future research were presented.

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