

WORK ENGAGEMENT AND PSYCHOLOGICAL CAPITAL IN A SOUTH AFRICAN PLATINUM MINING COMPANY

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Triangle Campus of the North-West University

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PREFACE AND DECLARATION

The article format was chosen for the current study. The researcher, Joe Palo, conducted the research and wrote the manuscripts. Prof. S. (Ian) Rothmann acted as the promoter for the study. Three manuscripts will be submitted for publication in the following journals:

Manuscript 1: Journal of Psychology in Africa.

Manuscript 2: South African Journal of Industrial Psychology.

Manuscript 3: South African Journal of Economic and Management Sciences.

The editorial style follows the format prescribed by the Publication Manual (6th edition) of the American Psychological Association (APA). 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 which report on actual results.

I declare that “Work engagement and psychological capital in a South African platinum mining company” is my work and that all the sources that I have used or cited are indicated and acknowledged using complete references.

DEDICATION

I dedicate this work to my beloved parents, Dintwe Palo and Nomathemba Palo, who, despite not having had the opportunity to acquire any academic qualifications of high standards themselves, always encouraged and supported their children to study and equip themselves with education to bring about change in their lives and those of others. I thank God for you!

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“Every worthwhile accomplishment has a price tag attached to it. The question is always whether you are willing to pay the price to attain it – in hard work, sacrifice, patience, faith, and endurance” – John C. Maxwell

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DECLARATION OF LANGUAGE EDITOR



17 November 2015

I, Ms Cecilia van der Walt, hereby confirm that I took care of the editing of the thesis of Mr Joe Palo titled Work Engagement and Psychological Capital in a South African Platinum Mining Company.

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TABLE OF CONTENTS

	Page
Preface and declarations	i
Dedication	ii
Acknowledgements	iii
Declaration of the language editor	iv
Table of contents	v
List of figures	vii
List of tables	viii
Summary	ix
CHAPTER 1: INTRODUCTION	1
1.1 Background and motivation for the research	1
1.2 Problem statement	14
1.3 Aims of the research	16
1.3.1 General research aim	16
1.3.2 Specific research objectives	16
1.4 Research method	18
Ethical considerations	28
Chapter layout	28
Chapter summary	29
References	30
CHAPTER 2: MANUSCRIPT 1	39
CHAPTER 3: MANUSCRIPT 2	63
CHAPTER 4: MANUSCRIPT 3	98

TABLE OF CONTENTS (CONTINUED)

	Page
CHAPTER 5: CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS	
5.1	Introduction 129
5.2	Conclusions 130
5.3	Contributions of the study 133
5.4	Limitations of the study 134
5.5	Recommendations 135
5.5.1	Recommendations for the organisation 135
5.5.2	Recommendations for future research 136
	References 138

LIST OF FIGURES

Figure	Description	Page
Chapter 1		
1	Proposed research model	16
2	The division of work at the platinum organisation	19
Manuscript 1		
1	The structural model (standardised solutions with standard errors)	54
Manuscript 2		
	The structural model (standardised solutions with standard errors)	84
Manuscript 3		
1	The WLSMV estimates for the hypothesised model of intention to leave	117

LIST OF TABLES

Table	Description	Page
Manuscript 1		
Table 1	Characteristics of participants	46
Table 2	Fit Statistics of Competing Measurement Models	51
Table 3	Reliability Coefficients and Correlations of Scales (<i>N</i> = 564)	52
Table 4	Standardised Regression Coefficients of Task and Relational Antecedents of Work Engagements	53
Manuscript 2		
Table 1	Characteristics of participants	76
Table 2	Fit Statistics of Competing Measurement Models	80
Table 3	Reliability Coefficients and Correlations of Scales (<i>N</i> = 564)	81
Table 4	Standardised Regression Coefficients of the variables	83
Table 5	Indirect Effects of Supervisor Behaviour on Performance	85
Manuscript 3		
Table 1	Characteristics of participants	108
Table 2	Fit Statistics of Competing Measurement Models	113
Table 3	Reliability Coefficients and Correlations of Scales	114
Table 4	Standardised Regression Coefficient of Supervisor Support, Co-worker Support, Organisational Support, Psychological Capital, and Intentions to Leave	116
Table 5	Indirect Effects of Supervisor Support, Co-worker Support, and Organisational Support on Intention to Leave	118

SUMMARY

Title: Work engagement and psychological capital in a South African platinum mining company

Keywords: Work engagement, perceived supervisor support, perceived co-worker support, perceived organisational support, job design, task characteristics, psychological capital, intention to leave, and job performance.

The business landscape is generally in a continuous state of flux thereby obliging organisations to constantly act swiftly and decisively to ensure their sustained competitive advantage. Patently, human capital is increasingly being viewed as a resource at the organisation's disposal that could be leveraged to achieve desired organisational outcomes. It is however also true that a determined social climate needs to be cultivated in the work environment for individuals to be persuaded to devote themselves effectively to their tasks to achieve organisational objectives.

Over the years, the mining industry has been viewed as a risky working environment engendered by the inherent nature of the job. There has also been lingering perceptions among individuals that mining is a dangerous occupation that is characterised by a lack of job resources highlighted by aspects such as poor job design, unpleasant working conditions, and lack of participative decision-making. Such perceptions have indirectly hampered persistent efforts to attract talented individuals in requisite numbers and stalled endeavours to retain highly sought after skills. Invariably, the recent historic and protracted industrial upheavals that beset the industry in the form of violent strikes that involved management, organised labour and government have further exacerbated the situation.

In an attempt to curb operational costs and maintain some of their profitable operations, mining organisations have resorted to drastic organisational restructuring measures, which are often accompanied by downsizing of the workforce and closing down of ailing mine operations, measures which are ostensibly aimed at addressing short-term costs challenges. However, this approach seems not to be a sustainable *panacea* to the economic woes facing the mining industry as it largely ignores the socio-contextual factors in the environment, which could be

the answer to these recurrent challenges. Therefore, these endeavours by management may in fact remain short-term economic interventions with negative long-term consequences.

Given the key role played by this sector in the South African economy, this untenable situation does not auger well for the long-term future of mining organisations and should be addressed expeditiously to salvage the downward spiral in performance in this industry. It is thus against this background that this study was undertaken. The study aimed to investigate the relationship between perceived supervisor support, co-worker support, organisational support, job design, and task characteristics on the one hand, and psychological capital, work engagement, intention to leave, and job performance of employees in a platinum mining organisation in South Africa, on the other. A cross-sectional survey design was used to gather data regarding all these constructs as experienced by employees. A stratified random sample ($n = 564$) of employees from a platinum mining company took part in this study. The measuring instruments used were the adapted version of the Engagement Scale, Supervisory Support Scale, Job Diagnostic Survey, Psychological Capital Questionnaire, Job Performance Scale, Survey of Perceived Organisational Support, Turnover Intention Scale, and a biographical questionnaire. The statistical analyses were carried out using Mplus version 7.31.

The results of the first study showed that task characteristics, perceived supervisor support, and co-worker support were positively related to work engagement. More specifically, the two dimensions of task characteristics (i.e. task identity and task significance) contributed mostly to work engagement relative to the relational context (i.e. perceived supervisor support for employee autonomy, competence and relatedness satisfaction, and co-worker support). Notwithstanding, the relational context is still crucial in the work environment, in particular among lower-level employees who value respect and civility in the workplace. These results accentuate the fact that when employees experience their work tasks to be imbued with significance and identity, they might feel obliged to reciprocate by showing higher levels of engagement.

The results of the second study showed that supervisor support and employees' level of psychological capital is positively related to employees' job performance. Psychological capital also mediated the relationship between supervisor support (for employee autonomy, competence and relatedness satisfaction) and employees' job performance. On its own, supervisor support showed a small direct effect on employees' job performance. These results

indicate that supervisor support is vital insofar as it enhances employees' level of psychological capital (i.e. hope, optimism, resilience, and self-efficacy), and, in turn, improves their performance.

The third study showed that organisational support had a strong positive impact on psychological capital (i.e. hope, optimism, resilience, and self-efficacy) and negative relations with intention to leave. Psychological capital played no mediating role in a relationship between organisational climate and intention to leave. Of significance in this study is that a positive social climate at work will likely encourage employees to stay on and it can even serve as an effective recruitment strategy to attract employees to the organisation.

Recommendations for future research were made.

CHAPTER 1

INTRODUCTION

This thesis investigates work engagement and psychological capital in a platinum mining organisation in South Africa. More specifically, it focuses on perceived supervisor support, perceived co-worker support, perceived organisational support, task characteristics, psychological capital, work engagement, intention to leave, and job performance.

The current chapter delineates the background and motivation of the study as well as the problem statement. Aims of the research, research methods and a chapter layout are also presented.

1.1 BACKGROUND AND MOTIVATION FOR THE RESEARCH

The dynamics in the business environment constantly challenge organisations to align themselves with the developments on the economic, technological and socio-political fronts. In the current world of business, it is crucial to gain a competitive advantage to outperform the competition. Traditionally, a competitive advantage for businesses was related to developing and marketing unique products and services for different customer segments, and selling these at relatively low prices to stimulate demand and gain market share (Thompson & Strickland, 2008). However, the ability to effectively and efficiently access and use information has now become a significant source of competitive advantage within many modern industries (Lu & Ramamurthy, 2011). In the place of huge conventional organisational structures that relied heavily on cost-control processes, modern-day organisations devote their time to the management of human capital. More specifically, new organisations expect their employees to show high commitment and dedication in the manner they approach their tasks (Bakker & Leiter, 2010).

Various factors, including the changing world of work, technological advancement and globalisation have brought the importance of employees' job attitudes within organisations into sharp focus (Nicolaidis & Katsaros, 2010). This is particularly true considering that organisational survival in this unpredictable business environment depends, amongst other factors, on the organisation's ability to foster engagement and commitment among its

employees thereby ensuring that needs of recipients of products and services are constantly being met (Olivier & Rothmann, 2007). In the same vein, Wright (2003) argues that maintaining a healthy employees' well-being (i.e. happiness, health, and engagement), leads to desired outcomes for the organisation. Consequently, it makes sense to consider attitudes that would foster engagement in the workplace given that recent studies have suggested that enhanced work engagement is positively related to improved task performance, contextual performance and individual well-being (Christian, Garza, & Slaughter 2011; Hakanen & Schaufeli 2012; Soane, 2013). Organisations need to stimulate their workforce and harness their "hearts and minds" to ensure that they perform at their best, while also ensuring that key skills are retained in the long term. Leiter and Bakker (2010) posit that one way of achieving this ideal is through enhancement of employees' engagement.

The mining sector is an important target for the study of work engagement and psychological capital for a number of reasons: Firstly, the mining industry employs a large number of the population, for example, in 2010 alone the sector employed a workforce of around 500 000 individuals with an average earning of R74 million per annum. The mining sector plays a pivotal role in the South African economy and makes a strong contribution to the gross domestic product (GDP) (Statistics South Africa, 2010). Secondly, South African mining occupations expose employees to physical hazards due to the nature of the environment they work in (e.g. heavy noise, poor illuminations, and noxious gases) (Paul & Maiti, 2005). Furthermore, the mining environment has also been identified as the most strenuous of all industries and abounds with unpleasant working conditions (Khulumani Support Group, 2006). Thirdly, in a changing world of business employees are challenged to be more committed to their jobs despite evident lack job security and career opportunities (Maslach, Schaufeli, & Leiter, 2001). This situation emanates from globalisation pressures which prescribe exceptional performance by every business even with fewer resources. Calitz's (2004) research endorse these findings by revealing that the mining industry involves various job demands that expose employees to hazardous underground conditions and offer little by way of job resources (e.g. task variety, and participation in decision making). In light of the preceding arguments, it becomes apparent that work engagement and psychological capital in the mining environment are indeed important focus areas for research and intervention. Clearly, to maintain sustained performance and reduced employee turnover, management would need to focus on enhancing aspects of the job that would result in employees feeling hopeful, optimistic, resilient, competent, and engaged in their work.

Work Engagement

Various factors contributed to an interest in work engagement. Firstly, Kahn (1990) conceptualised personal engagement in work roles and identified the psychological conditions and antecedents thereof. May, Gilson, and Harter (2004) and Olivier and Rothmann (2007) tested structural models of work engagement based on the personal engagement model of Kahn (1990). Secondly, a shift in focus in psychology from investigating human weaknesses, malfunctioning and damage to interest in human strengths, happiness and optimal functioning (Rothmann, 2003; Seligman & Csikszentmihalyi, 2000; Strümpfer, 2003) brought an allurements to the study of engagement. Thirdly, Seligman (2012) considered the study and advancement of human flourishing as vital goals of psychology and suggested various dimensions of flourishing, namely engagement, meaning, positive emotions, accomplishment and positive relations. As a component of flourishing, engagement evokes individuals to pursue fulfilment by exerting their strengths. Fourth, engagement demonstrates the potential of becoming the “new best practice” human resources management (HRM) approach, with the prospects of “high engagement HRM” becoming the dominant discourse within mainstream HRM (Truss, Shantz, Soane, Alfes, & Delbridge, 2013, p. 2661). In this manner, engagement can be mobilised to enhance individual and organisational performance.

Several researchers have presented definitions of engagement, ranging from the expression of an employee’s preferred self (Kahn, 1990), to a positive antithesis of burnout (Maslach et al., 2001), and lately to a conglomerate of several attitudes and behavioural constructs (Macey & Schneider, 2008). To be able to manage engagement at work and assess its efficacy, a comprehensive definition and measurement of the construct is needed (Ferguson, 2007). Macey and Schneider (2008) offered three approaches to engagement, namely state, trait, and behavioural engagement. State engagement, can be defined from two perspectives, namely engagement as an extension of the self to a role (Kahn, 1990), and employees’ work activities as a reference for engagement (Bakker, Schaufeli, Leiter, & Taris, 2008).

Engagement is defined as the “harnessing of organisational members selves to their work role by which they employ and express themselves physically, cognitively, and emotionally during role performance” Kahn (1990, p. 694). Employees that are engaged put much effort into their work because they identify with it. Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002) define work engagement as a positive, fulfilling, work-related state of mind characterised by

vigour, dedication, and absorption. Vigour shows the individual's readiness to expend effort in their work and exhibit zeal and tenacity in carrying out tasks (Schaufeli & Bakker, 2004). Dedication refers to a strong identification with one's work and encompasses feelings of enthusiasm, inspiration, pride, and challenge. Absorption reflects a complete immersion in one's work as a result of enjoyment in doing the job (Schaufeli & Bakker, 2004).

The common thread among definitions suggested by researchers is that they primarily distinguish among three components of engagement. The three components are a physical component (vigour and a positive affective state), a cognitive component (being alert at work and experiencing absorption), and an emotional component (being connected to the job and others while working and showing dedication and commitment). Kahn's (1990) definition of engagement appears to be based on a strong theoretical rationale, and recent empirical studies support the validity of his personal engagement model (e.g. May et al., 2004; Rich, LePine, & Crawford, 2010).

According to the Job Resources-Demands (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Hakanen, Schaufeli, & Ahola, 2008), the availability of resources (relative to demands) affects work engagement. The characteristics of work environments can be classified into two main broad categories: job resources and job demands (Bakker & Demerouti, 2007; Demerouti et al., 2001). Job demands are those physical, psychological, social or organisational aspects of the job that require constant physical and/or psychological effort or skill and, therefore, are linked to certain physiological and/or psychological costs (Schaufeli & Bakker, 2004). Job resources are the physical, psychological, social or organisational aspects of the job that enable employees to attain their work-related goals, mitigate job demands and the accompanying physiological costs, and augment personal growth and development (Bakker & Demerouti, 2007; Hakanen, Bakker, & Schaufeli, 2006). Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) broadened the JD-R model by integrating psychological resources into the model.

Psychological Capital

Psychological capital (or PsyCap) is defined as "an individual's positive psychological state of development that is characterised by: (1) having confidence (self-efficacy) to take on challenging tasks and put in the necessary effort to succeed at it; (2) making positive attributions

(optimism) about succeeding now and in the future; (3) persevering towards goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success” ((Luthans, Youssef, & Avolio, 2007, p. 3). The construct of PsyCap is operationalised by distinguishing it from other known aspects of human capital (what you know in terms of knowledge, skills, abilities, and experience), social capital (whom you know, including one’s network of relationships), and financial capital (what you have in terms of money, and other material possessions) (Luthans, Luthans, & Luthans, 2004).

PsyCap is contingent upon theoretical frameworks such as social cognitive theory (Bandura, 1986) and hope theory (Snyder, 2000). It further draws on scientific research methodologies and deductive reasoning to enhance the predictive and causality implications that it may have on aspects such as human capital development and performance outcomes in organisations. The social cognitive theory argues that self-influence regulates human behaviour. The theory further postulates that self-monitoring drives the self-regulatory mechanism. In this line, it is plausible to assume that an individual has self-control over his or her behaviour. Simultaneously, hope theory also argues that individuals’ hopeful thoughts mirror the belief that one can find some pathways to achieve the desired goals and also become motivated to follow those pathways. Therefore hope can serve to fuel emotions and well-being of individuals (Snyder, 2000).

Recent empirical research has supported PsyCap as a high-order core factor (Luthans, Avolio, Avey, & Norman, 2007) that is amenable to development (Luthans, Avey, Norman, & Combs, 2006; Luthans, Avey, & Patera, 2008) and is linked to higher levels of performance in organisations (Luthans, et al., 2007). This study has chosen PsyCap as a variable for two reasons: First, PsyCap affects a number of organisational variables such as job satisfaction (e.g. Larson & Luthans, 2006; Luthans, Norman, Avolio, & Avey, 2008), absenteeism (e.g. Avey, Patera, & West, 2006), employee well-being (e.g. Avey, Luthans, Smith, & Palmer, 2010), and employee performance (e.g. Luthans et al., 2008). Second, capacities included within psychological capital are considered to be states (i.e. they are of temporary and reversible disposition) rather than traits (i.e. characteristics that are stable over time and across situations). These states are open to development and can be further enhanced by creating a supportive work environment (Luthans et al., 2008). Avey, Luthans, and Jensen (2009) suggest that PsyCap may provide a better explanation concerning individual disparities regarding

experienced symptoms of stress, as well as job and behavioural intentions. These researchers further argue that competencies of PsyCap (i.e. self-efficacy, optimism, hope, and resilience) also facilitate work engagement.

The following section explores the antecedent and outcome variables that are to be used in this study. These variables include job resources (i.e. relational context, job design and psychological capital), intention to leave and job performance.

Antecedent Variables

Precursors of work engagement and psychological capital, namely the relational context (Kahn & Heaphy, 2014) and/or job resources (Demerouti et al., 2002), and organisational support are relevant to this study.

Job Resources

Job resources may be found at the organisational level (e.g. pay, career opportunities, job security), the interpersonal and social relations level (e.g. supervisor and co-worker support, team climate), the organisation of work level (e.g. role clarity, participation in decision making), and at the task level (e.g. task variety, task identity, task significance, autonomy, performance feedback) (Bakker & Demerouti, 2007). It is expected that job resources, such as the manner and speed with which tasks are performed, and available opportunities for professional development will evoke a sense of significance to employees. Thus employees who perceive their job resources to be sufficient will feel efficacious, important to the organisation, optimistic about the future, and consequently stay engaged in their work (Xanthopoulou et al., 2007). Previous empirical work has shown that job resources, including social support from supervisors and colleagues, and the intrinsic nature of the job (e.g. skill variety, autonomy and learning opportunities) are positively related to work engagement (Bakker et al., 2008). Mauno, Kinnunen, and Ruokolainen (2007) found that job resources predicted employee engagement better than job demands. Rothmann and Joubert (2007) found that organisational support and growth opportunities in the job were strongly related to work engagement in the mining industry.

The social context of work engagement put emphasis on the importance and relevance of relationships at the workplace. For example, collegial relationships among employees could

potentially influence social contagion by ensuring that similar responses are shared in the work environment and also impact on how they experience engagement (Bakker & Demerouti, 2008). In the opinion of Kahn and Heaphy (2014), organisations are virtually defined by social relationships that exist among people who co-ordinate their activities in executing tasks, goals, and missions. Additionally, they contend relational contexts shape personal engagement in work roles. In line with this view, this study investigates the effects of the relational context, namely perceived organisational support, supervisor support, co-worker support, and task characteristics, namely task identity and task significance on work engagement and psychological capital.

Organisational Support

The concept of perceived organisational support stems from the organisational support theory (Eisenberger, Huntington, Hutchison, & Sowa, 1986). It describes the appraisal that employees make concerning the extent to which their employer values their efforts and give due consideration to their welfare (Rhoades, Eisenberger, & Armeli, 2001). Perceived organisational support is broadly defined as a general belief that an organisation cares about and supports its employees (Rhoades & Eisenberger, 2002). Kralj and Solnet (2011) affirmed that this evaluation enables employees to determine how they will meet their socio-emotional needs at work and also to make an assessment as to the extent that the organisation can avail rewards for the extra effort that they put in.

Given the notion that an organisation serves as a source of socio-emotional resources that include respect, satisfactory wages, and medical benefits, perceived organisational support may engender the satisfaction of employees' needs for approval, esteem, and affiliation (Rothmann & Welsh, 2013). Organisational support includes the provision of necessary information to enable employees to plan their work schedules, giving access to useful training on the job, providing rewards, considering goals and values of employees, caring about employees' opinions, being readily available to assist employees when they experience problems, and not taking advantage of them (Rothmann & Welsh, 2013).

Supportive organisational climate was reported to be conducive for the development of psychological capital (Luthan, Avey, & Patera, 2008). For instance, in a supportive environment individuals are encouraged to be tenacious even when their initial efforts do not succeed at first. In this way, they are invigorated to explore other alternative approaches to

achieving the desired goal. In the same study, it was found that psychological capital mediates the relationship between a supportive climate and employee job performance. Luthans and Avolio (2003) proposed that psychological capital coupled with supportive organisational climate are essential for unleashing enhanced performance in organisations. In this context, supportive organisational climate refers to the degree to which an employee feels support from co-workers, supervisors, and other departments within the organisation – the support which is seen to be contributing to the successful execution of their duties (Luthans et al., 2008).

Kahn (1990) reported that supportive management and trusting interpersonal relationships in the work environment contribute to psychological safety where employees could be at liberty to experiment with new things without fear of consequences, should they fail. Saks (2006) also found that perceived organisational support significantly promotes work engagement. To reinforce perceived organisational support, employees have to feel that the organisation has deliberately created a supportive work environment (Eisenberger et al., 1986; Eisenberger, Cummings, Armeli, & Lynch, 1997).

The basic precept of perceived organisational support is predicated on the social exchange theory (SET). SET theorises that workers are willing to exchange the commitment and effort they put into a workplace for tangible rewards such as pay, and intangible gains such as socio-emotional benefits, including esteem, approval and caring (Rhoades et al., 2001). One of the ways in which individuals can repay their organisations' support is through their level of engagement (Saks, 2006). Therefore employees who perceive organisational support will also gravitate toward having higher feelings of engagement and invest requisite effort to contribute toward attaining organisational objectives (Kralj & Solnet, 2011).

Supervisor Support

The way first-line supervisors and senior management act and behave within the workspace define the leadership sentiment of the organisation. Specifically, they symbolise the values of the organisation, determine the flow of organisational resources, and model to employees' ways of thinking, feeling, and reacting to important events in organisational life (Schein, 1985). According to Eisenberger, Stinglhamber, Vandenberghe Sucharski, and Rhoades (2002), perceived supervisor support is defined as the extent to which employees form general impressions that their managers and supervisors recognise their effort, are supportive towards them, and are concerned about their welfare. Perceived supervisor support reflects the extent

to which the organisation and its representatives (i.e. managers and supervisors) cares about its members' well-being (Treadway et al., 2004). Gagnon and Michael (2004) identified trust, respect and supervisors' willingness to help the employee as key components of perceived supervisor support.

Psychological capital (Luthans, 2002) has mainly been linked to supervisor relations through the lens of authentic leadership (see Amunkete & Rothmann, 2015). However, Verleysen, Lambrechts, and Van Acker (2015) showed that fulfilling employees basic psychological needs for autonomy, competence and relatedness impacted their experiences of hope, optimism, self-efficacy, and resilience (i.e. psychological capital). Moreover, Fouché and Rothmann (in press) showed that supervisor support for autonomy, competence and relatedness had strong effects on work engagement. The self-determination theory (SDT; Deci & Ryan, 1985, 2000, 2011) is appropriate for explicating the effects of supervisor support on work engagement and psychological capital. The SDT's premise is that, at the workplace, interpersonal context is presumed to be autonomy-supportive when leaders and supervisors provide a meaningful rationale to their subordinates for doing certain tasks. Furthermore, they encourage subordinates to exercise choice and are less controlling, and they acknowledge employees' feelings and viewpoints. Employees who are managed by an autonomy-supportive leader tend to be more autonomously motivated and more engaged in their work than those that are not (Deci & Ryan, 2011).

Owing to a myriad of social exchanges that happen between employees and their supervisors on a regular basis, it is conjectured that employees will be inevitably exposed to various situational influences that can result in emotional reactions (Dasborough & Ashkanasy, 2002; McColl-Kennedy & Anderson, 2002). As suggested by Cole, Birch, and Vogel (2006), positive supervisor-employee interactions are inversely related to supervisor support. In other words, it entails that while cordial supervisor-employee relations will enhance perceptions of supervisor support, poor relations will negatively impact this relationship. Additionally, frequent interactions a supervisor has with employees, compared to upper management, put them in a better position to readily convey positive sentiments of caring and support to employees (Eisenberger et al., 2002). Importantly, it is observed that perceived supervisor support may also mitigate negative employee attitudes and behaviours (Rhoades & Eisenberger, 2002). As both a source of social support and a job resource in the workplace, perceived supervisor

support can attenuate intentions to leave among employees (Brough & Frame, 2004; Mansell, Brough, & Cole, 2006).

Co-worker Support

Co-worker support is defined as the social support provided by co-workers in a work setting. This kind of support can primarily be offered in four areas, namely: as informational support (which entails assistance in problem-solving), as emotional support (shown through caring, empathy and trust), as appraisal support (expressed through affirmations and communicating self-evaluation), and as instrumental support (which is shown through providing tangible aid or goods) (Langford, Bowsher, Maloney, & Lillis, 1997). It can be assumed that co-workers serve as potential resources in the workplace (e.g. as sources of knowledge, emotional support, and material resource) that pertain to the experience of engagement (Bakker & Leiter, 2010), hope, optimism, resilience, and self-efficacy at work. Schaufeli and Bakker (2004) demonstrate that co-worker social support has a positive correlation with dimensions of engagement, namely, vigour and dedication in a cross-sectional study. Korunka, Kubicek, Schaufeli, and Hoonakker (2009) also reported that co-worker and supervisor support were predictive of engagement. Montgomery, Peeters, Schaufeli, and Den Ouden (2003) established a positive relation between social support from co-workers and the engagement constructs of vigour and dedication in a cross-sectional study of managers.

Task Characteristics

Job characteristics theory describes the relationship between task characteristics and individual responses to work (Hackman & Oldham, 1976, 1980). The theory specifies the task condition in which individuals are predicted to prosper in their work. The researchers identified the following five job dimensions that prompt three psychological states that lead to some beneficial personal and work outcomes:

- Skill variety typifies the extent to which a job requires a variety of different activities in carrying out the work. This may primarily involve the use of some different skills and talents by the person performing the job.
- Task identity denotes a job that requires completion of a whole product or provision of a complete service comprising identifiable pieces of work or delivering an end-to-end service. It involves doing a job from beginning to end with clear outcomes upon completion.

- Task significance refer to characterises of a job that have a substantial impact on the lives of other people, whether those people are in the current organisation or the world at large. Specifically, the end results of performing such a job would influence the course of lives.
- Task autonomy indicates a job that provides substantial freedom, independence, and discretion to the individual in scheduling the tasks and in determining the procedure to be used in carrying out that job.
- Job feedback shows the degree to which carrying out the work activities required by the job provides the individual with direct and clear information concerning the effectiveness of his or her performance.

According to Hackman and Oldham (1976), these five dimensions of a job could be merged into a guide that can show the overall motivating potential of a job. Their model indicates that specific task characteristics (i.e. skills variety, task identity, and task significance) could affect the extent to which an individual experience their work as meaningful. On the one hand, task autonomy may influence *experienced responsibility for outcome*, presumably as a result as of the latitude that the individual has in the planning and executing of his or her tasks; lastly, the job feedback provides immediate knowledge about the actual results of the work activities that had just been performed.

The theory further articulates that prevalence of task characteristics may lead to three psychological states within an individual. Firstly, the individual who experiences his or her work as meaningful, will attach valence to his work activities and feel emotional attachment to their activities. Secondly, the experiences of personal responsibility bestow on the individual the feeling of personal accountability for the work and results thereof. Lastly, the person who has knowledge of the results of their job will appreciate the extent of their effort in performing that particular job. Importantly, the theory posits that all the three psychological states must be experienced by the individual if desirable outcomes are to manifest.

In congruence with the preceding theory, Kahn (1990, 1992) maintains that psychological meaningfulness can be experienced from tasks that provide challenging work, variety, allow use of different skills and personal discretion, and also afford an individual with the opportunity to make a significant contribution. He further argues that jobs that are high on core task characteristics provide employees with motivation to be engaged. Enriched jobs were found to

be positively related to meaningfulness, while meaningfulness equally mediated the relationship between job enrichment and engagement (May et al., 2004). Based on the social exchange theory (SET) perspective, employees provided with enriched and challenging jobs will feel indebted to the organisation and thus reciprocate with enhanced levels of engagement (Bandura, 1991).

Outcome Variables

Increasingly, work engagement and psychological capital have been gaining traction as primary contributing factors to positive organisational outcomes. More specifically, it is understood that there is a relationship between engagement and business results (Harter, Schmidt, & Hayes, 2002). Hence there is reason to expect work engagement to be related to individuals' attitudes, intentions, and behaviours. The present study focused on intention to leave and job performance as outcomes.

Intention to leave is a process that entails a decision by an individual to either stay or leave the organisation (Fox & Fallon, 2003). Such intentions are important for organisations to the extent that, according to the theory of planned behaviour (Ajzen, 1991), intentions are precursors to the actual behaviour. As a result, organisational practitioners recognise intention to leave as providing a strategic leverage point for the organisation (Lockwood, 2007). Furthermore, given that turnover itself is extremely costly for the organisation (Allen, 2008), organisations need to be cautioned of the impending turnover in order to mitigate its occurrence.

In addition to utilising human resources as a beneficial resource for achieving desirable work outcomes (Huselid, Becker, & Beatty, 2005), other researchers (Luthans, Youssef, & Avolio, 2007; Luthans & Youssef, 2004) have specifically recommended a shift in focus towards the development of human psychological capacities. Luthans et al. (2007) argued that whereas human resource development generally rely on employees' skills, knowledge and experience, the successful development of psychological capacities facilitate the transformation of the complete person into a well-rounded individual who has a positive outlook and displays more positive attitude and demeanour. There is growing scientific evidence that substantiates that this positivity has a promising impact on individual's work-related attitudes, behaviours, relationship with others, and general well-being (Avey, Luthans, Smith, & Palmer, 2010; Fredrickson, 2001; Lyubomirsky, King, & Diener, 2005).

The level of the individual's psychological capital has been highlighted as important to the extent that it influences work-related attitudes and behaviours (Lyubomirsky, King, & Diener, 2005). Specifically, Avey et al.'s (2009) findings suggest a negative relationship between psychological capital and intentions to leave, whereas evidence that employee level of psychological capital is positively related to their job performance is well-documented (Avey & Nimmicht, 2010; Luthans et al., 2007; Stajkovic, 2006). Moreover, empirical evidence points out that the composite effect of enhanced levels of psychological capacities enables individuals to perform at a much high level than would have been the case if not all of them were present (Luthans et al., 2007).

Individuals that self-reported with high levels of optimism have lower intentions to leave their jobs (Barkhuizen, Rothmann, & Van de Vijver, 2014). They are resilient and likely to bounce back from negative events in the workplace, which might reduce intentions to leave (Avey, Luthans, & Youssef, 2010). Furthermore, individuals that experience high levels of hope are more inclined to find pathways to success in their current jobs (Avey et al., 2010). Amunkete and Rothmann (2015) found that psychological capital had a strong direct negative effect on intention to leave.

Job performance is defined as the "the degree to which an individual helps an organisation reach its goals" (Motowidlo, Borman, & Schmidt, 1997, p. 72). Campbell (1990) postulated two primary types of behaviour that encompass job performance, namely, those behaviours that are uniquely specific to a job and those that are generic across all jobs within an organisation. Borman and Motowidlo (1993) built on the work of Campbell and suggested that the domain of job performance can be sub-divided into at least two separate theoretical domains, namely, those that entail task or in-role performance and those that involve contextual or extra-role performance.

Although the relationship between psychological capital and job performance has been documented (Kappagoga, Othman, & Alwis, 2014; Luthans, 2000), the results have not been consistent. Therefore, a need still exist to improve our understanding of supportive climate and psychological capital in the context of intention to leave and job performance.

1.2 PROBLEM STATEMENT

Job resources have been found to promote work engagement. Included among these are, social climate at work and characteristics of tasks (Bakker & Demerouti, 2007; Hakanen, Bakker, & Schaufeli, 2006; Schaufeli & Salanova, 2007). Additionally, psychological resources (i.e. self-efficacy, organisational-based self-esteem, and optimism) were also found to contribute to work engagement (Mauno et al., 2007; Xanthopoulou et al., 2007). Furthermore, work engagement has an effect on work-related attitudes (e.g. job satisfaction) and behavioural outcomes (e.g. intention to leave). In support, Saks (2006) has also illustrated positive relations between engagement and job satisfaction and negative relationship between engagement and intention to leave. Despite the increasing number of studies on antecedents and consequences of employee engagement, gaps in knowledge exist.

First, it is evident that there has been quite a proliferation of engagement research using JD-R model. However, given that the current work environment has become more socially interwoven and interdependent than ever before, it would be beneficial to direct the focus of engagement studies more to the effects of contextual relations to enhance understanding of how individuals can be better engaged in these circumstances. The quality of work relationships is crucial for creating conditions that can foster engagement (Kahn, 1990; Kahn & Heaphy, 2014). It is the depth of connections people have established that enables them to be physically involved, cognitively aware, and emotionally connected (Kahn, 2007). Recent studies have confirmed that engagement levels are susceptible to influence from contextual and interpersonal factors (Kahn & Heaphy, 2014). This study will contribute to the understanding of antecedent factors of engagement from a relational viewpoint. As indicated elsewhere, the majority of studies on engagement have been dominated by JD-R model approach.

Second, Luthans (2002) has considered the need for positive organisational behaviour research, defined as “the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today’s workplace” (Luthans, 2002, p. 59). This study therefore adds to the literature by underscoring the importance of psychological resources (i.e. hope, self-efficacy, resilience, and optimism) and their impact on job performance and intention to leave. The test of structural models by using sophisticated statistical software, such as Mplus (Muthen & Muthen, 1998-2015) has been neglected (Luthans, Avolio, Walumbwa, & Li, 2005). Mplus

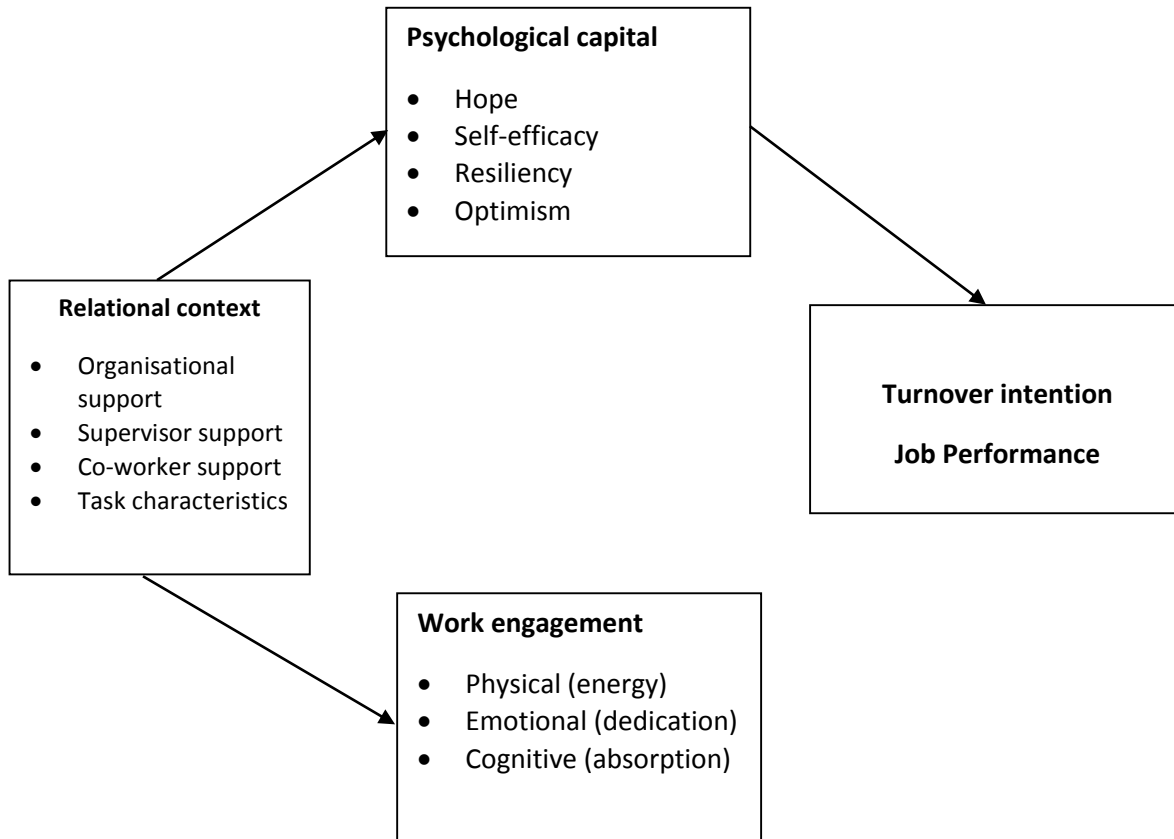
allows the researcher to use appropriate estimators, depending on the nature of the data (Muthen & Muthen, 1998-2015).

The research model is graphically depicted in Figure 1. This study assumed that specific relations and job resources will predict work engagement and psychological capital. Furthermore, psychological capital will mediate the relationship between relational variables and job resources on the one hand and job performance and intention to leave on the other hand.

In light of the preceding discussions, this study sought to investigate the following research questions:

- How do supervisor support, co-worker support and task characteristics impact work engagement in a platinum mining organisation?
- What is the relationship between supervisor support and employees' level of psychological capital in a platinum mining company, and how does this relation influence job performance of employees?
- What is the relationship between perceived support (from supervisor, co-worker, and organisation) and intentions to leave among employees in a platinum mining organisation?
- What are the mediating effects of psychological capital in the relationship between perceived support and intentions to leave?

Figure 1. Proposed research model



1.3 AIMS OF THE RESEARCH

1.3.1 General research aim

The general aim of this study was to investigate the relationships among relational contexts, task characteristics, psychological capital, work engagement, intention to leave and job performance.

1.3.2 Specific research objectives

The specific objectives of the study are outlined regarding the specific research article being studied:

Manuscript 1: Work Engagement in the Mining Industry: The Role of Tasks and Relationships

- To determine how employees' perceptions of supervisor support impact on their levels of work engagement.
- To investigate how employees' perceptions of co-worker support impact their levels of work engagement.
- To study how employees' task characteristics influence their engagement.

Manuscript 2: Supervisor Support, Psychological Capital and Job Performance in the Mining Industry.

- To study how supervisor support influences employees' psychological capital.
- To evaluate how employees' psychological capital impacts employees' job performance.
- To investigate how supervisor support impacts employees' job performance.
- To assess how supervisor support indirectly affects employees' job performance via psychological capital.

Manuscript 3: Relationship among perceived organisational support, supervisor support, co-worker support and intention to leave in a platinum mining industry: Role of psychological capital as a moderator

- To determine how perceived supervisor support, co-worker support, and organisational support impact employees' psychological capital.
- To investigate how perceived supervisor support, co-worker support, and organisational support influence employees' intentions to leave.
- To study how employees' psychological capital influence their intention to leave.
- To explore how perceived supervisor support, co-worker support, and organisational support indirectly influence employees' intentions to leave via psychological capital.

1.4 RESEARCH METHOD

This study consists of a research design, research participants, research procedure, measuring instruments, and data analysis.

Manuscript 1

Research Design

To achieve the aim of this study and to execute research, the first phase of this study adopted a cross-sectional design with a survey data collection technique. In a cross-sectional method, a sample is drawn from a population at a specific point in time (Shaughnessy, Zechmeister, & Zechmeister, 2015).

Participants

This study was conducted within a platinum mining company situated across four provinces in South Africa, namely; Gauteng, Limpopo, Mpumalanga, and North-West provinces. A stratified random sample of not less than 1 000 employees was taken, representing various demographic strata (i.e. divisions, operational areas, roles, race and gender). The platinum group ($N = 13\ 369$) has three main divisions, namely, Mining operations ($n = 9949$), Process operations ($n = 2791$), and Health services ($n = 629$) (see Figure 2). The ‘mining division’ comprises various mining operations (e.g. Rustenburg, Amandelbult and Mogalakwena). Each ‘mining operation’ has a hierarchical structure which includes the following key roles: the general manager, production managers, section managers, senior shift supervisors, shift supervisors, miners, and team leaders (lower level employees were excluded due to literacy concerns). Other mining technical support structures including; geologists, mine surveyors, site safety officers, ventilation officers, engineers, human resources as well as finance people, were also included in this study. All mining operations within the platinum group were randomly selected. Next, the “process division”, which comprises three areas, (i.e. concentrator plants, refinery plants, and smelter operations) were included in this study to represent the *processing* side of business. Employees from each of the three areas within ‘process division’ were randomly sampled. Each area within the ‘process division’ has various roles, including manager production, engineering managers, process overseers, section engineers, safety officials, human

resources and finance people. For purposes of this study, all these areas and roles were represented. Furthermore, random samples were also taken from employees within the ‘health services’ division. They included medical doctors, nurses, clinical psychologists, opticians, dentists, social workers, and administrative staff. The random samples were taken based on gender, race, language, education level, years of experience in the company and role, marital status, department working in, and job level. The diagram below (Figure 2) depicts different divisions and areas where the sampled employees work within this organisation.

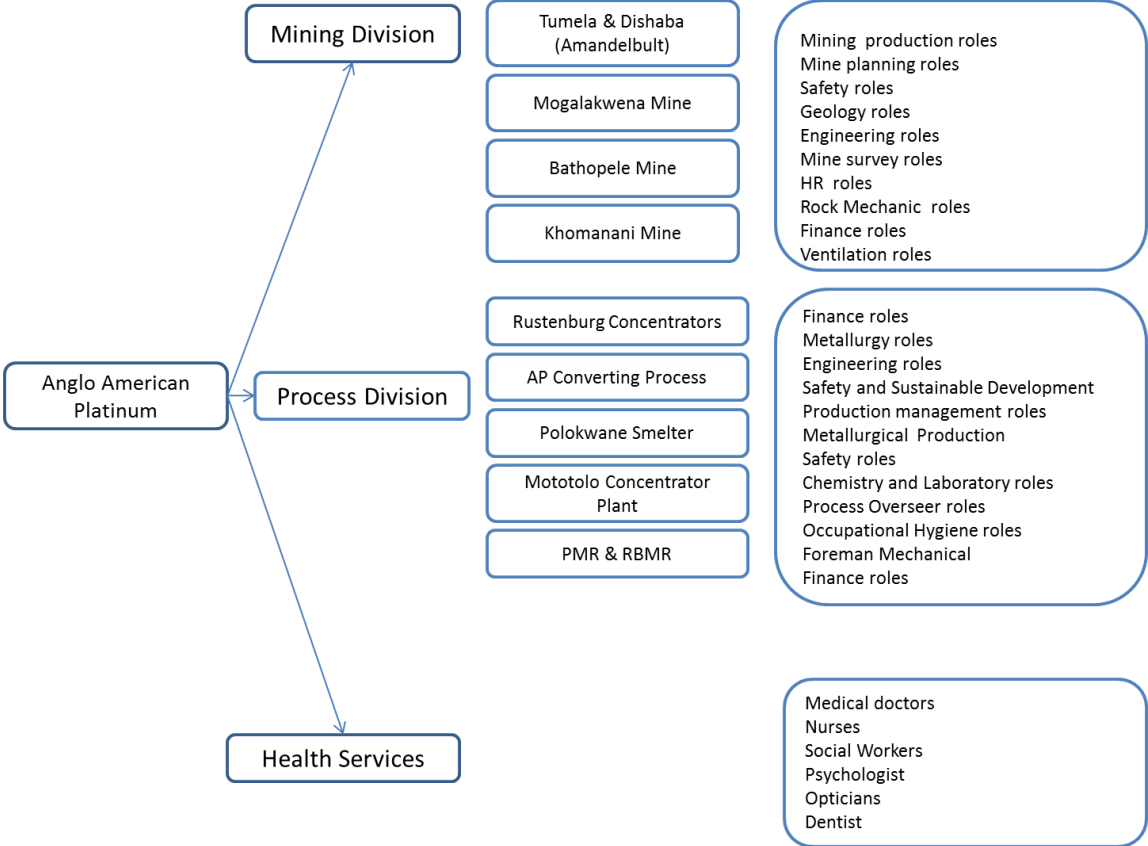


Figure 2. The division of work at the platinum mine

Measuring Instruments

The adapted version of the *Engagement Scale* (ES; May et al., 2004) was used to measure levels of work engagement of the participants. The 12-item scale is composed of three subscale of Kahn’s (1990) conceptualisation of employee engagement, namely cognitive (three items), emotional (three items), and physical engagement (three items). Examples of the items include: ‘I am very absorbed in my work’ (cognitive engagement), ‘I am passionate about my work’

(emotional engagement), I feel alive and vital at work' (physical engagement). All items of the survey were measured on a seven-point frequency rating scale, anchored at extreme poles ranging from 1 (*almost never or never*) to 7 (*always or almost*). The alpha coefficient of 0.85 was found for the total scales (Rothmann, 2010).

The *Supervisory Support Scale* (SSC) was developed to assess the participants' perceptions of the behaviours of their supervisors as it pertains to support for competence, relatedness, and autonomy. A total of 43 items which relate to competence, relatedness, and autonomy support by supervisors were identified from the literature (Truss, et al., 2014), supervisor behaviour (Kahn & Heaphy, 2014; May et al., 2004; Rothmann, 2013), and self-determination (Deci & Ryan, 1985, 2000, 2011). Experts in the field of work and organisational psychology checked the content validity. Experts were requested to classify the 43 items in terms of the three dimensions of competence, relatedness, and autonomy support. A total of 21 items were not consistently correctly classified and were thus removed from the initial questionnaire. The final SSC measure consisted of 22 items that assess the three factors applicable to the participants' supervisor, namely competence-support, relatedness-support, and autonomy-support. Competence-support was measured using eight items (e.g. my supervisor has confidence in my abilities). Relatedness-support was measured using nine items (e.g. my supervisor displays emotions exactly in line with feelings). Autonomy-support was measured using five items (e.g. my supervisor allows me to learn from my mistakes). All 22 items were anchored on a 5-point Likert-type scale at extreme values of 1 (*strongly disagree*) to 5 (*strongly agree*).

The revised *Job Diagnostic Survey* (JDS; Idaszak & Drasgow, 1987) was used to measure each of the five core job dimensions. The 15-item survey uses a seven-point Likert-type scale anchored at extreme values of 1 (very inaccurate) and 7 (very accurate). Some of the examples of items that describe job characteristics in the scale include the following: "The job is simple and repetitive", "This job is one where a lot of other people can be affected by how well the job gets done"; "After I finish a job or a task in my job I know whether I performed well or not", and "The job is arranged so that I can do a whole piece of work from beginning to end". The alpha coefficients for the subscales range between 0.67 and 0.79 (Buys, Olckers, & Schaap, 2007).

A demographic questionnaire was developed to measure control variables about participants. Variables measured include work area, role in the organisation, gender, ethnicity/race, age, operation, role, qualification, tenure in the organisation, and job level in the organisation.

Research Procedure

Ethics approval was obtained from the ethics committee of the participating university. The researcher sought permission to conduct the study from the senior management of the participating organisation prior to the commencement of the study. Once permission was granted, an e-invitation letter was sent to all sampled employees (up to the executive management level) of the mining company in which the objectives of the study were enunciated to potential participants and written consent obtained from them regarding their participation in the study. It was emphasised that participation was voluntary. Confidentiality and anonymity were assured. The invitation included a weblink for access to the survey. The design of the questionnaire was such that participants could complete individual sections of the survey, one section at a time, before submitting their completed questionnaire response. The data were collected between the period of August 2013 and April 2014, and at least three reminders were sent to participants during this time to urge them to submit their completed responses.

Data Analysis

Latent variable modelling using Mplus Version 7.31 (Muthén & Muthén, 1998-2014) was used to test the measurement and structural models in this study. The items of all questionnaires were defined as categorical as their scales had six points or less, and the weighted least-squares with mean and variance adjustment (WLSMV) was used as an estimator. To assess model fit, the comparative fit index (CFI; > 0.90), Tucker-Lewis index (TLI; > 0.90), the root mean square error of approximation (RMSEA; < 0.08), and the weighted root mean square residual (WRMR) were reported.

Reliabilities (ρ) of scales measured by items rated on a continuous scale were computed using a formula based on the sum of squares of standardised loadings and the sum of standardised variance of error terms (Wang & Wang, 2012). This was done as an alternative to Cronbach's alpha, which does not provide a true estimate of scale reliability when latent modelling is used.

Manuscript 2

Research Design

The second phase of the study followed a quantitative approach to achieve the objectives of the study, more specifically the cross-sectional survey design. A cross-sectional research design typically consists of different people that are examined by the researcher using one or more variables (Huysamen, 2004). This survey design is suited to the descriptive and predictive functions associated with correlational research, which involves the investigation of relationships between variables (Shaughnessy et al., 2015).

Participants

This study was conducted within a platinum mining organisation situated in the North-West Province using a stratified random sample (refer to Article 1 where details of the sample and the target organisation were outlined).

Measuring Instruments

A 22-item *Supervisory Support Scale* (SSC) was developed to measure perceived supervisor support for employees' needs for competence, relatedness, and autonomy. All items were anchored on a five-point Likert-scale at extreme values of 1 (*strongly disagree*) to 5 (*strongly agree*). Competence-support was measured using eight items (e.g. "My supervisor has confidence in my abilities"). Relatedness-support was measured using nine items (e.g. "My supervisor displays emotions exactly in line with feelings"). Autonomy-support was measured using five items (e.g. "My supervisor allows me to learn from my mistakes").

Psychological capital was measured using the *Psychological Capital Questionnaire* (PCQ; Luthans et al., 2007), consisting of 24 items. The PCQ is designed to assess the four components of psychological capital: hope, self-efficacy, optimism, and resilience, with each component being assessed by six items. A sample item used for assessing the hope facet is "I can think of many ways to reach my current goals". An example of items that measured efficacy includes "I feel confident in representing my work area in meetings with management." Optimism was measured using items such as "I'm optimistic about what will happen to me in

the future as it pertains to work”, and an example of items that were used to measure resilience include “I can get through difficult times at work because I’ve experienced difficulty before”. Responses were reported via a Likert-type scale varying from 1 (*strongly disagree*) to 6 (*strongly agree*). Because psychological capital is a higher-order construct, the four key psychological capital capacities have a synergetic effect (Luthans, Avey et al., 2008). The average score for the total scale was calculated to obtain the composite psychological capital value in this study, with higher scores indicating more psychological capital. According to Luthans et al. (2007), the resulting score indicates the level of an individual’s positive psychological capital. Acceptable Cronbach alphas were found for the PCQ in previous studies ranging from 0.88 to 0.89 (Luthans et al., 2007).

Job performance was assessed by 16 items from the Goodman and Svyantek scale (1999). Two different sub-scales were considered: in-role performance (9-items; e.g., “I perform well in the overall job by carrying out tasks as expected”) and extra-role performance (7 items; e.g., “I assist others with their duties”). Participants answered using a 7-point Likert-type scale varying from 0 (*not at all characteristic*) to 6 (*totally characteristic*). The internal reliabilities for in-role performance and extra-role performance measures are on 0.90 and 0.88 respectively (Goodman & Svyantek, 1999).

A *biographical questionnaire* provided the record of socio-demographic and biographical data of participants including age, gender, race, language, marital status, level of education, department where employed, and period of tenure with the organisation and in current role.

Research Procedure

The initial step in conducting this study involved obtaining ethical approval from the participating university, followed by seeking permission from the senior management of the participating organisation. Once permission was granted, researchers sent out an e-invitation letter to all sampled employees (up to the executive management level) of the mining company. The objectives of the study were enunciated in the letter sent to potential participants and written consent was obtained from them regarding their participation in the study. It was emphasised that participation was voluntary. Confidentiality and anonymity were assured. The invitation included a weblink for access to the survey. The design of the questionnaire was such that participants could complete individual sections of the survey, one section at a time, before

submitting their completed questionnaire response. The data was collected during the period of August 2013 and April 2014, and at least three reminders were sent to participants during this time to urge them to submit their completed responses.

Data Analysis

The second step in the process of conducting this study involved statistical analyses of the data using Mplus version 7.31 (Muthen & Muthen, 1998-2014). Items of the three questionnaires were defined as categorical and the weighted least squares with corrections to means and variances (WLSMV) were used as the estimator. The following indices produced by Mplus were used in this study: (a) absolute fit indices, including chi-square statistic, which is the test of absolute of the model, and the Root Mean Square Error of Approximation (RMSEA), and (b) incremental fit indices, including Tucker-Lewis Index (TLI) and the Comparative Fit Index (CFI; Kline, 2010). TLI and CFI values higher than 0.90 are considered acceptable. RMSEA values lower than 0.08 indicate a close fit between the model and the data (Hair, Black, Babin & Andersen, 2010).

Reliabilities (ρ) of scales were computed by means of a formula based on the sum of squares of standardised loadings and the sum of standardised variances of error terms (Raykov, 2009; Wang & Wang, 2012).

To determine whether any relationships are indeed indirectly affected by independent variables, the procedure explained by Hayes (2009) was used. Bootstrapping was used to construct two-sided bias-corrected 95% confidence intervals (CIs) so as to evaluate indirect effects. Lower CIs and upper CIs were reported.

Manuscript 3

Research Approach

Manuscript 3 also applied a non-experimental cross-sectional correlational survey-based research design (Salkind, 2012) to determine the interrelationships between perceptions of supervisor support, co-worker support, organisational support, psychological capital, and intention to leave within a platinum mining company. This research design is appropriate to sample behaviours, cognition and affect at a current moment in time (Salkind, 2012).

Participants

Research participants consisted literate component of employees of a platinum mining company in South Africa. This research data was collected by means of stratified random sampling method (refer to Manuscript 1 where details of the sample and the target organisation were outlined).

Measuring Instruments

Five measuring instruments were used for purposes of this study, namely the Survey of Perceived Organisational Support Scale (SPOS), Supervisory Support Scale (SSC), Social Support Scale (SSS), Psychological Capital Questionnaire (PCQ), and Turnover Intention Scale (TIS). Also, a biographical data sheet was also developed.

Perceived organisational support was measured with the 16-item *Survey of Perceived Organisational Support Scale* (SPOS; Eisenberger et al., 1986). The scale measured employees' perceptions of whether the organisation appreciates their contributions and treats them favourably or unfavourably in differing circumstances. Respondents were requested to indicate on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), how much their organisations supported them. Positively worded items in this questionnaire tapped the extent to which respondents believe their organisation values their contribution, considers their goals and interests, makes help available to solve problems, and cares about their general work satisfaction, while negatively worded items examined beliefs that the organisation would

disregard employee interests, fail to notice their efforts and contributions, and would take advantage of them when the opportunity arose. The scale reported a reliability range of between 0.67 and 0.95 (Rhoades & Eisenberger, 2002).

Perceived supervisor support was measured using the *Supervisory Support Scale* (SSC). This measure assessed employee's perception of the supervisor's support for autonomy, competence, and relatedness. The 22-item survey used a 5-point Likert-type scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Examples of items used included "My supervisor takes the time to learn about my career goals and aspirations", "My supervisor treats me in a humane way" and "My supervisor shows he or she understands how specific actions impact on others". (See Chapter 2 for reliability and validity of the SSC).

Co-worker support was measured using the *Social Support Scale* (SSS; O'Driscoll, 2000). This scale measured how the participant's co-workers are perceived to be behaving towards him or her. Participants responded to a 6-point Likert-type scale ranging from 1 (*never*) to 6 (*all the time*). An example of items included in this scale is "Indicate how often your co-worker provides you with clear and helpful feedback". This scale comprised four items and has a maximum score of 24 and a minimum score of 4. A high score indicated higher levels of co-worker support. The scale has a reliability of 0.89 (O'Driscoll, Brough, & Kalliath, 2004).

Psychological capital was measured using the *Psychological Capital Questionnaire* (PCQ; Luthans, Youssef, & Avolio, 2007), consisting of 24 items. The PCQ was designed to assess the four capacities of psychological capital: hope, self-efficacy, optimism, and resilience, with each component being assessed by six items. A sample item used for assessing the hope facet was "I can think of many ways to reach my current goals". An example of items that measured efficacy included "I feel confident in representing my work area in meetings with management." Optimism was measured using items such as "I'm optimistic about what will happen to me in the future as it pertains to work", and an example of items that were used to measure resilience included "I can get through difficult times at work because I've experienced difficulty before". Responses were reported via a Likert-type scale varying from 1 (*strongly disagree*) to 6 (*strongly agree*). Because psychological capital is a higher-order construct, the four psychological capital capacities have a synergetic effect (Luthans et al., 2008). The average score for the total scale was calculated so as to obtain the composite psychological capital value in this study, with higher scores indicating more psychological capital. According

to Luthans et al. (2007), the resulting score indicates the level of an individual's positive psychological capital. Acceptable Cronbach alphas were found for the PCQ in previous studies ranging from 0.88 to 0.89 (Luthans et al., 2007).

Employees' intention to leave was measured using *Turnover Intention Scale* (TIS; Sjöberg & Sverke, 2000). This three-item scale measured the extent to which participants are thinking of or considering leaving their current jobs. Participants responded to a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items used include "If I was completely free to choose, I would leave this job". The estimated alpha coefficient of this scale is 0.83 (Sjöberg & Sverke, 2000; Rothmann, Diedericks, & Swart, 2013).

A *biographical questionnaire* was developed to record socio-demographic and biographical data of participants, including age, gender, race, language, marital status, level of education, current role, department where employed, and period of tenure with the organisation and in current role.

Data Analysis

The analysis of the data was carried out using Mplus version 7.31 (Muthen & Muthen, 1998-2015). Items of the five questionnaires were defined as categorical and the weighted least-squares with corrections to means, and variances (WLSMV) were used as estimator. The following indices produced by Mplus were used in this study: a) absolute fit indices, including the chi-square statistic which is the test of absolute fit of the model, the weighted root mean square residual (WRMR), and the Root Mean Square Error of Approximation (RMSEA), and b) incremental fit indices, including the Tucker-Lewis Index (TLI) and the Comparative Fit Index (CFI) (Hair, Black, Babin, & Anderson, 2010). The CFI also compares the hypothesised and independent models, but takes sample size into account. The TLI is a relative measure of co-variation explained by the hypothesised model which has been specifically designed for the assessment of factor models. TLI and CFI values higher than 0.95 are regarded as acceptable (Hu & Bentler, 1999). RMSEA values lower than 0.08 and a WRMR lower than 1 indicate a close fit between the model and the data. Chi-square difference tests were conducted to compare alternative nested structural models (Muthén & Muthén, 1998–2015). Composite reliability (Raykov, 2009) was computed for each scale. Composite reliability (ρ) is superior to Cronbach alpha coefficients when latent variable modelling is used.

Indirect effects were also computed. To determine whether any relationships are indeed indirectly affected by independent variables, the procedure explained by Hayes (2009) was used. Bootstrapping was used to construct two-sided bias-corrected 95% confidence intervals (CIs) so as to evaluate indirect effects. Lower CIs and upper CIs were reported.

Ethical Considerations

The initial step in conducting this study involved obtaining ethical approval from the participating university, followed by seeking permission from the senior management of the participating organisation. The projects was approved by the Ethics Committee (Number: OPT-2013-005). Once permission was granted, researchers sent out an e-invitation letter to all sampled employees (up to the executive management level) of the mining company. The objectives of the study were enunciated in the letter sent to potential participants and written consent was obtained from them regarding their participation in the study. It was emphasised that participation was voluntary. Confidentiality and anonymity were assured. The invitation included a web-link for access to the survey. The design of the questionnaire was such that participants could complete individual sections of the survey, one section at a time, prior to submitting their completed questionnaire response. The data were collected between the period of August 2013 and April 2014, and at least three reminders were sent to participants during this time to urge them to submit their completed responses.

1.5 CHAPTER LAYOUT

Chapter 1: Introduction, problem statement and objectives.

Chapter 2: Work engagement in the mining industry: The role of tasks and relationships.

Chapter 3: Supervisor support, psychological capital and job performance in the mining industry.

Chapter 4: Perceived organisational support, supervisor support, co-worker support and intention to leave in a platinum mining industry: Role of psychological capital as a moderator.

Chapter 5: Conclusions, limitations and recommendations.

1.6 CHAPTER SUMMARY

In this chapter the background for the current study was provided as well as the motivation therefor. The problem statement and the general aim were also presented. Further to this, core concepts were identified, discussed and defined. And, lastly, this chapter provided the overview of the chapters in this study.

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CHAPTER 2

MANUSCRIPT 1

Work Engagement in the Mining Industry in South Africa: The Role of Tasks and Relationships

Abstract

The platinum mining sector in South Africa presents a significant context for the study of work engagement, given the major changes and turmoil experienced by employees in this sector. The aim of this study was to investigate the effects of task and relational factors on work engagement in the platinum mining industry in South Africa. A stratified random sample ($n=564$) comprising employees in a platinum mining organisation in South Africa was surveyed (females = 35.1%, Africans = 51.6%, middle managers = 40.8%). The employees completed a biographical questionnaire and several other measures: the Engagement Scale, Supervisory Support Scale, Social Support Scale and Job Diagnostic Survey. The results supported a reliable three-factor structure (consisting of autonomy support, competence support, and relatedness support) for the Supervisor Support Scale. The structural model confirmed that task characteristics (comprising task significance and task identity) were strongly related to work engagement. Supervisor support and co-worker support showed a positive relationship with work engagement albeit to a lesser extent.

Keywords: Work engagement, supervisor support, co-worker support, job characteristics, task identity, task significance

Work relationships are among the most important features for fostering work engagement (Kahn & Heaphy, 2014). Social interactions facilitate engagement at work through social support (Morgeson & Humphrey, 2006; Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005) – which is a relational contextual variable (Kahn & Heaphy, 2014). Existing research on work engagement does not explicitly investigate relational contexts (Kahn & Heaphy, 2014). Second, individuals' perceptions of supervisors' and co-workers' behaviours may be differentially related to work engagement (Graves & Luciano, 2013). Furthermore, the question arises as to whether the relational context or the design of jobs has a stronger effect on work engagement. The present study investigated the impact of job design and work relationships on work engagement in the mining industry in South Africa.

The South African Mining Industry

The platinum mining sector presents a significant context for studying work engagement for various reasons. First, recent labour unrests, organisational restructuring initiatives, and ongoing standoffs involving managers in industry and trade union leadership may have impacted the attitudes and work behaviours of employees (Alexander, 2013; Baxter, 2013). Second, research indicates that only 9% of the South African workforce is fully engaged in their work. A total of 45% is actively disengaged (i.e. those who are the most negative about their jobs and liable to spread that negativity to co-workers), notably in the mining industry (Gallup, 2014). Third, research showed that poor engagement of mine workers hurts safety behaviour and leads to accident proneness (Paul & Maiti, 2007). Fourth, in the dynamic world of business, employees are challenged to be more committed to their jobs despite an evident lack of job security and career opportunities (Maslach, Schaufeli, & Leiter, 2001).

Previous work engagement studies have focused on non-profit organisations, high technology industries, insurance industries, the pharmaceutical, hospitality, finance, and banking sectors (Kular, Gatenby, Rees, Soane, & Truss, 2008; Lee, 2012; Towers Perrin, 2003), heavy metal manufacturing industries (Olivier & Rothmann, 2007), and educational institutions (Barkhuizen & Rothmann, 2006; Jackson & Rothmann, 2004). Notwithstanding the evident potential of work engagement in predicting various desirable job and organisational outcomes, little attention has been paid to investigate its antecedents in the mining industry.

Work Engagement

Work engagement refers to employees' attachment to their work roles (Kahn & Heaphy, 2014). It comprises three dimensions: physical, cognitive and emotional (Kahn, 1990; Schaufeli, Salanova, González-Romá, & Bakker, 2002). The physical component refers to physical involvement in a task, vigour and a positive affective state. The cognitive component entails absorption and involvement. The emotional component refers to a connectedness to the job/others, dedication and commitment.

Self-determination theory (SDT; Deci & Ryan, 1985, 2011) can contribute to an understanding of antecedents of work engagement. SDT suggests that individuals may engage in a task or role for a variety of reasons. First, individuals might find tasks enjoyable, challenging and exciting (intrinsic motivation). Second, the tasks might fulfil individuals' life goals and might be connected to their sense of self, and they might identify strongly with their organisations or teams (integrated motivation). Third, they might recognise that immersing themselves in tasks or roles is important to them personally or to their team or organisation (identified motivation). These three forms of motivation are categorised as autonomous motivation, characterised by a sense of volition and choice (Deci & Ryan, 2000). Autonomous motivation leads to engaged behaviours and greater performance in tasks that require discipline and determination (Koestner & Losier, 2002). Based on SDT (Deci & Ryan, 2011) and the relational model of work engagement (Kahn & Heaphy, 2014), job design and relationships at work can affect work engagement.

Job design and work engagement. Job design comprises the characteristics of tasks assigned to an individual in an organisation (Ilgen & Hollenbeck, 1991). According to the Job Characteristics Model (JCM) (Hackman & Oldham, 1976), job design comprises five components: skills variety, task identity, task significance, task autonomy and job feedback. This model suggests that tasks have five core characteristics. *Skills variety* typifies the extent to which a job requires a variety of activities in carrying out the work. This could primarily involve the use of different skills by the incumbent. *Task identity* denotes a job that requires completion of a whole product or delivery of a complete service comprising identifiable pieces of work or involvement in various stages of the provision of services. This may involve doing different tasks of a job from beginning to end with clear outcomes. *Task significance* characterises a job that has a substantial impact on the lives of other people, whether those

people are in the existing organisation or the world at large, once completed. *Task autonomy* indicates whether a job provides substantial freedom, independence, and discretion to the individual in scheduling their work activities and determining the steps or procedures to be followed in carrying out the job. *Job feedback* shows the degree to which carrying out the work activities required by the job provides the individual with direct and precise information concerning the effectiveness of his or her performance.

Well-designed jobs that are stimulating, diverse, inspiring, and absorbing may promote individuals' levels of work engagement (Bakker & Demerouti, 2007; Shantz, Alfes, Soane, & Truss, 2013). When employees are assigned varied, interesting and challenging tasks, they are likely to feel motivated and inspired to immerse themselves in their work (Crawford, Rich, Buckman, & Bergeron, 2014). However, when employees find their work to be tedious, routine, and uninteresting, they may become disengaged and dissatisfied as their psychological resources become depleted (Morgeson & Humphrey, 2006). Importantly, Christian, Garza, and Slaughter (2011) illustrated that the way a job is designed has an impact on work engagement. Job design's influence on work engagement in the context of the mining industry has not been specifically investigated.

Social connections and work engagement. Social support likely deepens work engagement through affirmation of employees' work identities, building workplace trust, providing emotional relief and alleviating anxieties (Kahn & Heaphy, 2014). Higher quality relationships, as opposed to lower quality relationships, offer greater potential for stimulating work engagement (Kahn, 2007; Kahn & Heaphy, 2014). Social connections with co-workers and supervisors are necessary for workplace belongingness. According to Wellins and Concelman (2005), positive relationships with co-workers influence perceptions of meaningfulness at work, which results in high levels of engagement. Similarly, from a relatedness needs perspective, employees who enjoy rewarding interpersonal interactions with their colleagues will likely experience a greater degree of meaningfulness in their work (Locke & Taylor, 1990).

Individuals' relationships with significant others in a work setting present an opportunity to fulfil their psychological needs for autonomy, competence and relatedness (La Guardia & Patrick, 2008; Ryan & Deci, 2002). Supervisor behaviours that are supportive of autonomy include sharing control and influence with employees about how the job gets done, allowing employees to choose their tasks, allowing for the possibility of failure or mistakes, providing

feedback in a non-controlling way, and trying to understand the subordinate's perspective, eliminating excessive rules (Baard, 2002). These kinds of autonomy support from a supervisor provide subordinates with a sense of influence over their workplace (Baard, Deci, & Ryan, 2004). Baard (2002) suggests supervisor responses that could facilitate the satisfaction of the need for competence of employees. Such responses include providing proper training and support to subordinates, discussing and agreeing on objectives to be achieved by subordinates, delegating interesting tasks that have a potential for developing subordinates' new skills, providing constant feedback to subordinates, as well as removing any potential barriers to effective performance. Supervisor behaviour that supports relatedness includes fostering teamwork, mutual respect, interdependence among team members and shared group goals (Baard, 2002).

Previous research has showed that higher levels of engagement are seen in employees whose direct supervisors exhibit more relationship-oriented behaviours, and that supportive supervisor behaviours facilitate engagement among their employees (Kahn, 1990; May, Gilson, & Harter, 2004; Saks, 2006). By the same token, researchers have also found that supervisors' behaviours can be a driver in creating disengagement, especially through an inconsistent management style which leads to perceptions of unfairness (Maslach et al., 2001).

Aim and Hypotheses

The objective of this study was to investigate the effects of job design, supervisor support, and co-worker support on the engagement of employees of a platinum mining company. The following hypotheses were formulated based on the preceding discussions of literature and objectives of this study.

Hypothesis 1: Employees' perceptions of their task characteristics are positively related to their work engagement.

Hypothesis 2: Employees' perception of supervisor support is positively related to their work engagement.

Hypothesis 3: Employees' perception of their co-worker support is positively related to their work engagement.

Although there is overwhelming research evidence to suggest the importance of work engagement in achieving distal organisations' effectiveness, hitherto there has been scant

research on its precursors, particularly in the mining environment. An understanding of factors that lead to engagement among employees in this mining organisation would make it possible to propose, develop and implement requisite interventions directed at harnessing permeation of engagement at work.

Method

Participants and setting

The sample consisted of employees of a platinum mining company based at different work locations across South Africa. A stratified random sampling technique was used to send the questionnaire to approximately 980 employees, of which 564 were correctly completed and found usable for the present study, yielding a response rate of 57.5%. Employees from all racial groups, job levels, educational levels, and departments ranging from semi-skilled to executive level professionals were included. The respondents were mostly of African origin (51.6%), males (64.9%), and Afrikaans speaking (35.6%). The majority of respondents fell into the 31–39-year age category (36.7%), while only 5.9% of respondents were older than 55 years. Educational level revealed that the majority (34.8%) of participants had a Grade 12 qualification. The majority of participants had worked for the company for a period ranging from 6–10 years (36.7%) and 40.8% of the participants were at middle management level. A large number of respondents (41.3%) that participated in this study were employed in the mining division side of the business.

Table 1

Characteristics of Participants (n = 564)

Item	Category	Frequency	Percentage
Gender	Male	366	64.9
	Female	198	35.1
Age	21 – 30	110	19.5
	31 – 39	207	36.7
	40 – 45	103	18.3
	46 – 55	111	19.7
	Over 55	33	5.9
Educational level	Grade 12 (Std. 10)	196	34.8
	Technical College Diploma	75	13.3
	Technikon Diploma	70	12.4
	University Degree	125	22.2
	Postgraduate Degree	98	17.4
Years in company	Less than 3	44	7.8
	3 to 5	109	19.3
	6 to 10	207	36.7
	11 to 15	103	18.3
	16 to 20	49	8.7
	21 to 25	25	4.3
	26 to 30	18	3.2
	Over 30	10	1.8
Job level	Executive Management (Band 3)	3	0.5
	Senior Management (Band 4 and 5)	56	9.9
	Middle management (Band 6 and 7)	230	40.8
	Junior Management (C5- C3)	118	20.9
	Graduates-In-Training (C2-C4)	31	5.5
	Administrative staff (C1-C2)	77	13.7
	Skilled professional (Tradespersons)	38	6.7
	Trained labourers	11	1.9

Measuring Instruments

Four measuring instruments were used for purposes of this study, namely the adapted version of Engagement Scale, Supervisory Support Scale, Social Support Scale, and Job Diagnostic Survey. Also, a biographical data sheet was administered.

An adapted version of the *Engagement Scale* (ES; May et al., 2004) was used to measure work engagement. The nine-item survey used a seven-point Likert-type scale anchored by extreme values of 1 (*almost never or never*) and 7 (*always or almost always*). The nine items reflect the three components of Kahn's (1990) conceptualisation of work engagement, namely cognitive (three items: e.g. "I am absorbed in my work"), emotional (three items: e.g. "I am passionate about my work"), and physical (three items: e.g. "I feel alive and vital at work"). A confirmatory factor analysis-based reliability (Raykov, 2009) of 0.94 was obtained for the ES in this study.

The revised *Job Diagnostic Survey* (JDS; Idaszak & Drasgow, 1987) was used to measure each of the five core job dimensions. The 15-item survey used a seven-point Likert-type scale anchored by extreme values of 1 (*very inaccurate*) and 7 (*very accurate*). Examples of items that describe job characteristics in the scale include the following: "This job is one where a lot of other people can be affected by how well the job gets done"; "The job is arranged so that I can do a whole piece of work from beginning to end". The two factors that were extracted in this study, namely Task identity ($\rho = 0.82$) and Task significance ($\rho = 0.82$), showed acceptable reliabilities.

The *Supervisory Support Scale* (SSC) was developed to assess the participants' perceptions of the behaviours of their supervisors pertaining to support for competence, relatedness, and autonomy. A total of 43 items which relate to competence, relatedness, and autonomy support by supervisors were identified from the literature on supervisor behaviour (Kahn & Heaphy, 2014; May et al., 2004; Rothmann, 2013), and self-determination (Deci & Ryan, 1985, 2000, 2011). Four subject experts were asked to classify the 43 items regarding the three dimensions of autonomy, competence, and relatedness support. Twenty-one items were not consistently correctly classified by the four experts and were thus removed from the initial questionnaire. The final SSC measure used consists of 22 items that measure three factors applicable to the

participants' supervisor, namely autonomy, competence and relatedness support. Autonomy support was measured using five items (e.g. "My supervisor encourages employees to participate in important decisions"). Competence support was measured using eight items (e.g. "My supervisor gives me helpful feedback about my performance"). Relatedness support was measured using nine items (e.g. "My supervisor can be trusted"). All 22 items are scored on a five-point Likert-type scale varying from 1 (*strongly disagree*) to 5 (*strongly agree*). The three factors that were extracted in this study, namely Autonomy support ($\rho = 0.91$), Competence support ($\rho = 0.94$) and Relatedness support ($\rho = 0.96$), showed acceptable reliabilities.

Co-worker support was measured using the *Social Support Scale* (SSS; O'Driscoll, 2000). This scale measured how the participant's co-workers are perceived to be behaving towards him or her. Participants responded to a six-point Likert-type scale ranging from 1 (*never*) to 6 (*all the time*). An example of items included in this scale is: "Indicate how often your co-worker provides you with clear and helpful feedback". This scale comprises four items. A higher score indicates higher levels of co-worker support. A confirmatory factor analysis-based reliability of 0.92 was obtained for the SSS in this study.

A *biographical questionnaire* was developed to record socio-demographic and biographical data of participants. Items included age, gender, race, language, marital status, the level of education, the department where employed, and period of tenure with the organisation and in current role.

Research Procedure

Ethics approval was obtained from the Ethics Committee of the North-West University (Number: NWU-00103-13-S8). Prior to the commencement of the study, the researcher sought permission to conduct the study from the senior management of the participating organisation. Once permission was granted, an invitation letter was sent out to all sampled employees of the mining company. The letter explained the objectives of the study. An informed consent form was included. It was emphasised that participation was voluntary. Confidentiality and anonymity were assured. The invitation included a web link for access to the survey. The design of the questionnaire was such that participants could complete individual sections in English, one at a time, before submitting their completed questionnaire response. The data were

collected during August 2013 and April 2014, and at least three reminders were sent to participants during this time to urge them to submit their completed responses.

Data Analysis

The data analysis was carried out using Mplus version 7.31 (Muthén & Muthén, 1998-2014). The weighted least-squares with mean and variance adjustment (WLSMV) estimator were used to test the structural models. This estimator is robust; it does not assume normally distributed variables, and it provides the best option for modelling categorical data (Brown, 2006).

The following Mplus fit indices were used in this study: absolute fit indices, which included the Chi-square statistic (the test of absolute fit of the model), the weighted root mean square residual (WRMR) and the root means square error of approximation (RMSEA); incremental fit indices, which included the Tucker-Lewis Index (TLI); and the Comparative Fit Index (CFI; Hair, Black, Babin, & Andersen, 2010). The Comparative Fit Index (CFI) also compares the hypothesised and independent models, but takes sample size into account. The Tucker-Lewis Index (TLI) is a relative measure of covariation explained by the hypothesised model that has been specifically designed for the assessment of factor models. Critical values for good model fit have been recommended for the CFI and TLI to be acceptable above the 0.90 level (Wang & Wang, 2012), although Hu and Bentler (1999) recommended a cut-off value of 0.95. The RMSEA provides an indication of the overall amount of error in the hypothesised model-data fit, relative to the number of estimated parameters (complexity) in the model. The recommended acceptable levels of the RMSEA should be 0.05 or less, and should not exceed 0.08. Hu and Bentler (1999) suggest a value of 0.06 to indicate acceptable fit. Chi-square difference tests were conducted to compare alternative nested structural models (Muthén & Muthén, 1998-2014).

Raykov's (2009) confirmatory factor analysis-based estimate of scale reliability (ρ) was computed for each scale. This estimate of reliability provides a dependable estimate of scale reliability if items are not tau-equivalent (Wang & Wang, 2012).

Results

The results of tests of competing measurement models followed by results of alternative structural models are reported.

Testing the Measurement Model

Confirmatory factor analysis (CFA) was used to test the four-factor measurement model and alternative models to assess whether each of the measurement items would load significantly onto the scales with which they were associated. The following measurement models were tested:

Model 1: A model consisting of four latent variables, namely (a) perceived supervisor support, consisting of three latent variables, namely competence support (measured by eight observed variables), relatedness support (measured by nine observed variables) and autonomy support (measured by five observed variables); (b) task characteristics, consisting of two latent variables, namely task identity (measured by five observed variables) and task significance (measured by six observed variables); (c) perceived co-worker support (measured by four observed variables); and (d) engagement (measured by nine observed variables).

Model 2: A model consisting of four latent variables, namely (a) perceived supervisor support, comprising three latent variables, namely competence support (measured by eight observed variables), relatedness support (measured by nine observed variables) and autonomy support (measured by five observed variables); (b) task characteristics (measured by 11 observed variables); (c) perceived co-worker support (measured by four observed variables); and (c) engagement (measured by nine observed variables).

Model 3: A model consisting of four latent variables, namely (a) perceived co-worker support (measured by four observed variables); (b) task characteristics (measured by 11 observed variables); (c) perceived supervisor support for psychological need satisfaction (measured by 22 observed variables); and (d) engagement (measured by nine observed variables).

Model 4: A model consisting of four latent variables, namely (a) task characteristics, consisting of two latent variables, namely task identity (measured by five observed variables) and task

significance (measured by six observed variables); (b) work relationships consisting of two latent variables, namely perceived co-worker support (measured by four observed variables) and perceived supervisor support, consisting of three latent variables, namely competence support (measured by eight observed variables), relatedness support (measured by nine observed variables) and autonomy support (measured by five observed variables); and (d) engagement (measured by nine observed variables).

Table 2 shows the fit statistics of the competing measurement models.

Table 2

Fit Statistics of Competing Measurement Models

Model	χ^2	<i>df</i>	TLI	CFI	RMSEA	WRMR
1	2342.05*	980	0.98	0.98	0.05* [0.047, 0.052]	1.37
2	2491.97*	981	0.98	0.09	0.05* [0.050, 0.055]	1.44
3	2741.13*	983	0.97	0.98	0.06* [0.054, 0.059]	1.53
4	3543.21*	982	0.96	0.96	0.07* [0.066, 0.070]	1.99

* $p < 0.01$

Model 1 fitted the data best. The χ^2 (980, $n=564$) = 2342.05 of the best-fitting model was statistically significant ($p < 0.001$), but the indices indicated good fit of the model to the data: CFI=0.98; TLI=0.98; RMSEA=0.05, 90% CI [0.047, 0.052], WRMR=1.37. Standardised regression coefficients were all statistically significant and varied from 0.45 to 0.96.

Reliabilities of and correlations between work engagement and task characteristics, perceived supervisor support and perceived co-worker support are reported in Table 3.

Table 3

Reliability Coefficients and Correlations of the Scales (N = 564)

Variable	Mean	SD	ρ	1	2	3	4	5	6
1. Task identity	5.54	1.09	0.82	-					
2. Task significance	5.88	0.89	0.82	0.80**	-				
3. Supervisor support - Competence	3.37	1.12	0.94	0.33**	0.38**	-			
4. Supervisor support - Relatedness	3.61	1.08	0.96	0.33**	0.38**	0.92**	-		
5. Supervisor support - Autonomy	3.57	1.06	0.91	0.34**	0.39**	0.92**	0.96**	-	
6. Co-worker support	4.09	1.18	0.92	0.29**	0.29**	0.34**	0.36**	0.36**	-
7. Work engagement	5.62	1.06	0.94	0.62**	0.71**	0.36**	0.37**	0.37**	0.27**

** $p < 0.01$

Table 3 shows that all variables were statistically significant ($p < 0.01$) and positively related. Task identity and Task significance correlated practically significantly with Work engagement (both large effects). Perceptions of Supervisor support for autonomy, competence and relatedness correlated statistically significantly with the work engagement (all medium effects).

Table 3 shows that the reliabilities of the constructs were acceptable compared to the guideline of 0.70 (Wang & Wang, 2012). Reliability scales show values ranging from 0.82 to 0.96. Furthermore, the correlations between all the constructs were statistically significant ($p < 0.01$). Statistically significant ($p < 0.01$) relationships exist between all the variables.

Testing the Structural Model

The measurement model formed the basis of the structural model. The hypothesised relationships shown in the model were tested using the latent variable modelling as implemented by Mplus (Muthén & Muthén, 1998-2014). An acceptable fit of the hypothesised model (model 1) to the data was found: $\chi^2 = 2342.05$, $df = 980$, $TLI = 0.98$, $CFI = 0.98$, $RMSEA = 0.05$, 90% CI [0.047, 0.052], and $WRMR = 1.37$. These statistics indicate a good fit for the hypothesised model. Three other models were also tested. In model 2, the path of task characteristics to work engagement was constrained to zero. In model 3, the path of co-worker

relations to work engagement was constrained to zero. Likewise, in model 4, the path from supervisor behaviour to work engagement was constrained to zero. Given that these three models were nested in model 1, the change in chi-square ($\Delta\chi^2$) was computed for each of the models compared to model 1.

The results showed that model 1 was statistically significantly better than model 2 ($\Delta\chi^2 = 239.11$, $\Delta df = 1$, $p < 0.000$), and model 4 ($\Delta\chi^2 = 5.47$, $\Delta df = 1$, $p < 0.0193$), but not statistically significantly different from model 3 ($\Delta\chi^2 = 0.03$, $\Delta df = 1$, $p = 0.8554$). Table 4 shows the standardised regression coefficients estimated by Mplus for model 1.

Table 4

Standardised Regression Coefficients of Task and Relational Antecedents of Work Engagement

Variable	Estimate	SE	Est/SE	<i>p</i>
<i>Work engagement on</i>				
Job design	0.71	0.03	26.09	0.000**
Supervisor support	0.08	0.04	2.37	0.018*
Co-worker support	-0.01	0.03	-0.18	0.855

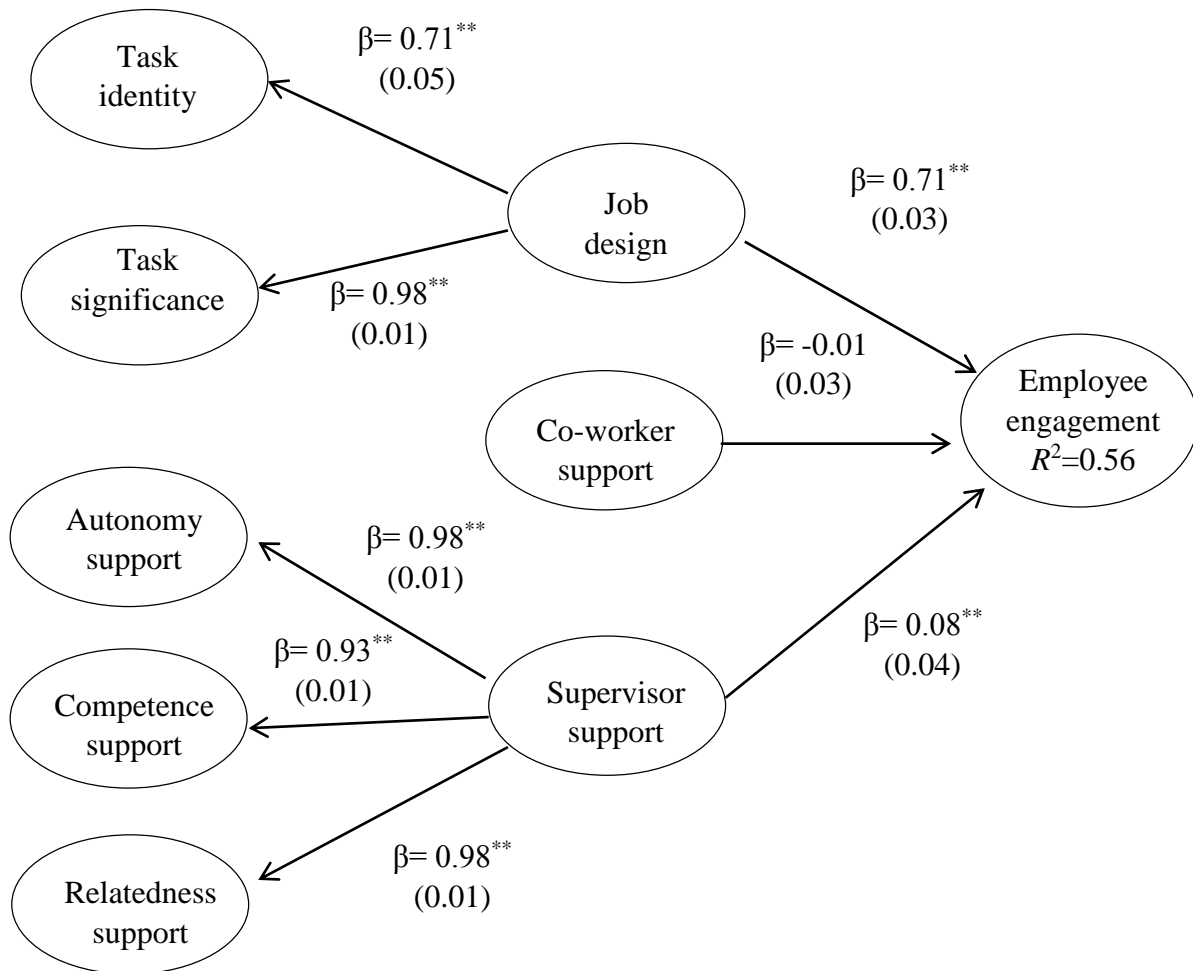
SE, standard error; Est/SE, estimate divided by standard error

* $p < 0.05$; ** $p < 0.01$

In the next section, the relations obtained for the best fitting and most parsimonious structural model (model 1) are discussed regarding the conjectured hypotheses of the study.

Table 4 portrays the path coefficient of task characteristics ($\beta = 0.71$, $p < 0.00014$) as statistically significant and had the expected sign. Work engagement has a positive relation with task characteristics. Hypothesis 1 is supported. Table 4 shows that the path coefficient of perceived co-worker support to work engagement ($\beta = -0.01$, $p = 0.86$) was not statistically significant. Hypothesis 2 is not supported. Table 4 indicates that the path coefficient of perceived supervisor support ($\beta = 0.08$, $p < 0.02$) was statistically significant and had the expected sign. Work engagement had a positive relation with perceived supervisor support of psychological need satisfaction. Therefore, task identity and significance and supervisor support for psychological need satisfaction were statistically significant predictors of work engagement in the structural

model. The WLSMV-estimated equation accounted for a large proportion of the variance of work engagement ($R^2= 0.56$).



** $p < 0.01$

Figure 1. The structural model (standardised solution with standard errors in parentheses)

The results suggest that the relationships posited in the model account for a substantial amount of covariation in the data. The model accounts for 56% of the variance in work engagement, which lends itself to the empirical support for the fit of the model.

Discussion

Three main hypotheses were tested, namely that selected job resources (i.e. task characteristics, perceived supervisor support and co-worker support) would be the most significant predictors of work engagement in this environment. Conjointly, the results were supportive of two of the hypotheses.

An analysis of the correlations showed that task characteristics, perceived supervisor support and co-worker support were positively related to work engagement.

Task characteristics were strongly related to work engagement in the study. The two dimensions of task characteristics (i.e. task identity and task significance) contributed most to work engagement in the model. Employees seem to express high levels of engagement in jobs where they are involved in tasks from their inception to completion (task identity). Employees that believe that their tasks are necessary for the welfare of others (task significance) measured high on work engagement. These findings are consistent with the results of Munn (2013), who reported that employees expect more than instrumental rewards from their jobs. Specifically, employees want jobs and work environments that satisfy their basic psychological needs. When employees experience their tasks to be imbued with significance and identity, they feel obliged to reciprocate by showing higher levels of engagement (Saks, 2006).

Perceived co-worker support and perceived supervisor support explained a relatively small percentage of the variance in work engagement. This implies that acceptance of individual employees by their fellow workers and feelings of belonging were far less salient in fostering work engagement in this study. This finding is inconsistent with previous studies (e.g. May et al., 2004; Olivier & Rothmann, 2007), which reported a strong relationship between satisfying co-worker relations and work engagement.

The significant contribution made by this study is that, in the mining industry, task characteristics are significantly important relative to the relational context in fostering work engagement, particularly at middle to senior levels. This finding is also interesting in the sense that it challenges the proposition suggested by SDT (i.e. importance of socio-contextual conditions and the satisfaction of basic psychological needs as a basis for understanding factors that improve well-being at work) in this environment, especially as it relates to relatedness support.

Task identity includes whether individuals do an entire piece of work, whether they can figure out how well they are doing, whether they finish the pieces of work they have begun, and whether they have independence and freedom. Task significance refers to the importance of the job, whether others are affected by how well the work gets done, and whether employees can apply initiative and judgment. It is understandable that task identity and significance have

strong effects on work engagement. Task identity and significance were also related to supervisor support. It is concluded that relational context plays a significant role in fostering engagement in this study.

The structural model tested in this study showed that perceived supervisor support affected work engagement. The results of Harter (2009) showed that work engagement is strongly influenced by daily interactions with managers and co-workers at local and workgroup level. The present study confirms the findings of previous research regarding predictors of work engagement (e.g. Olivier & Rothmann, 2007). Precursors measured in this study accounted for 68% of the variance of work engagement.

Strengths and Limitations of the Study

This study yielded significant results that inform our understanding of antecedents of work engagement in the mining environment. However, there are some limitations to this study that should be discussed and that can be used to inform further future research directions. First, the study used a cross-sectional research design with participants from a single platinum mining company in South Africa. Such design implies that variables were not studied over time, thereby restricting the applicability of the results because longitudinal studies may yield different results from the ones obtained by the present study. Future studies are necessary that could work from a broader array of mining companies; thus providing a representative sample of employees in this industry.

A structured measuring instrument was used which could have limited the scope and the extent of relevant questions that could have been asked. The use of supplementary qualitative data such as interviews or focus groups with employees in the mining industry could provide in-depth information that would hone in on affective nature of employees' perceptions of themselves and their experiences within a work environment. Research such as this can further meaningfully inform the companies as well as the industry policies and relevant interventions. Second, the study investigated the psychological aspects of work engagement in the mining sector to obtain a holistic view of engagement in this industry. Future studies should incorporate behavioural perspective as well. Third, the study focused only on three job resources (task characteristics, perceived supervisor support and co-worker support). Considering that mining is a highly unionised environment, including a resource such as *perceived trade union support*

could enrich our model. Therefore future studies should attempt to include a broader range of relevant job resources in this industry.

Lastly, the study relied on the use of self-report measures which could have led to problems of 'common method variance'. Social desirability and response bias are common sources of method related to self-report measures (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, to ameliorate problems linked to self-report data, the survey was conducted anonymously and study participants were assured of confidentiality. To overcome problems associated with self-report measures, future studies might consider multi-source approaches such as collecting some ratings from different sources, such as peers and direct supervisors.

Implications of the Study for Human Resource Management

This study showed that the nature of the tasks employees perform and, to a lesser extent, the depth of relationships they experience with their supervisors and co-workers at the workplace, serve as key factors in fostering work engagement. To create a workplace that is characterised by ubiquitous work engagement, targeted interventions should focus on providing employees with tasks that are imbued with significance and identity and on fostering an environment that maximises employees' perceptions of support they receive from their supervisors and co-workers. Tasks should be designed in such a way that each employee has a clear understanding of the role of his or her job in the overall mission of the organisation. High task identity among employees could be achieved by structuring work tasks such that each task being performed can produce a whole product or at least an identifiable part of it.

Leaders and employees would need to identify new ways of interacting with one another, explore opportunities to practise these new behaviours and foster a collegial spirit among co-workers. Furthermore, an all-inclusive organisation-wide effort would need to be undertaken to re-examine the content of existing jobs with the ultimate aim of redesigning them to integrate characteristics of significance and identity. In conjunction with this exercise, the whole notion of *job crafting*, which involves introducing changes to one's tasks and relationships at work to influence its meaningfulness, should be encouraged, as this would have ongoing positive outcomes for both the individual and the organisation.

Additionally, the activity of cultivating work engagement is a long-term process. Therefore, ongoing surveys in organisations are necessary to assess the levels of engagement for certain

socio-demographic subgroups. Finally, applying guidelines as set out in SDT is crucial in ensuring that efforts to embed engagement are not inadvertently mismanaged, leading to unintended consequences. For example, efforts to build engagement that threatens rather than satisfies the psychological needs (e.g. challenging employees beyond their current levels of competence or requiring commitment that constantly encroaches on their social relationships) will undermine rather than create sustainable engagement (Meyer & Gagné, 2008).

Conclusion

The results of this study showed that task characteristics, perceived supervisor support, and co-worker support were positively related to work engagement. More specifically, the two dimensions of task characteristics (i.e. task identity and task significance) contributed mostly to work engagement relative to the relational context (i.e. perceived supervisor support for employee autonomy, competence and relatedness satisfaction, and co-worker support). Notwithstanding, the relational context is crucial in the work environment, in particular among lower-level employees who value respect and civility in the workplace. These results highlight the fact that when employees experience their work tasks to be imbued with significance and identity, and supervisors support the satisfaction of their needs for autonomy, competence and relatedness, they will feel obliged to reciprocate by showing higher levels of engagement.

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CHAPTER 3

MANUSCRIPT 2

Supervisor Support, Psychological Capital and Job Performance in the Mining Industry

Abstract

This study investigated the relations between supervisor support, psychological capital and job performance. A survey was conducted among 564 employees of a South African mining organisation. The Supervisory Support Scale, Psychological Capital Questionnaire, and Job Performance Scale were administered. The results showed that supervisor support predicted psychological capital and job performance. Psychological capital had a strong impact on job performance. Supervisor support had a small direct effect on job performance. However, supervisor support impacted job performance indirectly via psychological capital (i.e. hope, self-efficacy, resilience and optimism). The findings confirm that autonomy, competence and relatedness support given by supervisors predict psychological capital (hope, optimism, self-efficacy and resilience), and job performance of employees in a mining company.

Keywords: Job performance, supervisor support, psychological capital, hope, resilience, self-efficacy, optimism

The recent wave of productivity concerns in the mining sector, precipitated by employees' refusal to work, necessitate a study of factors that affect job performance (Kappagoda, Othman, & Alwis, 2014). While employees in the mining industry aspire to higher wages, the debate should focus on how productivity can improve to justify salary increases (Ernst & Young, 2013). One of the crucial elements concerning job performance is the influence of supervisor relations on the work environment. Many employees regard their supervisors as role models of positive behaviour (Ibarra, 1999; Peterson & Seligman, 2004; Yammarion, Dionne, Schriesheim, & Dansereau, 2008). Supervisors that possess positive states positively impact their subordinates' states, behaviours and performance (Liden, Wayne, Zhao, & Henderson, 2008).

Psychological capital (PsyCap) represents psychological states that could explain factors that underlie both positive work outcomes and undesirable work behaviours (Avey, Luthans, & Youssef, 2010; Luthans, Avolio, Avey, & Norman, 2007). PsyCap includes four psychological states (Luthans et al., 2007): a) Confidence in one's ability to fulfil job-related tasks (*self-efficacy*). b) A positive attitude toward future success (*optimism*). c) The capacity to set realistic goals and finding alternative pathways for achieving goals (*hope*). d) Persevering when faced with obstacles and challenges (*resilience*).

The dimensions of PsyCap are state-like, thereby suggesting that they can be developed and managed. Importantly, as a high-order construct, PsyCap has more predictive power than its individual dimensions. For this reason, research has proposed that it is more beneficial to focus on the core construct of PsyCap than on its four dimensions separately (Luthans et al., 2007). PsyCap is positively related to positive emotions and engagement (Avey, Wernsing, & Luthans, 2008), performance, satisfaction, commitment (Larson & Luthans, 2006; Luthans et al., 2007), and organisational citizenship behaviour (Avey, Luthans, & Jensen, 2009). Furthermore, PsyCap is negatively related to cynicism, deviant behaviour and intentions to leave (Avey et al., 2009). Its malleability to development and impact on performance makes PsyCap a manageable resource for individuals, teams, units, and organisations (Luthans Youssef, & Avolio, 2015).

Additionally, Avey et al. (2009) observed that supervision played an important role in developing employees' PsyCap. Other studies revealed that PsyCap moderated the negative relationship between perceived supervisor support and undesirable attitudes and behaviours

(job satisfaction and intention to leave) in the workplace. On this basis, positive states of supervisors are suggested to have important consequences for employee work motivation (Stajkovic & Luthans, 2003). In this context, considering a growing reliance on workers' capacities in the unpredictable South African mining environment, a management imperative is created to understand factors that could potentially impact individuals' positive states and thus influence job performance.

The platinum mining sector presents an interesting context for studying the impact supervisor support and employees' psychological capital have on job performance for various reasons. First, the South African platinum sector produces an average of 72% of the world's platinum (Yager, 2011). Second, the labour inactivity in this sector lasted for six months in 2014, resulting in a significant negative impact on the South African economy. This decline in mining and quarrying pulled down the overall gross domestic product by 1.3% (Statistics South Africa, 2014). Clearly, this illustrates the essential role job performance plays in this sector; not only to directly affected organisations but the economy of the country as a whole.

There has been a discernible paucity of studies examining the effects that psychological capital can play in promoting the job performance of employees. Equally, there is a lack of knowledge on how supervisor support influences followers' psychological states towards enhancing their performance. This study aims to investigate how supervisor support could potentially influence the subordinates' psychological capital and, indirectly, their job performance. Research in organisational behaviour has paid little attention to the potential influence of psychological states (as opposed to dispositional, relatively fixed traits) on employee performance (Luthans, Avolio, Walumbwa, & Li, 2005). The construct of psychological capital places emphasis on the positive nature and strengths of employees and the role this has on boosting employees' growth and performance (Luthans et al., 2005). However, there have been very few attempts to determine its impact on the labour-driven industry such as mining (see Luthans, Avey, & Patera, 2008; Avey, Luthans & Youssef, 2010).

Supervisor Support

Research has shown that supervisors are instrumental in providing for employees' innate psychological needs of relatedness, autonomy and competence at the workplace (Hetland, Skogstad, Hetland, & Mikkelsen, 2011). Autonomy refers to self-regulation, within guidelines,

to achieve organisational goals. Competence refers to feeling valued, knowledgeable, skilled, and experienced. Relatedness refers to collaboration with colleagues and co-workers respectively (Deci & Ryan, 2000). Gagne and Deci (2005) and Nielsen, Yarker, Brenner, Randall, and Borg (2008) opined that supervisors are uniquely placed to influence factors that could impact employees' motivation and health. For example, supervisor-subordinate relationships can offer a sense of quality of social connections with others and serve as a place of attachment to purposes and missions. Such relationships tend to be facilitative in nature. In addition to being instrumental in encouraging employees to achieve their performance goals, the supervisor also needs to be expressive and focused on the individuality of workers and establish what they require to fulfil their potential and carry out their tasks (Bass, 1990).

Yukl (2010) has also observed that some leadership styles seem to be better suited than others in increasing motivation and well-being among employees. For example, from a self-determination theory (SDT; Deci & Ryan, 1985, 2000) perspective, transformational leadership is identified as an appropriate style of leadership for this purpose based on its capability to enhance fulfilment of employees' psychological needs (Bass & Avolio, 2004). By definition, transformational leadership implies a visionary and inspirational leader who shows compassion towards his or her subordinates while also stimulating them intellectually (Bass & Avolio, 1995). Bass (1985) argues that the assumption of transformational leadership is that to meet employees' social needs in a workplace, a leader should constantly convey support and compassion to them. Hence transformational leadership relates to the fulfilment of the three inherent psychological needs.

The fulfilment of psychological needs promotes autonomous motivation. Accordingly, individuals would therefore feel free to act, be engaged and exercise freedom of choice (Gagne & Deci, 2005; Stone, Deci, & Ryan, 2009). The work context provides a platform upon which these needs could either be met or thwarted (Hetland, Hetland, Andreassen, Pallesen, & Notelaers, 2011). Underpinning these needs is the extent to which they (needs) are satisfied (Hofer & Busch, 2011). The repeated fulfilment of basic psychological needs within a work environment is related to the general work-related well-being (Deci & Ryan, 2000; Menard & Brunet, 2011) and work enjoyment (Andreassen, Hetland, & Pallesen, 2010). Milyavskaya and Koestner (2011) found that when one's basic psychological needs are satisfied, autonomous motivation will be evoked thereby resulting in positive employee and organisational outcomes.

Transformational leaders could fulfil their subordinates' inherent psychological needs by adopting specific behaviours. In addressing needs for autonomy, a supervisor could embrace an inspirational motivation by encouraging their subordinates through making sure that their tasks are meaningful, challenging, and are provided with regular feedback (Avolio, 1999). In fulfilling needs for competence, supervisors could employ intellectual stimulation approach by galvanising their subordinates to be innovative, analytical, and unorthodox in their approach to situations and challenges at work (Avolio, 1999). The need for relatedness could be fulfilled by providing individualised consideration. This can be facilitated by paying attention to the subordinates' needs such as providing a supportive environment at work, creating opportunities to learn new things, and provide mentorship and coaching, when required (Avolio, 1999).

A supervisor can engender a safe environment by typically being supportive to the employees and showing concern for their well-being, providing feedback on their performance and sharing information, and encouraging them to express their views and concerns openly, developing new skills, and solving work-related problems (Deci & Ryan, 2000). Deci, Connell, and Ryan (1989) argued that supervisors' supportive behaviours towards subordinates will enhance their 'self-determination' and interest at work. According to SDT, 'self-determined' individuals experience a sense of choice in establishing and monitoring their behaviour. Such individuals will feel safe to engage themselves fully in their work and explore new things without feeling threatened by the consequences if they fail (Edmondson, 1996, 1999).

Psychological Capital

Drawing from the field of positive psychology, positive organisational psychology has primarily focused on building knowledge around the understanding of state-like capacities (Luthans et al., 2007; Wright, 2003). These capacities include hope (Snyder, 2000, 2002; Snyder et al., 1996), resilience (Masten, 2001), optimism (Seligman, 1998), and self-efficacy (Bandura, 1997). Psychological capital refers to "an individual's positive psychological state of development that is characterised by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive reference (optimism) about succeeding now and in the future; (3) persevering towards goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success" (Luthans et al., 2007, p. 3). The definition encapsulates four capacities of hope, efficacy,

resilience, and optimism (Luthans & Youssef, 2004). As a higher-order construct, psychological capital predicts employee outcomes better than each of the four capacities on its own (Luthans, Youssef, & Avolio, 2007).

The underlying mechanism linking psychological capital's constituent resources is a positive cognitive, agentic, developmental capacity that promotes "positive appraisal of circumstances and probability of success based on motivated effort and perseverance" (Luthans et al., 2007, p. 550). This can help employees overcome potential negativity and cynicism and to enjoy an upward spiral of vigour, energy, motivation, dedication and determination in relation to the ever-increasing demands, challenges and uncertainties presented by current work environments. Sweetman and Luthans (2010) contend that optimism influences how individuals approach their tasks, for example, those who experience high levels of optimism are always positive when faced with challenges and expect success. Moreover, those high in optimism tend to take credit for the successes and ascribe defeat to external factors (Seligman, 1998).

Research has also shown that employees who experience high levels of psychological capital (compared to those with low levels) perform better at their work tasks (Avey, Reichard, Luthans, & Mhatre, 2011; Luthans, Youssef, & Avolio, 2007). The incongruity in performance can be explained by their constituent psychological capacities that manifest in high cognition and motivation (Luthans & Youssef, 2004). In addition, research showed that psychological capital mediates the relationship between the supportive organisational climate and employee performance (Luthans, Norman, Avolio, & Avey, 2008). The researchers suggested that psychological capital and positive supportive climate are necessary to achieve stable and sustainable organisational growth.

Hope is defined as a psychological strength that manifests in individual capacities and enable him or her to: (i) set clear goals for themselves, (ii) devise ways to achieve those goals, and (iii) implement actions to ensure success (Snyder, 1989, 1994, 2000a, 2000b; Snyder, Harris, Anderson et al., 1991). Hope accentuates other distinctive positive organisational psychology constructs, such as goal theory (Covington, 2000; Dweck, 1999), optimism (Boman, Russo, Furlong, Lilles, & Jones, 2009; Scheier & Carver, 1985), self-efficacy (Bandura, 1982), and problem-solving (Heppner & Peterson, 1982). In this line, Lopez, Snyder, and Teramoto-

Pedrotti (2003) argue that the extent of the impact of *hope* as a construct can be measured. Specifically, hope has been found to influence performance (Snyder, Rand, & Sigmond, 2002).

Self-efficacy is the most researched constituent of psychological capital. Self-efficacy refers to confidence in own abilities and the belief that those abilities will stand one in good stead to make an impact in any sphere of their lives (Bandura, 1977, 1997). Such beliefs influence a person's self-image in terms of their thoughts, feelings, and behaviour. According to Maddux (2002), self-efficacy beliefs determine the individuals' behaviour and the extent to which he or she is prepared to persevere in pursuit of a goal.

Efficacious beliefs can contribute to effective performance at the workplace and also promote personal well-being by encouraging goal-setting and commitment, persistent effort, perseverance, resilience, reduction in stress and depression (Bandura, 2000; Bandura & Locke, 2003). Importantly, self-efficacious beliefs are measurable (Stajkovic & Luthans, 1998) and are malleable to development. It is thus evident that self-efficacious employees are able to expend the requisite effort to meet their work goals, and show a characteristic persistence in doing so because they believe they will succeed.

Peterson (2000) argues that there are two theoretical models that are relevant in defining *optimism*, namely, explanatory style model (Seligman, 1998) and self-regulatory model (Scheier & Carver, 1985). According to Scheier and Carver (1985), optimism has to do with future-based goals whereby an individual anticipates future events to be positive regardless of what could be happening at the present time. In addition, the more value is attached to the expected outcome, the more optimistic the individual becomes. Seligman (1998) defines optimists as those individuals who ascribe success to themselves and their efforts, while failure is attributed to external events. For example, if an optimist achieves good performance ratings from the supervisor, they would attribute the achievement to their hard work, whereas lower ratings would be ascribed to lack of objectivity or support from the supervisor.

In addition, optimists are driven by the belief that if they utilise available knowledge effectively, an undesirable situation can be improved (Gabris, Maclin, & Ihrke, 1998). Furthermore, optimists will view a setback as temporary in nature, while positive results are seen as practically permanent (Seligman, 2002). Whereas optimistic employees make effort to achieve positive results and show trust in their own abilities (Sweetman & Luthans, 2010),

those low in optimism display lack of energy, particularly in emotionally demanding tasks (Parker, 2000). Martin-Krumm, Sarrzin, Peterson, and Famose (2003) demonstrated that even after failing initially, individuals with optimistic style go on to succeed the second time, whilst those who are less optimistic failed again. It is noteworthy that optimism can be developed within individuals (Seligman, 1990).

Luthans (2002) defines *resilience* as the “positive psychological capacity to rebound, to ‘bounce back’ from adversity, uncertainty, conflict, failure, or even positive change, progress and increased responsibility” (p. 702). It is portrayed as a unique human disposition that allows an individual to cope with setbacks (Masten & Reed, 2002). Several studies have found correlations between resilience and other positive organisational outcomes. For instance, a positive relationship has been reported regarding employees’ resilience and their commitment and job satisfaction (Youssef & Luthans, 2007). Also, Luthans et al. (2005, 2008) found a positive correlation between resilience and job performance among Chinese factory workers. Richardson (2002) further found that resilience can strengthen further when the individual returns to levels above point of stability following an adversity. This implies that individuals may become even more resilient to a negative situation each time they bounce back from a previous setback, resulting in an upward spiral effect (Fredrickson & Joiner, 2002). Research showed that resilience predicts work-related outcomes and that it can be developed (Luthans, Avey, Avolio, Norman, & Combs, 2006; Luthans, Vogelgesang, & Lester, 2006). Other recent studies have also demonstrated a positive correlation between resilience and employee performance (Luthans et al., 2007).

Job Performance

Job performance is one of the critical levers for organisational success. It reflects behavioural actions that can be controlled by the individual, promote attainment of organisation’s goals, and can be measured (Rotundo & Sackett, 2002). Rothmann and Coetzer (2003) demonstrated that, as a multi-dimensional construct, job performance displays the extent to which employees perform their tasks, the level of initiative they take, and how enterprising they are in solving problems. Job performance elucidates some distinct features, which include a focus on those behaviours that are under the individual’s control and that contribute to the organisation’s goals.

Campbell (1990, 1999, 2012) describes job performance as an individual level variable, a feature that distinguishes it from other more encompassing constructs such as organisational performance or national performance which are higher-level variables. He further draws a distinction between performance and outcomes, where the latter is the results of an individual's performance, but could be the result of other influences as well. Moreover, he emphasises that performance does not only comprise observable actions of an individual, but can also consist of intellectual outcomes such as the quality and type of responses or decisions. A review of the literature indicates that job performance is a multidimensional concept (Campbell, McCloy, Oppler, & Sager, 1993; Murphy, 1990) that can be subdivided into task (or in-role) performance and contextual (or extra-role) performance.

Task performance has been described by the seminal study of Murphy (1989) as the extent to which an incumbent accomplishes duties and responsibilities of a given job. Bornman and Motowildlo (1993) added a dimension to this definition by alluding to task performance as relating to activities that are formally recognised as part of the job and that contribute directly to the organisation's objectives. In refining their definition of the concept, Bornman and Brush (1993) used the term 'technical activities' to describe behaviours that demonstrate technical proficiency of the job. The foregoing conceptualisations of task performance include two key features. First, it requires that activities contribute to the technical core (i.e. the process by which raw materials are converted into the products) (Bornman & Motowildlo, 1993), and second, be formally recognised as part of the job (Rotundo & Sackett, 2002).

Although the domain of task performance explains an important component of the job criterion, Rotundo & Sackett (2002) maintain that in trying to understand the concept of job performance other activities that are not necessarily core task-related but contribute to the overall organisation in a positive way, also need to be studied. For instance, activities such as those demonstrating effort, facilitating peer and team performance (Campbell, 1990), altruism, conscientiousness (Organ, 1988), organisational role (Webourne, Johnson, & Erez, 1998), and affiliative-promotive behaviour (Van Dyne, Cummings, & Parks, 1995) are equally important. Contextual (or citizenship behaviour) performance will include behaviours that contribute to the goals of the organisation by contributing to its social and psychological environment.

Another dimension of job performance is linked to what is known as personal initiative. Personal initiative in general terms denotes proactive, self-starting and persistent work

behaviour exhibited by the individual in their effort to achieve a particular goal. In doing so, they also have to be driven to overcome obstacles that arise along the way (Frese, Fay, Hilburger, Leng, & Tag, 1997; Frese, Kring, Soose, & Zempel, 1996). Initiative often requires determination and self-discipline, which are instrumental in propelling an individual to persist in the face of barriers (Parker, Bindl, & Strauss, 2010). Individuals who take initiative at work make a significant contribution toward better organisational outcomes (Frese et al, 2007). Initiative can be undertaken as both contextual (extra-role) and task (in-role) behaviour. As extra-role behaviour, it involves individuals undertaking task-related behaviours at a level that is beyond the required or expected levels of performance (Podsakoff, MacKenzie, Paine, & Bachrach, 2000), while as in-role behaviour it involves individuals devoting high levels of effort in core tasks and assigned responsibilities (Frese & Fay, 2001; Grant & Ashford, 2008).

Aragon-Correa (1998) argues that in order to achieve positive outcomes, individuals, teams, and organisations must anticipate events and act upon the demands of the external environment in proactive and autonomous ways. Additionally, to achieve better results, individuals need not only rely on work instructions and guidance from their supervisors, rather they should also find better ways of working on their own initiative (Crant, 2000; Parker, 1998).

Aim and Hypotheses

The purpose of this study was to investigate the relation between supervisor support and the employees' positive psychological capital and how these can influence job performance of workers in a platinum mining company. An understanding of factors that contribute to enhanced job performance among employees in this mining organisation would provide scientifically based insights on these factors and inform requisite interventions that could bolster job performance.

The following hypotheses are conjectured based on the preceding discussions:

Hypothesis 1: Supervisor support (i.e. support for the satisfaction of employees' needs for competence, relatedness, and autonomy) has a positive impact on the employees' psychological capital.

Hypothesis 2: Employees' psychological capital has a positive impact on their job performance.

Hypothesis 3: Supervisor support (in terms of support for the satisfaction of employees' needs for competence, relatedness, and autonomy) has a positive effect on the employees' job performance.

Hypothesis 4: Supervisor support (support for the satisfaction of employees' needs for competence, relatedness, and autonomy) indirectly affect job performance via psychological capital.

Method

Research design

A cross-sectional survey design was utilised in this study (Huysamen, 2004). Within the cross-sectional design, latent variable modelling was used to investigate the fit of the hypothesised models (Muthen & Muthen, 1998–2014).

Participants

The sample consisted of employees of a platinum mining company based at different work locations across South Africa. A stratified random sampling technique was used to send the questionnaire to approximately 980 employees, of which 564 were properly completed and found usable for the purposes of the present study yielding a response rate of 57.5%. Employees were included from all racial groups, job levels, educational levels, and departments ranging from semiskilled to executive level professionals. The respondents were mostly of African origin (51.6%), males (64.9%), married and have children (58.2%), and Afrikaans speaking (35.6%). The majority of respondents fell within the 31–39-year age category (36.7%), with the minority (5.9%) of respondents older than 55 years. Educational level revealed that the majority (34.8%) of participants have a Grade 12 qualification. The majority of participants had worked for the company for a period ranging from 6 to 10 years (36.7%) and most of them were at middle management level (40.8%). A large number of respondents (41.3%) who took part in this study were employed in the mining division side of the business.

In line with the guidelines recommended when the stratified random sampling technique is used, the following three steps were adopted: First, the overall sample size was determined; second, the total sample was clearly delineated into each stratum, that is, each unit from the population must only belong to one stratum; and third, a number of respondents were chosen from each stratum using random sampling method. Three factors were considered in determining the sample size: (1) the degree of variability in the population; (2) magnitude of

acceptable error; and (3) confidence level to ensure that the estimates would remain within the range of acceptable error (Zikmund, 2003). The characteristics of the respondents are reported in Table 1 below.

Table 1

Characteristics of Participants (n = 564)

Item	Category	Frequency	Perce-n-tage
Gender	Male	366	64.9
	Female	198	35.1
Age	21 – 30	110	19.5
	31 – 39	207	36.7
	40 – 45	103	18.3
	46 – 55	111	19.7
	Over 55	33	5.9
Educational level	Grade 12 (Std. 10)	196	34.8
	Technical College Diploma	75	13.3
	Technikon Diploma	70	12.4
	University Degree	125	22.2
	Postgraduate Degree	98	17.4
Years in company	Less than 3	44	7.8
	3 to 5	109	19.3
	6 to 10	207	36.7
	11 to 15	103	18.3
	16 to 20	49	8.7
	21 to 25	25	4.3
	26 to 30	18	3.2
Job level	Over 30	10	1.8
	Executive Management (Band 3)	3	0.5
	Senior Management (Band 4 and 5)	56	9.9
	Middle management (Band 6 and 7)	230	40.8
	Junior Management (C3- C5)	118	20.9
	Graduates-In-Training (C2-C4)	31	5.5
	Administrative staff (C1-C2)	77	13.7
	Skilled professional (Tradespersons)	38	6.7
Trained labourers	11	1.9	

Measuring Instruments

Three measuring instruments were used for the purposes of this study, namely, the Supervisory Support Scale (SSC), Psychological Capital Questionnaire (PCQ), and Job Performance Scale (JPS). Also, a biographical data sheet was developed.

Perceived supervisor support was measured using the Supervisory Support Scale (SSC; Palo & Rothmann, 2015). This measure assessed employees' perception of autonomy support, competence support, and relatedness support at work. The 23-item survey used a five-point Likert-type scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Examples of items include: "My supervisor takes the time to learn about my career goals and aspirations", "My supervisor treats me in a humane way" and "My supervisor shows he or she understands how specific actions impact on others". The internal consistencies of this scale range between 0.91 and 0.96 (Palo & Rothmann, 2014).

Psychological Capital was measured using the Psychological Capital Questionnaire (PCQ; Luthans et al., 2007), consisting of 24 items. The PCQ is designed to assess the four components of psychological capital: hope, self-efficacy, optimism, and resilience, with each component being assessed by six items. A sample item used for assessing the hope facet is "I can think of many ways to reach my current goals". An example of items that measured efficacy includes "I feel confident in representing my work area in meetings with management." Optimism was measured with items such as "I'm optimistic about what will happen to me in the future as it pertains to work", and an example of items that were used to measure resilience include "I can get through difficult times at work because I've experienced difficulty before". Responses were reported via a Likert-type scale varying from 1 (strongly disagree) to 6 (strongly agree). Because psychological capital is a higher-order construct, the four key psychological capital capacities have a synergetic effect (Luthans, Avey et al., 2008). The average score for the total scale were calculated to get the composite psychological capital value in this study, with higher scores indicating more psychological capital. According to Luthans et al. (2007), the resulting score indicates the level of an individual's positive psychological capital. Acceptable Cronbach alphas were found for the PCQ in previous studies ranging from 0.88 to 0.89 (Luthans et al., 2007).

Job performance was assessed by sixteen items from the Goodman and Svyantek scale (1999). Two different sub-scales were considered: in-role performance (9-items; e.g., “I perform well in the overall job by carrying out tasks as expected”) and extra-role performance (7-items; e.g., “I assist others with their duties”). Participants answered using a 7-point Likert-type scale varying from 0 (*not at all characteristic*) to 6 (*totally characteristic*). The internal reliabilities for in-role performance and extra-role performance measures are on 0.90 and 0.88 respectively (Goodman & Svyantek, 1999).

A *biographical questionnaire* provided the record of socio-demographic and biographical data of participants including age, gender, race, language, marital status, level of education, department where employed, and period of tenure with the organisation and in current role.

Research Procedure

Ethical approval was obtained from the ethics committee of the participating university. Prior to commencement of the study, the researcher sought permission from the senior management of the participating organisation to conduct the study. Once permission had been granted, an e-invitation letter was sent out to all sampled employees (up to the executive management level) of the mining company. The objectives of the study were enunciated to potential participants and written consent to participate in the study was requested. Participation was voluntary. Confidentiality and anonymity were assured. The invitation included a web link for access to the survey. The design of the questionnaire was such that participants could complete individual sections of the survey, one section at a time, before submitting their completed questionnaire response. The data were collected during the period of August 2013 and April 2014, and at least three reminders were sent to participants during this time to urge them to submit their completed responses.

Data Analysis

Statistical analyses of the data were performed using Mplus version 7.31 (Muthen & Muthen, 1998-2014). Items of the three questionnaires were defined as categorical and the weighted least squares with corrections to means and variances (WLSMV) were used as estimator. The following indices produced by Mplus were used in this study: (a) absolute fit indices, including chi-square statistic, which is the test of absolute of the model, and the Root Mean Square Error

of Approximation (RMSEA), and (b) incremental fit indices, including Tucker-Lewis Index (TLI) and the Comparative Fit Index (CFI; Kline, 2010). TLI and CFI values higher than 0.90 are considered acceptable. RMSEA values lower than 0.08 indicate a close fit between the model and the data (Hair, Black, Babin & Andersen, 2010). Two fit statistics, namely the Akaike Information Criterion (AIC; a comparative measure of fit; it is meaningful when different models are estimated) and Bayes Information Criterion (BIC; an index of model parsimony) were used to compare alternative measurement models (Kline, 2010).

Reliabilities (ρ) of scales were computed by means of a formula based on the sum of squares of standardised loadings and the sum of standardised variances of error terms (Raykov, 2009; Wang & Wang, 2012).

Results

The results of the study are reported below. First, the results of tests of competing measurement models are reported, followed by the results of tests of alternative structural models.

Testing Measurement Models

Using the confirmatory factor analysis (CFA), a three-factor model as well as alternative models were tested to assess whether items would load significantly onto the scales they were associated with. The assessment of model fit was based on a number of goodness-of-fit-statistics (i.e. CFI, TLI, and RMSEA).

Given the cross-sectional nature of the study, four measurement models were tested. Model 1 consisted of three latent variables, namely a) supervisor support (measured by three observed variables; b) psychological capital (measured by four observed variables; and c) job performance (measured by three observed variables). All latent variables in model 1 were allowed to correlate. Models 2, 3, and 4 followed the same template: Model 2 was specified with 22 observed variables measuring supervisor support (without the three first-order latent variables, namely competence support, relatedness support and autonomy support); Model 3 was specified with 24 observed variables measuring psychological capital (without four first-order latent variables, namely hope, efficacy, resiliency and optimism); and Model 4 was specified with all items loading on a single factor (measured by 63 observed variables).

Table 2 presents the fit statistics of competing measurement models.

Table 2

Fit Statistics of Competing Measurement Models

Model	χ^2	<i>df</i>	CFI	TLI	RMSEA	AIC	BIC
1	4127.08	1759	0.87	0.87	0.049	82207.68	83044.35
2	4355.67	1761	0.86	0.86	0.051	82505.98	83333.98
3	4177.40	1760	0.87	0.87	0.049	82269.82	83102.15
4	10663.24	1769	0.52	0.50	0.094	90503.54	91296.85
1.1	3810.57	1757	0.89	0.89	0.046	81821.20	82666.54
1.2	3313.33	1583	0.90	0.90	0.04	75982.31	76788.63

χ^2 = chi-square; *df* = degrees of freedom; AIC = Akaike Information Criterion; BIC = Bayes Information Criterion.

When comparing any two models, the smaller AIC and BIC values indicate the preferred model (Vermunt & Magidson, 2005). The AIC and BIC values of Model 1 were the lowest of the four models. Comparison of fit indices thus indicates that Model 1 fitted the data best. The χ^2 (1759, 564) = 4127.08 of the hypothesised model was statistically significant ($p < 0.001$), but the other fit indices indicated good fit of the model to the data: CFI = 0.87, TLI = 0.87, RMSEA = 0.049. Standardised coefficients from items to factors ranged from -0,124 to 0,350. The results also indicated that the relationship between each observed variable and its respective construct was statistically significant ($p < 0.01$).

Reliabilities of and correlations among supervisor support, psychological capital, and job performance scales are reported in Table 3.

Table 3

Reliability Coefficients and Correlations of the Scales (N = 564)

Variable	ρ	1	2	3	4	5	6	7	8	9
1. Competence support	0.94	-	-	-	-	-	-	-	-	-
2. Relatedness support	0.96	0.92**	-	-	-	-	-	-	-	-
3. Autonomy support	0.91	0.92**	0.98**	-	-	-	-	-	-	-
4. Self-efficacy	0.89	0.26**	0.23**	0.23**	-	-	-	-	-	-
5. Hope	0.86	0.29**	0.31**	0.31**	0.72**	-	-	-	-	-
6. Resilience	0.68	0.26**	0.23**	0.23**	0.63**	0.72**	-	-	-	-
7. Optimism	0.72	0.27**	0.29**	0.29**	0.66**	0.75**	0.66**	-	-	-
8. Performance: Contextual	0.85	0.12**	0.13**	0.13**	0.49**	0.55**	0.49**	0.51**	-	-
9. Performance: Initiative	0.67	0.12**	0.13**	0.13**	0.52**	0.59**	0.52**	0.54**	0.70**	-
10. Performance: Task	0.90	0.13**	0.14**	0.14**	0.54**	0.61**	0.54**	0.56**	0.73**	0.78**

* $p < 0.05$; ** $p < 0.01$

Table 3 shows that all variables were statistically significant ($p < 0.01$) and positively related. Components of supervisor support relevant to this study (i.e. supporting employees' needs for competence, relatedness, and autonomy) are practically significantly correlated with the four capacities of PsyCap (i.e. self-efficacy, hope, resilience, and optimism). They all reflect a small effect correlation except for the dimension *hope* which has a medium effect.

Other important findings indicate that capacities of PsyCap correlated practically significantly with the three components of job performance (i.e. contextual performance, initiative, and task performance). These correlations showed a large effect, except between 'self-efficacy and contextual performance', and between 'resilience and contextual performance', which both showed a medium effect. Lastly, correlations between components of supervisor support and components of job performance were all practically significant and showed a small effect.

This study hypothesised that (1) supervisor support (in terms of support for employees' needs for competence, relatedness, and autonomy) has a positive impact on the employees' psychological capital, (2) employees' psychological capital has a positive impact on their job performance, (3) supervisor support (in terms of support for employees' needs for competence, relatedness, and autonomy) has a positive impact on employees' job performance, and (4) supervisor support (in terms of support for employees' needs for competence, relatedness, and

autonomy) indirectly affects job performance via psychological capital. Based on correlations reported above, it can be reasonably concluded that supervisor support does indeed impact on all four capacities of the employees' psychological capital, namely self-efficacy, resilience and optimism. Moreover, employees' psychological capital also shows a positive relationship with job performance, namely, contextual performance, initiative, and task performance. Supervisor support has also showed a positive impact on employees' job performance, namely contextual performance, initiative and task performance. Lastly, based on the above correlations, it is plausible to deduce that supervisor support indirectly affects job performance via employees' psychological capital. Therefore, hypotheses 1, 2, 3, and 4 can be accepted.

Testing Structural Models

Table 3 shows that the reliabilities of the constructs were acceptable compared to the guideline of 0.70 (Wang & Wang, 2012), with the exception of the reliability scales that measured PsyCap (Resiliency) and Performance (Initiative) which were slightly below the recommended cut-off value of 0.70. Therefore the results regarding Resiliency and Initiative should be interpreted with caution. Furthermore, the correlations between all other constructs in the model were statistically significant ($p < 0.01$).

The measurement model formed the basis of the structural models. The hypothesised relationships were tested using the latent variable modelling as implemented by Mplus (Muthén & Muthén, 1998-2014). An acceptable fit of the hypothesised model (model 1) to the data was found: $\chi^2 = 4127.08$, $df = 1759$, $TLI = 0.87$, $CFI = 0.87$, $RMSEA = 0.049$. These statistics indicate a fair fit for the hypothesised model but not an excellent fit. Table 4 shows the standardised regression coefficient estimated by Mplus for the structural model.

Given the cross-sectional nature of the data, three other competing models were also tested: Model 2 included paths from supervisor support to psychological capital and job performance; but the path from psychological capital to job performance was constrained to zero. Model 3 included a path from supervisor support to psychological capital, and from psychological capital to job performance, but a path from supervisor support to job performance is constrained to zero. Model 4 included a path from supervisor support and psychological capital to job performance, but the path from supervisor support to psychological capital was constrained to zero. The following changes to chi-square ($\Delta\chi^2$) were found: Model 1 and 2 ($\Delta\chi^2 = 228.59$, Δdf

= 2, $p < 0.01$); Models 1 and 3 ($\Delta\chi^2 = 50.32$, $\Delta df = 1$, $p < 0.01$; Models 1 and 4 $\Delta\chi^2 = 6536.16$, $\Delta df = 10$, $p < 0.01$). These results indicate that Model 1 indeed fits the data statistically significantly better than the other three models.

Figure 1 and Table 4 depict the standardised regression coefficients estimated by Mplus for the hypothesised model.

Table 4
Standardised Regression Coefficients of the Variables

Variable	Estimate	SE	Est/SE	<i>P</i>
<i>Psychological capital on</i>				
Supervisor support	0.350	0.048	7.344	0.000**
<i>Job performance on</i>				
Psychological capital	0.799	0.038	20.791	0.000**
Supervisor support	0.124	0.042	2.935	0.003**

SE, standard error; Est/SE, estimate divided by standard error

* $p < 0.05$; ** $p < 0.01$

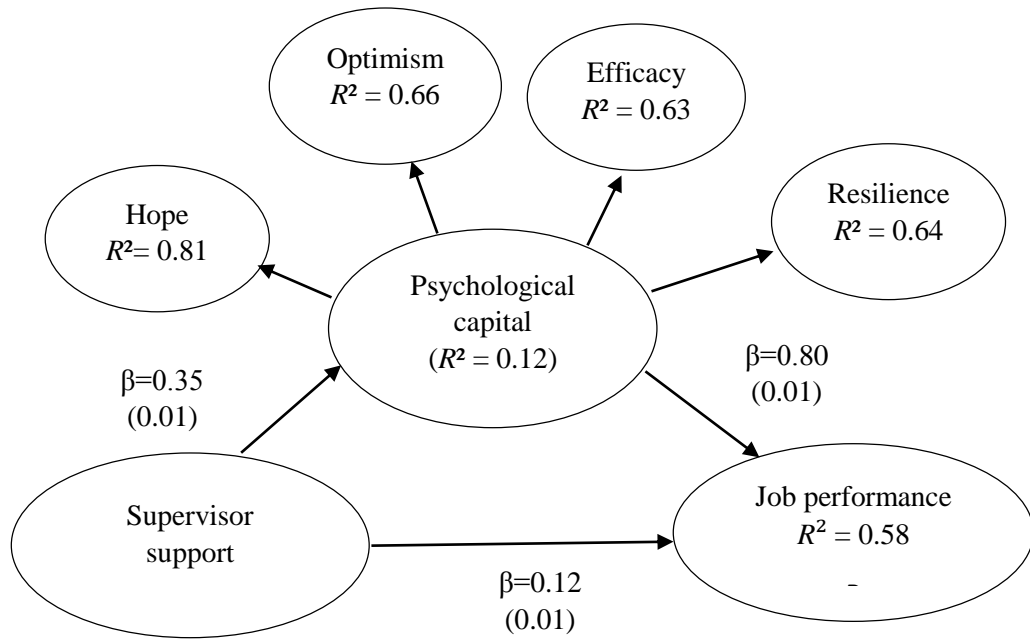


Figure 1. The structural model (standardised solution with standard errors in parentheses)
 ** $p < 0.01$ (Only statistically significant paths are included in the figure).

In the next section, the relations obtained for the best fitting and most parsimonious structural model (model 1) are discussed regarding the stated hypotheses of the study.

For the portion of the model predicting psychological capital, Table 4 indicates that the regression coefficient of the supervisor support ($\beta = 0.35$, $p < 0.0$) was statistically significant and had the expected sign. Psychological capital had a positive relation with supervisor support. The WLSMV-estimated equation accounted for a large proportion of the variance in psychological capital ($R^2=0.12$). Hypothesis 1 is supported. For the portion of the model predicting job performance, Table 4 indicates that the path coefficient of psychological capital ($\beta = 0.80$, $p < 0.0$) was statistically significant and had the expected sign. Psychological capital had a positive relationship with job performance. Hypothesis 2 is supported. Furthermore, the regression coefficient of supervisor support ($\beta = 0.12$, $p < 0.0$) was statistically significant and had expected signs. Supervisor support had a moderate relation with job performance. The WLSMV-estimated equation accounted for a large proportion of the variance in job performance ($R^2 = 0.58$). Hypothesis 3 is thus supported.

Indirect Effects

To determine whether any relationships in the model were indirectly affected by supervisor support, the procedure explained by Hayes (2013) was used. Bias-corrected confidence intervals (BC CIs) as obtained through bootstrapping (5000 samples) were computed to determine indirect effects. Lower and upper CIs are reported (see Table 5).

Regarding the indirect effects of supervisor support on job performance, the 95% CIs for psychological capital did not include zero, thereby indicating a significant indirect effect. Hypothesis 4 is supported, namely that supervisor support (in terms of support for competence, relatedness, and autonomy needs) indirectly affects job performance via psychological capital.

The results suggest that the relations posited in the model account for a substantial amount of co-variation in the data. The model accounts for 12% of the variance in psychological capital and 58% of the variance in job performance, thereby lending more empirical support to the model fit.

Table 5

Indirect Effects of Supervisor Behaviour on Performance

Variable	Estimate	SE	95% BC CI	
			Lower CI	Upper CI
Supervisor support	0.279	0.042	0.298	0.609

SE = standard error; 95% BC CI = 95 per cent bias-corrected confidence intervals

Discussion

This study set out to investigate the relation between supervisor support and employees' psychological capital and to assess how these constructs could impact on the job performance of employees in a platinum mining company. The results showed that supervisor support and employees' psychological capital accounted for a large proportion of the variance in job performance. Supervisor support was positively associated with experiences of positive psychological capital of workers, which in turn predicted high job performance. An analysis of

the indirect effects showed that psychological capital mediated the relationship between supervisor support and employee job performance, while supervisor support had a small direct effect on job performance.

The supportive supervisor showed a strong effect on psychological capital (it explained 12% of the variance). Supervisors who provide support for the three basic psychological needs of their employees contribute to their employees' levels psychological capital. This finding confirms those of Liu, Siu, and Shi (2010). A positive relationship between supervisor and employee contributed to trustworthy and supportive relationships in social exchanges outside the workplace and enhanced the employees' social well-being. Supervisors who show support to their employees are typically characterised by behaviours such as offering their subordinates choices, acknowledging their feelings, taking into consideration their viewpoints on issues and making an effort to explain logic and rationale behind organisational rules and demands (Mageau & Vallerand, 2003).

The results confirmed that psychological capital was strongly related to job performance in this study. This result supports findings by Avey et al. (2011), Bandura and Locke (2003), Luthans et al. (2005), Luthans, Avey, Avolio, and Peterson (2010), who also found a positive correlation between psychological capital and job performance outcomes. A positive correlation was also found between various capacities of psychological capital and job performance, namely optimism (Carr & Gray, 1996), resilience (Luthans et al., 2005), self-efficacy (Bandura, 2000; Bandura & Locke, 2003), and hope (Luthans et al., 2005; Luthans et al., 2007).

Supportive supervisor relations did not contribute directly significantly towards employees' job performance in the structural model. This implies that when supervisor support increases, employees' job performance does not necessarily increase. This is surprising because much of previous research (e.g. Gagnon & Michael, 2004; Shanock & Eisenberger, 2006) has argued that supervisor relations is an integral resource that could enhance employee job performance and increase commitment to the organisation. Notwithstanding, there could be a number of reasons for this finding ranging from employees (in this case, middle managers and supervisory personnel who comprise the majority of the study sample) who are generally dissatisfied with their jobs to cynicism towards the employer based on previous negative work-related experiences (Abraham, 2000). For instance, the amount of power that the trade union movement seems to wield at the workplace could be another factor that may have an adverse

effect on the middle management level to leverage influence over the job performance of their employees. Although supervisor relations was not a significant predictor of job performance in the structural model per se, this does not preclude the importance of this kind of support in fostering job performance. In fact, numerous studies have shown that supervisor support is positively related to job performance (Chiaburu & Tekleab, 2005; Gupta & Govindarajan, 2000; Ismael, Chandra Segaran, Cheekiong & Ong, 2007; Shanock & Eisenberger, 2006).

An analysis of the indirect effects showed that strong supervisor support affected job performance via experiences of high psychological capital. This result supports a previous finding by Luthans, Norman et al. (2008) that supportive climate, positivity in general and psychological capital in particular, may have the desired impact on employees' actual performance.

Based on the findings of this study, it can be concluded that supervisor support has a strong association with job performance albeit through psychological capital. Additionally, a direct relation exists between supervisor support and job performance. However, it is very moderate. This study presents a compelling argument for managers and supervisors in the mining industry to provide the necessary support to their employees to promote their psychological resources. This would, in turn, contribute to higher levels of job performance at work. Strategies and interventions aimed at combating low levels of job performance in organisations should consider leadership support in concert with psychological capital.

This study had some limitations. First, due to the cross-sectional design of the study, it was not possible to establish the causal relationships. A longitudinal study would be more value adding in this regard. Second, the study was limited to only one mining organisation in South Africa. Future studies might seek to include samples from all mining companies as the industry is diverse and could present various dynamics. Third, the use of self-report measures is subject to common method variance, which could have affected the results (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Participants might have responded to questions in socially appropriate ways. Lastly, self-reports might have confined the responses of the participants to only those of items used in the scale, thereby fail to capture the richness and variety of possible responses (Sulky & Smith, 2005).

Recommendations

Given the important role played by supervisor support in promoting employees' psychological capital, which in turn bolsters job performance, managers and supervisors would be well advised to recognise their own positional strength in this regard. As indicated elsewhere in this study, employees tend to emulate their leaders' behaviours and when leaders become authentic role models to their subordinates there is a plausible chance of contagion effect taking place.

Managers and supervisors would need to create a work environment that supports the psychological needs of their employees (i.e. needs for competence, relatedness and autonomy). This could be achieved by ensuring, amongst others, that employees are given the latitude to share their opinions and make choices, are provided with positive feedback, and are shown support and experience care in the workplace.

Furthermore, to promote high levels of psychological capital within organisations, managers and employees need to be taken through a systematic psychological capital training intervention (Luthans et al., 2008). It would also be recommended that such training prioritise individuals at leadership levels in the initial stage of implementation because, according to Wang, Sui, Luthans, Wang, and Wu (2014), compelling evidence exists to suggest that the combined congruence between leadership behaviours and employees' psychological resources promote employee performance.

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CHAPTER 4

MANUSCRIPT 3

Perceived Organisational Support, Supervisor Support, Co-worker Support, Psychological Capital and Intention to Leave

Abstract

The aim of this study was to investigate the relations among perceived organisational support, supervisor support, co-worker support, psychological capital, and intention to leave in a platinum mining organisation in South Africa. A cross-sectional survey design was used, with stratified random sample ($n=564$) taken from employees of a mining organisation. The following measuring instruments were used: Survey of Perceived Organisational Support, Supervisory Support Scale, Social Support Scale, Psychological Capital Questionnaire, Turnover Intention Scale, and a biographical data sheet. The results showed that perceived organisational support had a direct and positive effect on psychological capital and a negative effect on intention to leave. No indirect relationship was found between supportive climate and intention to leave via psychological capital in this study. Creating a supportive climate at the workplace will go a long way in attenuating the frequency of intention to leave the organisation.

Retaining human capital has been found to have positive implications for an organisation's competitive advantage (Luthans & Youssef, 2004). The loss of qualified and skilled employees through employee voluntary turnover may compromise the organisation's competitive edge. It is therefore not surprising that practitioners and researchers alike have been constantly preoccupied with investigating which factors influence the phenomenon of employee turnover. More specifically, turnover intention refers to an individual's notion that he or she would want to quit the organisation, and this is regarded as the final stage in the decision-making process of an employee to search for alternative employment opportunities elsewhere. The intention to leave an organisation is one of the most important precursors to actual turnover (Kash, Naufal, Cortes, & Johnson, 2010; Waters & Roach, 2006). This is because, according to the Planned Behaviour Theory (Ajzen, 1991), individual intentions or plans determine the eventual behaviour. Given that intention to leave precedes actual turnover (Blau, Tatum, & Ward-Cook, 2003; Sousa-Poza & Henneberger, 2002) and the fact that employee turnover is costly (Tuzun & Kalemci, 2012), mitigation of turnover behaviours within an organisation requires an all-encompassing understanding of factors that lead employees to harbour these thoughts.

Schultz and Grimm (2008) argue that within the mining sector there are more people leaving the industry than those entering to pursue career opportunities. Researchers acknowledge that this phenomenon leads to acute scarcity of talent and knowledge in the mining industry. There is also a wide recognition among mining companies that persistent shortage in skills supply is having adverse effects on productivity and profitability of mining operations (Schultz & Grimm, 2008). More specifically, the shortage of skilled workers coupled with high turnover rates are among the top factors affecting planned industry expansions (Schultz & Grimm, 2008). Consistent with this view, the Canadian Mining Journal (2008) observed that skills shortage is a gradual major threat to the mining industry. Furthermore, a mining report released by Ernest and Young (2008) has shown that the demand for technical skills and other mining-related trades is remarkably high, yet the pool of proficient professionals and technically skilled individuals emerging from training institutions and other feeder streams in the market is insufficient. As a result, competition for suitably skilled and experienced categories of employees is ever increasing.

Following an extensive research with the Gallup organisation, Buckingham and Coffman (2005) came to the conclusion that when employees decide to leave the organisation, they are in fact leaving their managers and not the organisation per se. This implies that managers and

supervisors as agents of the organisation remain one of the crucial factors in retaining employees. These findings bring into focus the importance of retaining current skills in organisations and the role that can be played by supervisors and managers in creating an environment where people would willingly like to work.

Employee turnover has been extensively researched notably in the United Kingdom, United States and Australia (Holtom, Mitchell, Lee, & Eberly, 2008). However, employee turnover in the mining industry in South Africa has not received specific attention. This study aims at filling the gap in the literature in that mining underpins the South African economy making an indelible contribution toward employment opportunities, the gross domestic product and export earnings (Chamber of Mines, 2013). Therefore it is prudent to ensure that requisite skills are retained in the industry to avoid unnecessary voluntary employee turnover. If reasons for turnover intent are known, organisations will be able to institute strategies that may mitigate the potential turnover.

Perceived Organisational, Supervisor and Co-worker Support

Perceived organisational support (POS) is premised on the belief that employees form opinions regarding the extent to which an organisation attach value to their individual contributions and cares about their well-being based on their perceptions of how prepared the organisation is to reward their work effort and to devote time and energy to support emotional needs and maintain their employees as a social unit (Dawley, Houghton, & Bucklew, 2010). POS is comprised of role clarity (Eisenberger, Rhoades, & Cameron, 1999; Zapf, Knorz, & Kulla, 1996), job information (Schat & Kelloway, 2003), participation in decision making (Allen, Shore, & Griffeth, 2003), support from co-workers (Djurkovic, McCormick, & Casimir, 2004), and supervisory support (Setton, Bennett, & Linden, 1996). POS promotes job satisfaction (Eisenberger, Cummings, Armeli, & Lynch, 1997), enhance job performance (Shanock & Eisenberger, 2006), increases levels of commitment (Hochwarter, Kacmar, Perrewe, & Johnson, 2003), and diminish turnover rates (Allen et al., 2002; Rhoades & Eisenberger, 2002).

Research has further shown that employers put value on employee dedication and loyalty. The reason for this is that employees who are emotionally committed to the organisation show improved performance, lessened absenteeism tendencies, and diminished propensity to turnover (Mathieu & Zajac, 1990; Meyer & Allen, 1997). Conversely, employees are also

generally more concerned with the organisations' commitment to them. It is argued that being valued by the organisation can accrue a number of benefits to the employee, such as social approval and respect, increased pay and promotion opportunities, and access to important information and other forms of assistance required to facilitate execution of their jobs (Eisenberger et al, 1997). The social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) are arguably two of the most well-known models that can be used to explain how employers and employees can reconcile these dichotomous orientations. Furthermore, these two models have also been long used by researchers to describe the motivational basis behind employee behaviours and encouraging factors for positive employee attitudes.

The social exchange theory suggests that a social exchange occurs when an individual is drawn to another and he or she expects that this association could potentially lead to some social rewards (Blau, 1964), while the norm of reciprocity states that when one person treats another well, there is an obligation on the other party to return the favourable treatment (Gouldner, 1960). Drawing upon social exchange theory, researchers have argued in addition to impersonal resources such as money, services, and information, employer-employee exchange is denoted by socio-emotional resources such as approval, respect, and support (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001). According to Fuller, Barnett, Hester, and Relyea (2003), when employees feel that their organisation show its appreciation to them, it signals organisational respect or their high status within the organisation. The more employees perceive the organisational support, the more they feel respected and esteemed in the organisation and expect that their performance will be rewarded. This attitude invariably propagates a strong sense of belonging to the organisation (Rhoades, Eisenberger, & Armeli, 2001). In this way, individuals may identify with the organisation, thereby develop a tendency to perceive the organisation's successes as well as its failures as their own (Loi, Hang-Yue, & Foley, 2006). Importantly however, POS shows a negative relationship with intentions to leave (Hui, Teo, & Lee, 2007; Kinnunen, Feldt, & Makikangas, 2008), thereby proposing that employees who experience high perceived organisational support will in all likelihood stay with the organisation.

In the same vein, employees in organisations inevitably develop opinions concerning the extent to which supervisors recognise the worth of their work contributions and care about their welfare (Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002). In this line, perceived supervisor support (PSS) is defined in the context of beliefs harboured by employees

regarding whether their supervisor appreciates their work contribution and show concern for their well-being (Eisenberger et al., 2002). Against the backdrop that supervisors are viewed as representatives of the organisation, who monitor and evaluate employees' performance, employees by extension construe their supervisors' positive or negative alignment towards them as indicative of the outlook of the organisation's support (Eisenberger, Huntington, Hutchison, & Sowa, 1986). In addition, employees understand that supervisors' evaluation of subordinates are often relayed to senior management and influence the latter's views, thereby endorsing employees' association of supervisors with POS (Eisenberger et al., 2002).

There is a general understanding that employees need to be motivated in order to expend greater effort and personal resources to attain their work tasks. In particular, when a supervisor demonstrates concern toward his or her employees, this act is likely to translate to perceived warmth and consideration from the supervisor by the subordinates, thereby ingratiating the supervisor with his or her subordinates. In a similar way, employees who perceive support from their supervisor often feel obliged to return the favour by assisting the supervisors to achieve his or her organisational goals (Eisenberger et al., 2002; Stinglhamber and Vandenberghe, 2003). Research suggests that notwithstanding the employees' exchanges with both the organisation and their immediate supervisors as a combined entity (Setton et al., 1996; Wayne, Shore, & Liden, 1997), employees may also develop independent exchange relationships with their supervisors separate from those they experience with their organisation (Eisenberger et al., 1986).

Analogously, perceived co-worker support (PCS) plays a significant role in fostering positive behaviours at the workplace given the need for coordination and task interdependence within the work environment. PCS is defined as the extent to which employees are persuaded that their co-workers are always ready and willing to provide them with work-related assistance that will make it easier for them to carry out their tasks (Susskind, Kacmar, & Borchgrevink, 2003). In this line, PCS could be experienced in situations where co-workers help each other with tasks by demonstrating, sharing common knowledge and expertise or offering encouragement and support (Zhou & George, 2001). According to Kahn (1990), social interactions among colleagues at work are important insofar as they facilitate psychological meaningfulness. Furthermore, he asserted that established interpersonal relationships promote psychological safety in particular if they are supportive and trusting. Importantly, such interpersonal

relationships can serve as emotional resources to individuals thereby enhance their psychological availability.

Research on the Job Demands-Resources Model (JD-R) model has found that social support from the supervisor and co-workers is related to a number of positive work outcomes and negatively related to burnout at work (Bakker, Demerouti, & Euwema, 2005; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004). Other researchers have suggested that organisational members seek out a 'holding environment' (i.e. safe and caring) particularly when faced with work situations that are emotionally draining and threatening (Kahn, 2014). A supportive climate has a potential to strengthen the depth of exchange relationships at work and enhance the nature of reciprocal relationships (Eisenberger et al., 1986). A supportive and caring organisation influences individuals' positive feelings, attitudes, and their behavioural intentions (Cropanzo and Mitchell, 2005). In other words, it is suggested that if an organisation shows individual concern and care to its employees, they will plausibly develop positive feelings toward the organisation, experience job satisfaction and grow lessened intentions to turnover.

Intention to Leave

Intention to leave refers to the individual's well-thought out and purposive decision to quit an organisation (Tett & Meyer, 1993). Turnover has been found to impact negatively on organisational effectiveness due to the departure of skilled and experienced individuals (Pienaar, Sieberhagen, & Mostert, 2007). Literature evidence shows that the main factor leading employees to leave their current jobs is the actual intention itself (Calisir, Gumussoy, & Iskin, 2011; Firth, Mellor, Moore, & Loquet, 2004; Kumar, Ramendran, & Yacob, 2000; Siong, Mellor, Moore, & Firth, 2006; Velotsou & Panigyrakis, 2004). Also, employees' turnover intention is a good indicator of actual turnover (Griffeth, Hom, & Gaertner, 2000; Lambert, Lynne-Hogan, & Barton, 2001; Shore, Newton, & Thornton, 1990).

Three elements are fundamental to the withdrawal cognition process of turnover intentions. They include: "thoughts of quitting, the intention to search for another job elsewhere, and intention to quit" (Carmeli & Weisberg, 2006, p. 193). High turnover ratio leads to enormous costs for the organisation which inadvertently arise from recruitment and training of new employees. It also leads to decreased organisational performance, as well as lack of stability in

the organisation (Kumar et al., 2000; Siong et al., 2006). Dinger, Thatcher, Stepina, and Craig (2012) argue that in order to reduce costs, retain key employees, and stem spiralling turnover rates, managers need to understand factors that influence quitting behaviour.

Psychological Capital

Psychological capital (or PsyCap) is defined as an individual's positive psychological state of development characterised by having confidence to take on and put in necessary effort to succeed at challenging tasks (self-efficacy), making positive attributions about succeeding now and in the future (optimism), persevering towards goals and, when necessary, redirect paths to goals in order to succeed (hope) and, being able to bounce back from problems and adversity to attain success (resilience) (Luthans, Avolio, Avey, & Norman, 2007; Luthans & Youseff, 2004).

PsyCap is the higher-order composite of the four positive psychological resources and the underlying mechanism linking PsyCap's constituent resources is a positive cognitive, agentic, developmental capacity that promotes "positive appraisal of circumstances and probability for success based on motivated effort and perseverance" (Luthans, Avolio et al., 2007, p. 550). This can help employees not only to overcome any potential negativity and cynicism, but also experience an upward spiral of vigour, energy, motivation, dedication, and determination in relation to the ever-increasing demands, challenges and uncertainties presented by unpredictable work environments. Importantly, PsyCap, as well as each of its constituent resources, has been shown to be measurable, malleable to development and management in the workplace, and able to yield a range of tangible performance outcomes (Avey, Reichard, Luthans, & Mhatre, 2011).

The 'broaden-and-build' model (Fredrickson, 1998, 2001) has gained prominence as a framework of understanding the effects of positive emotions on cognitive functioning. This model implies that individuals' positive emotions enhance cognitive and emotional functioning. Within this framework, it is suggested that positive psychological resources can promote individuals' behaviour patterns and buffer individuals from negative and adverse situations. The meta-analysis findings have also shown that PsyCap is positively correlated with desirable attitudes (e.g. job satisfaction, organisational commitment, psychological well-

being, organisational citizenship) and negatively correlated with undesirable behaviours (e.g. cynicism, turnover intentions, job stress, and deviancy) (Avey, Reichard, et al., 2011).

High PsyCap levels will result in beneficial attitudes while low levels of PsyCap have undesirable behavioural effects. PsyCap was also found to moderate the relationship between burnout syndrome and intentions to leave (Wubin & Zhaoliang, 2010). This latter study showed that burnout syndrome leads to turnover intentions, particularly among individuals who show low levels of PsyCap. Similarly, George and Jones (1996) found that attitudes (e.g. job satisfaction) can influence turnover intentions and this pathway could be moderated by the individual's values and positive emotions. PsyCap can regulate the individual's values and positive emotions to influence individuals' behaviour and attitudes. Recent studies also found that employees reporting high levels of PsyCap have lower intentions to leave their jobs and organisations (Amunkete & Rothmann, 2015; Barkhuizen, Rothmann, & van de Vijver, 2014). In this sense, it is plausible to assume that PsyCap could affect perceived support and turnover intentions (Tuzun, Cetin, & Basim, 2014).

Aim and hypotheses

The aim of the study was to investigate the relationship between perceived support (from the organisation, supervisor and co-workers) and intentions to leave among employees in a platinum mining company – also to explore mediating effect of PsyCap in the relationship between perceived support and intention to leave. An understanding of how social contextual factors could potentially influence intentions to turnover in the organisations would make it possible to develop and implement strategic interventions to mitigate any such intentions.

Therefore, based on the foregoing discussions of literature and objectives of this study, the following hypotheses were formulated:

H1: Perceived supervisor support, co-worker support and organisational support are positively associated with psychological capital.

H2: Perceived supervisor support, co-worker support and organisational support are negatively associated with employees' intentions to leave.

H3: Psychological capital is negatively associated with employees' intention to leave.

H4: Perceived supervisor support, co-worker support and organisational support indirectly influence employees' intentions to leave via psychological capital.

Method

Research design

This study adopted a quantitative approach, more specifically a cross-sectional design. A sample was drawn from the population at a specific point in time (Shaughnessy, Zechmeister & Zechmeister, 2015).

Participants

The sample consisted of employees of a platinum mining company based at different work locations across South Africa. A stratified random sampling technique was used to send the questionnaire to approximately 980 employees, of which 564 were properly completed and found usable for purposes of the present study, yielding a response rate of 57.5%. Employees from all racial groups, job levels, educational levels, and departments ranging from semi-skilled to executive level professionals were included. The respondents were mostly of African origin (51.6%), males (64.9%), married with children (58.2%), and Afrikaans speaking (35.6%). The majority of respondents fell within the 31 to 39-age category (36.7%), with the minority (5.9%) of respondents older than 55 years. Educational level revealed that the majority (34.8%) of participants have a Grade 12 qualification. The majority of participants had worked for the company for a period ranging from 6–10 years (36.7%) and most of them were at middle management level (40.8%). A large number of respondents (41.3%) that took part in this study were employed in the mining division side of the business.

The following three steps were adopted: First, the overall sample size was determined; second, the total sample was clearly delineated into each stratum, that is, each unit from the population must only belong to one stratum; and third, a number of respondents were chosen from each stratum using random sampling method. Three factors were considered in determining the sample size: (1) the degree of variability in the population; (2) magnitude of acceptable error; and (3) confidence level to ensure that the estimates would remain within the range of acceptable error (Zikmund, 2003).

The characteristics of the respondents are reported in Table 1.

Table 1

Characteristics of Participants (n = 564)

Item	Category	Frequency	Percentage
Gender	Male	366	64.9
	Female	198	35.1
Age	21 – 30	110	19.5
	31 – 39	207	36.7
	40 – 45	103	18.3
	46 – 55	111	19.7
	Over 55	33	5.9
Educational level	Grade 12 (Std. 10)	196	34.8
	Technical College Diploma	75	13.3
	Technikon Diploma	70	12.4
	University Degree	125	22.2
Years in company (Tenure)	Postgraduate Degree	98	17.4
	Less than 3	44	7.8
	3 to 5	109	19.3
	6 to 10	207	36.7
	11 to 15	103	18.3
	16 to 20	49	8.7
	21 to 25	25	4.3
Job level	26 to 30	18	3.2
	Over 30	10	1.8
	Executive Management (Band 3)	3	0.5
	Senior Management (Band 4 and 5)	56	9.9
	Middle management (Band 6 and 7)	230	40.8
	Junior Management (C5- C3)	118	20.9
	Graduates-In-Training (C2-C4)	31	5.5
	Administrative staff (C1-C2)	77	13.7
Skilled professional (Trades persons)	38	6.7	
	Trained labourers	11	1.9

Measuring Instruments

Five measuring instruments were used for purposes of this study, namely the Survey of Perceived Organisational Support Scale (SPOS), Supervisory Support Scale (SSC), Social Support Scale (SSS), Psychological Capital Questionnaire (PCQ), and Turnover Intention Scale (TIS). A biographical data sheet was also developed.

Perceived organisational support was measured with the 16-item Survey of Perceived Organisational Support Scale (SPOS; Eisenberger et al., 1986). The scale measures employees' perceptions of whether the organisation appreciates their contributions and treats them favourably or unfavourably in differing circumstances. Respondents were requested to indicate how much their organisations supported them on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Positively worded items in this questionnaire tap the extent to which respondents believe their organisation values their contribution, considers their goals and interests, makes help available to solve problems, and cares about their general work satisfaction, while negatively worded items examine beliefs that the organisation would disregard employee interests, fail to notice their efforts and contributions, and would take advantage of them should the opportunity arise. The scale reported a reliability range of between 0.67 and 0.95 (Rhoades & Eisenberger, 2002).

Perceived supervisor support was measured using the Supervisory Support Scale (SSC) that was developed by Palo and Rothmann (2015). This 22-item measure assessed employees' perceptions of autonomy support, competence support, and relatedness support. The forty-eight-item survey used a 5-point Likert-type scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Examples of items used include "My supervisor takes the time to learn about my career goals and aspirations", "My supervisor treats me in a humane way" and "My supervisor shows he or she understands how specific actions impact on others". The internal consistency of this scale ranged between 0.91 and 0.96 (Palo & Rothmann, 2015).

Co-worker support was measured using the Social Support Scale designed by O'Driscoll (2000). This four-item scale measured how the participant's co-workers are perceived to be behaving towards him or her. Participants responded to a 6-point Likert-type scale ranging from 1 (*never*) to 6 (*all the time*). An example of items included in this scale is "Indicate how often your co-worker provides you with clear and helpful feedback". This scale comprises four items and has a maximum score of 24 and a minimum score of 4. A higher score indicates higher levels of co-worker support. The scale has a reliability of 0.89 (O'Driscoll, Brough, & Kalliath, 2004).

Psychological capital was measured using the Psychological Capital Questionnaire (PCQ; Luthans, Youssef, & Avolio, 2007), consisting of 24 items. The PCQ is designed to assess the

four components of psychological capital: hope, self-efficacy, optimism, and resilience, with each component being assessed by six items. A sample item used for assessing the hope facet is “I can think of many ways to reach my current goals”. An example of items that measured efficacy includes “I feel confident in representing my work area in meetings with management.” Optimism was measured with items such as “I’m optimistic about what will happen to me in the future as it pertains to work”, and an example of items used to measure resilience include “I can get through difficult times at work because I’ve experienced difficulty before”. Responses were reported via a Likert-type scale varying from 1 (*strongly disagree*) to 6 (*strongly agree*). Because psychological capital is a higher-order construct, the four key psychological capital capacities have a synergetic effect (Luthans et al., 2008). The average score was calculated to obtain the composite psychological capital value in this study, with higher scores indicating more psychological capital. According to Luthans et al. (2007), the resulting score indicates the level of an individual’s positive psychological capital. Acceptable Cronbach alphas were found for the PCQ in previous studies which ranged from 0.88 to 0.89 (Luthans et al., 2007).

Employees’ intention to leave was measured using Turnover Intention Scale (TIS; Sjöberg & Sverke, 2000). This three-item scale measured the extent to which participants are thinking of or considering leaving their current jobs. Participants responded to a Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items used include “If I was completely free to choose, I would leave this job”. The estimated alpha coefficient of this scale is 0.83 (Sjöberg & Sverke, 2000; Rothmann, Diedericks, & Swart, 2013).

A biographical questionnaire was developed in order to record socio-demographic and biographical data of participants, including age, gender, race, language, marital status, level of education, department where employed, and period of tenure with the organisation and in current role.

Research Procedure

Ethical approval was obtained from the Ethics Committee of the participating university. Thereafter the researcher sought permission from the senior management of the participating organisation to conduct the study prior to commencement thereof. Once permission had been granted, an e-invitation letter was sent out by the researchers to all sampled employees (up to

the executive management level) of the mining company. The objectives of the study were enunciated in the letter sent to potential participants and written consent obtained from them regarding their participation in the study. It was emphasised that participation was voluntary. Confidentiality and anonymity were assured. The invitation included a web link for access to the survey. The design of the questionnaire was such that participants could complete individual sections of the survey, one section at a time, before submitting their completed questionnaire response. The data were collected between the period of August 2013 and April 2014, and at least three reminders were sent to participants during this time to urge them to submit their completed responses.

Data Analysis

The analysis of the data was carried out using Mplus version 7.31 (Muthen & Muthen, 1998-2014). Items of the five questionnaires were defined as categorical and the weighted least-squares with corrections to means and variances (WLSMV) were used as an estimator. The following indices produced by Mplus were used in this study: a) absolute fit indices, including the chi-square statistic which is the test of absolute fit of the model, the weighted root mean square residual (WRMR), and the Root Mean Square Error of Approximation (RMSEA), and b) incremental fit indices, including the Tucker-Lewis Index (TLI) and the Comparative Fit Index (CFI) (Hair, Black, Babin, & Anderson, 2010). The CFI also compares the hypothesised and independent models, but takes sample size into account. The TLI is a relative measure of co-variation explained by the hypothesised model which has been specifically designed for the assessment of factor models. TLI and CFI values higher than 0.95 are regarded as acceptable (Hu & Bentler, 1999). RMSEA values lower than 0.08 and a WRMR lower than 1 indicate a close fit between the model and the data. Chi-square difference tests were conducted to compare alternative nested structural models (Muthén & Muthén, 1998–2014). Composite reliability (Raykov, 2009) was computed for each scale. Composite reliability (ρ) is superior to Cronbach alpha coefficients when latent variable modelling is used.

Results

Testing Measurement Models

Using confirmatory factor analysis (CFA), a five-factor model as well as four alternative models were tested to assess whether each of the measurement items would load significantly onto the scales they were associated with.

Given the cross-sectional nature of the study, four measurement models were tested. Model 1 consisted of five latent variables, namely: a) perceived supervisor support, consisting of three latent variables, namely: i) competence support (measured by eight observed variables), ii) relatedness support (measured by nine observed variables), iii) autonomy support (measured by five observed variables); b) perceived co-worker support (measured by four items); c) perceived organisation support (measured by 16 items); d) psychological capital, consisting of four latent variables, namely: i) self-efficacy (measured by six observed variables), ii) hope (measured six observed variables), iii) resilience (measured by six observed variables), and, iv) optimism (measured by six observed variables); e) intention to leave (measured by three). All latent variables in model 1 were allowed to correlate.

Models 2, 3, 4, and 5 followed the same template: Model 2 was specified with 4 observed variables measuring perceived co-worker support; Model 3 was specified with 16 observed variables measuring perceived organisational support; Model 4 was specified with 24 observed variables measuring psychological capital (without four first-order latent variables, namely; hope, efficacy, resiliency and optimism); and Model 5 was specified with 3 observed variables measuring intentions to leave.

Table 2 presents the fit statistics of the various models.

Table 2

Fit Statistics of Competing Measurement Models

Model	χ^2	<i>df</i>	TLI	CFI	RMSEA	WRMR
1	5808.37*	2260	0.96	0.96	0.05* [0.051, 0.054]	1.76
2	5956.58*	2261	0.96	0.96	0.05* [0.052, 0.056]	1.79
3	6124.77*	2261	0.95	0.96	0.06* [0.053, 0.057]	1.83
4	6311.55*	2264	0.95	0.95	0.07* [0.055, 0.058]	1.88
5	25981.71	2277	0.72	0.72	0.14* [0.134, 0.137]	4.83

* $p < 0.01$

The results in Table 2 showed a χ^2 value of 5808.37 ($df = 2260$; $p < 0.01$) for the hypothesised measurement model, suggesting that the model did not fit the data well. However, given that it is unlikely to obtain a non-significant χ^2 test statistic, due to problems associated with null hypothesis testing and the effects of sample size (Kelloway, 2014), other fit indices provided by Mplus were also considered. The CFI = 0.96, TLI = 0.96, RMSEA = 0.05, 90% CI [0.051, 0.054], PCLOSE = $p > 0.01$, WRMR = 1.76. The CFI and TLI values were higher than 0.95, and RMSEA (and its upper confidence interval) were lower than 0.06 ($p > 0.01$), which indicate a good fit of the model to the data (Hu & Bentler, 1999).

Testing the Structural Model

Reliabilities and correlations among perceived supervisor support, co-worker support, organisational support, the dimensions of psychological capital, and intentions to leave are reported in Table 3.

Table 3

Reliability Coefficients and Correlations of the Scales (N = 564)

Variable	ρ	1	2	3	4	5	6	7	8	9
11. Support - Competence	0.94	-	-	-	-	-	-	-	-	-
12. Support - Relatedness	0.96	0.92**	-	-	-	-	-	-	-	-
13. Support - Autonomy	0.91	0.93**	0.93**	-	-	-	-	-	-	-
14. Co-worker support	0.92	0.35**	0.35**	0.35**	-	-	-	-	-	-
15. Organisational support	0.95	0.71**	0.72**	0.72**	0.38**	-	-	-	-	-
16. Self-efficacy	0.89	0.31**	0.31**	0.31**	0.25**	0.41**	-	-	-	-
17. Hope	0.86	0.35**	0.36**	0.36**	0.28**	0.47**	0.84**	-	-	-
18. Resilience	0.68	-0.24*	-0.25*	-	-0.19*	-	-0.58*	0.66*	-	-
19. Optimism	0.72	0.33**	0.33**	0.33**	0.26**	0.44**	0.78**	0.89**	-0.61	-
20. Intention to leave	0.92	-0.47**	-0.47*	-	-0.30*	-	-0.25*	-0.29*	0.20*	-0.27*
				0.47**		0.61**				

* $p < 0.05$; ** $p < 0.01$

Table 3 shows the scale reliabilities of the constructs ranging from 0.68 to 0.96. These reliabilities were acceptable compared to the guideline of 0.70 (Wang & Wang, 2012).

Table 3 depicts a negative correlation among all three components of supervisor support, i.e. support for competence, relatedness, and autonomy and intention to leave (all medium effects, Cohen, 1988). Not shown in Table 3 are the correlations between psychological capital and the other variables. Psychological capital was statistically significantly and positively related to supervisor support for competence ($r = 0.36$, medium effect), relatedness ($r = 0.36$, medium effect), autonomy ($r = 0.36$, medium effect), co-worker support ($r = 0.29$, medium effect), and organisational support ($r = 0.48$, medium effect),

The structural model was tested based on the measurement model. The hypothesised relationships were tested using latent variable modelling as implemented by Mplus 7.31. In this regard, three competing models were tested. Model 1 included paths from perceived support (i.e. supervisor support, co-worker support and organisational support) to psychological capital, from psychological capital to intention to leave. This model yielded the following fit statistics: $\chi^2 = 2152.40$; $df = 1020$, $p < 0.001$; CFI = 0.96; TLI = 0.96; RMSEA = 0.05 (90% CI [0.047, 0.052], $p > 0.59$); WRMR = 1.44. These statistics show a good fit for the hypothesised model.

Given the cross-sectional nature of the data, three other models were tested. Model 2 included paths from supervisor support, co-worker support, organisational support, and psychological capital, but the path from organisational support to intention to leave was constrained to zero. The path from organisational support to psychological capital was also constrained to zero. Model 3 included paths from supervisor support, co-worker support, organisational support, and psychological capital to intention to leave, but the path from supervisor support to intention to leave was constrained to zero. The path from supervisor support to psychological capital was also constrained to zero. Model 4 included paths from supervisor support, co-worker support, organisational support, and psychological capital to intention to leave, but the path from co-worker support to intention to leave was constrained to zero. The path from co-worker support to psychological capital was also constrained to zero.

The following changes in chi-square ($\Delta\chi^2$) were found: Models 1 and 2 - $\Delta\chi^2 = 102.12$, $\Delta df = 2$, $p < 0.001$; Models 1 and 3 - $\Delta\chi^2 = 0.70$, $\Delta df = 2$, $p > 0.05$; and Models 1 and 4 - $\Delta\chi^2 = 12.52$, $\Delta df = 2$, $p < 0.001$. Therefore, Model 1 was superior to Models 2, 3, and 4. In model 2, the fit of the structural model decreased statistically significantly, but the standardised regression coefficients of supervisor support ($\beta = 0.34$, $p < 0.001$) and co-worker relations ($\beta = 0.27$, $p < 0.001$) were statistically significant. Model 3 did not differ significantly from model 1. The standardised regression coefficients of organisational support ($\beta = 0.44$, $p < 0.001$) and co-worker relations ($\beta = 0.12$, $p < 0.05$) were statistically significant. Model 4 also differed statistically significantly from model 1, and only the regression coefficient of organisational support was statistically significant.

Figure 1 and Table 4 portray the standardised regression coefficients estimated by Mplus for the hypothesised model. This study allowed correlations among supervisor support, co-worker support, organisational support, psychological capital and intention to leave.

Table 4

Standardised Regression Coefficients of Supervisor Support, Co-worker Support, Organisation support, Psychological Capital of Intentions to Leave

Variable	Estimate	SE	Est/SE	<i>p</i>
Psychological capital on				
Supervisor support	0.02	0.06	0.33	0.74
Co-worker support	0.12	0.04	3.02	0.00**
Organisational support	0.42	0.06	7.66	0.00**
Intention to leave on				
Supervisor support	-0.06	0.06	-0.10	0.34
Co – worker support	-0.07	0.04	-1.70	0.09
Organisational support	-0.55	0.06	-9.47	0.00**
Psychological capital	0.01	0.04	0.29	0.77

SE, standard error; Est/SE, estimate divided by standard error, ** $p < 0.01$

For the portion of the model predicting psychological capital, Table 4 indicates that the path coefficient of co-worker support ($\beta = 0.12, p < 0.001$) and organisational support ($\beta = 0.42, p < 0.001$) were statistically significant, and had the expected signs. Co-worker support and organisational support were positively associated with psychological capital. The WLSMV-estimated equation accounted for a large proportion of the variance in psychological capital ($R^2 = 0.25$). Hypothesis 1 is accepted.

For the portion of the model predicting intention to leave, the path coefficient of organisational support ($\beta = -0.55, p < 0.001$) was statistically significant and had the expected sign. Perceived organisational support had a negative relation with intention to leave. The WLSMV-estimated equation accounted for a large proportion of the variance in intention to leave ($R^2 = 0.38$). Hypothesis 2 is supported.

For the portion of model predicting intention to leave, the path coefficient of psychological capital ($\beta = 0.01, p < 0.001$) was not statistically significant. Although psychological capital had a positive relation with intention to leave, the regression coefficient of psychological capital was not statistically significant when entered with the other predictors in the regression equation. Hypothesis 3 thus is rejected.

The results suggest that the relationships posited in the model account for a substantial amount of the co-variation in the data. The model accounts for 25% of the variance in psychological capital, and 38% of the variance in intention to leave, thereby lending more empirical support for the model's fit.

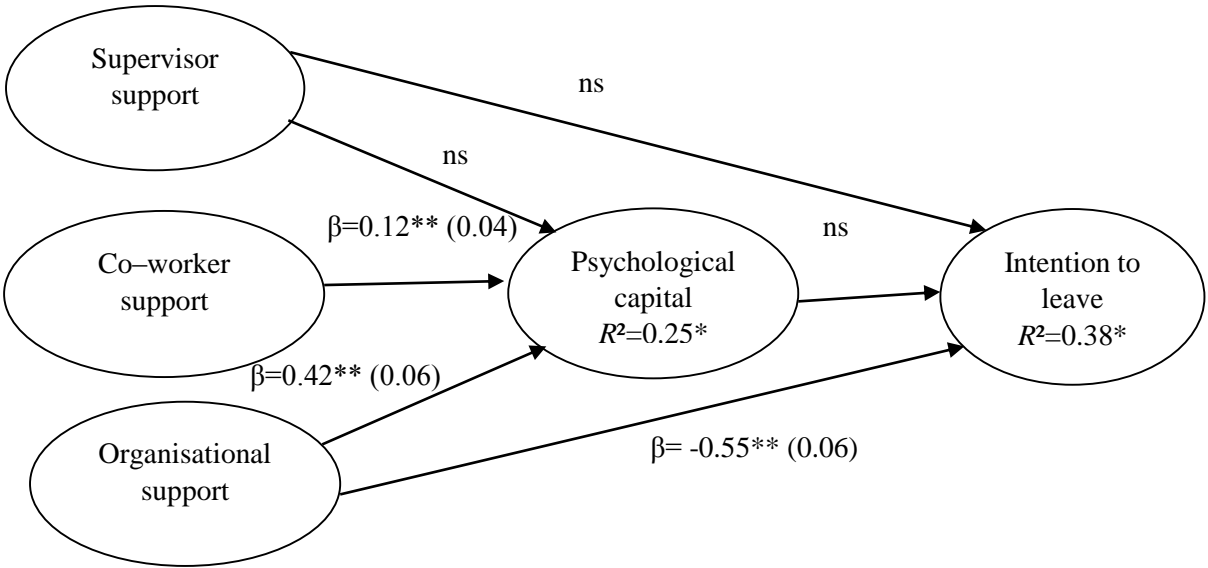


Figure 1. The WLSMV estimates for the hypothesised model of intention to leave (standardised solution)

Indirect Effects

To determine whether any relations in the model were indirectly affected by psychological capital, the procedure explained by Hayes (2013) was used. Bootstrapping with 10 000 samples was used to construct two-sided bias-corrected 95% CIs, so as to evaluate indirect effects. Lower and upper CIs are reported (see Table 5).

Table 5

Indirect Effects of Supervisor Support, Co-worker Support, and Organisational Support on Intention to Leave

Variable	Estimate	SE	95% BC CI	
			Lower CI	Upper CI
Supervisor support	0.000	0.003	-0.003	0.007
Co-worker support	0.001	0.006	-0.007	0.014
Organisational support	0.004	0.019	-0.024	0.040

SE = standard error; 95% BC CI = 95 % bias-corrected confidence intervals

With regard to the indirect effects of supervisor support, co-worker support, and organisational support the 95% CIs for intention to leave included zeros. Hence hypothesis 4 is rejected: perceived supervisor support, co-worker support and organisational support did not indirectly influence employees' intention to leave via psychological capital.

Discussion

The aim of this study was to investigate the relations among perceived supervisor support, co-worker support, organisational support, psychological capital and intention to leave in a platinum mining company. Overall, support was found for most of the hypothesised relationships. This study showed that organisational support has a direct effect on mining employees' intentions to leave. Co-worker support had a direct positive effect on employees' experiences of psychological capital. An analysis of indirect effects showed that organisational support did not affect intention to leave as a result of the level of psychological capital.

More specifically, and consistent with prior research findings, the results showed that organisational support is positively related to psychological capital (e.g. Bono & Ilies, 2006), and negatively related to intention to leave (e.g. Van Schalkwyk, Els, & Rothmann, 2011). This finding is also supported from the 'broaden-and-build' theory (Fredrickson, 2001; Fredrickson & Joiner, 2002) perspective, which suggests that positive emotions, their repertoire of cognitions and behaviours broaden and counteract negative attitudes (Fredrickson & Branigan, 2005). This process has implications for well-being and behaviour, for example, positive

emotions can create positive spirals within an individual whereby well-being is increased through positive gain-spiral similar to what was proposed by Conservation of Resource (COR; Hobfoll, 1998, 2002) theory and can negate stressors and downward spiral. Ong, Bergeman, Bisconti, and Wallace (2006) argued that this broadening process can also increase psychological resilience of employees, thereby making it possible for them to have a positive attitude despite setbacks experienced. Furthermore, supervisor support and co-worker support did not contribute significantly towards employees' experience of high psychological capital in the structural model.

It is worth noting that despite the supervisor and co-worker support not having shown a significant predictive relationship with psychological capital and intention to leave, this does not minimise the importance of these relationships to employees. Researchers (Rothmann, Diedericks, & Swart, 2013) found that supportive and trusting manager relations have a negative relationship with intention to leave. In support, Bakker, Hakanen, Demerouti, and Xanthopoulou (2007) also showed that support provided by the supervisor could enable employees to handle their job demands better, and thus reduce their intentions to leave in the process. This view is also in line with the social learning theory (Bandura, 1977) which postulates that employees make sense of their work environment and infer behaviours that are desired, valued and rewarded from interactions with their superiors at work.

The structural model confirmed that although co-worker support influenced the level of psychological capital among employees, the effect sizes were relatively small. Organisational support had a strong direct impact on psychological capital. Furthermore, organisational support had a strong negative effect on intention to leave. This is an important finding of this study in that it highlights that regardless of the employees' level of psychological capital, if the climate within the organisation is not supportive, the intention to leave among employees will remain high.

Supervisor support, co-worker support and organisation support each showed a negative association with intention to leave. This implies that a supportive climate in the organisation may lead to reduced intention to leave. The direct and positive relation between employees' psychological capital and their intention to leave indicates that when the level of employees' psychological capital increases, their intention to leave the organisation will not necessarily decrease. Furthermore, contrary to previous research findings (e.g. Avey et al., 2009), this study

did not find a negative relationship between psychological capital and intention to leave when a supportive organisational climate, supervisor and co-worker support were controlled for.

The results further showed a significantly direct relation between supportive climate (i.e. organisational support) and intentions to leave. This result may be somewhat expected given similar previous research findings (Hui, Teo et al., 2007; Maertz, Griffeth, Campbell, & Allen, 2007), namely that perceived organisational support is a strong predictor of intention to leave. It is also not surprising that organisational support was found to be the strongest predictor (relative to supervisor and co-worker support) of both psychological capital and intention to leave. This could be primarily because supervisor support is a more specific facet of perceived organisational support (Kottke & Sharafinski, 1988), and it also has a more direct impact on job retention (Eisenberger et al., 2002). This implies that support portrayed by supervisors can also be construed as support by the organisation. This may as well be the case, in particular, because during the period when this empirical study was being conducted several mining companies were undergoing an unprecedented six months long labour strike in 2014. The climate that prevailed in the workplace at the time could explain the reasons which put the organisation (and less so the supervisors and co-workers) as the key perception target impacting on psychological capital and intention to leave.

Contrary to the hypotheses of this study which stated that perceived supervisor support, co-worker support and organisational support indirectly influence employees' intentions to leave via psychological capital, an analysis of the indirect effects showed that there was no indirect relationship between supportive climate and intention to leave through the psychological capital. This finding suggests that the level of psychological capital will not reduce employees' intentions to leave, irrespective of whether or not they experience supportive climate.

Notwithstanding, this study had a number of limitations. First, due to the cross-sectional nature of the data, the findings of this study cannot be used to determine the actual causal associations between the investigated variables. A longitudinal study would provide a much more encompassing view in this regard. Second, the sample population was drawn from one mining company, while there are a number of mining companies across the industry. The results can therefore not be generalised. Future research in this sector should draw from a number of mining companies. In this way findings would add immense value to the current knowledge

concerning the relationships among perceived organisational support, supervisor support, co-worker support and intention to leave in the platinum mining industry.

Recommendations

This study sheds light on what organisational practitioners could potentially consider implementing in order to mitigate employee turnover experienced in the mining sector. First, it is evident that supportive climate is of uppermost importance to employees in this industry, even more so if it is derived from the organisation itself. To alleviate the high tendencies of turnover intentions among employees, managers and supervisors should nurture a 'holding environment' within an organisation whereby employees can feel psychologically safe and emotionally supported. Second, managers and supervisors should take necessary steps to develop their employees' positive psychological capital as this resource would stand employees in good stead when challenges come to bear in the turbulent and emotionally draining working environment. This does not imply that the reality of the natural phenomenon of employee turnover should be avoided at all costs. Instead, this study simply indicates that ensuring a work environment that is embedded with social support and where employees are empowered with psychological resources would reduce any potential antagonism against the organisation by employees and help manage their urges to quit in the process.

Creating an environment in which people will not be persuaded to the possibility of leaving requires management to proactively put in place interventions that will assess those aspects that make employees discontented. Managers could for example conduct regular 'stay interviews' among current employees to attenuate the rate of employees considering leaving the organisation.

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CHAPTER 5

CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter provides conclusions regarding the specific objectives of the study, discusses limitations of the study, followed by recommendations for the organisation and suggestions for future research. The conclusions serve as an attempt to answer the general research question, namely, What is the impact of selected job resources (i.e. perceive supervisor support, co-worker support, organisation support, and psychological capital) on the employees' work engagement, job performance and intention to leave? It further sets out to address both the general aim of the study, which is: To investigate the relationships among relational contexts, task characteristics, psychological capital, work engagement, intention to leave and job performance, and specific objectives of the study, which are:

- To investigate the effects of supervisor support, co-worker support and task characteristics on the engagement of employees in a platinum mining organisation.
- To determine the relation between supervisor support and employees' psychological capital, and how these can influence job performance of workers in a platinum mining organisation.
- To study the relationship between perceived support (from supervisor, co-worker, and organisation) and intention to leave among employees of a platinum mining organisation. Also, to explore the mediating effects of psychological capital in the relationship between perceived support and intention to leave.

The limitations of the study reflect the shortcomings of this research which need to be taken into account when interpreting the findings and also that need to be addressed in future research, while recommendations put forward the best course of action for the organisation in order to mitigate highlighted challenges and also consider suggestions for future research.

5.2 CONCLUSIONS

Conclusions are based on the results of the three research manuscripts. The conclusions of the empirical studies are presented next.

The first manuscript of this study focused on perceived supervisor support, co-worker support, task characteristics and work engagement. The objective of this manuscript was to investigate the effects of supervisor support, co-worker support and task characteristics on the engagement of employees in a platinum mining company. The results showed that task characteristics (i.e. task significance and task identity) were significant predictors of work engagement. *Task significance* refers to the degree to which a person's job has an impact on the lives of others. In other words, the end results of executing a particular task or tasks has an impact on people's lives (e.g. lives are changed for the better or the organisation's performance is invigorated significantly). *Task identity* refers to the degree to which an individual is involved in a specific task from beginning to end and thus identifies with the end-product. This provides evidence that the (re)design of jobs can be used as a means of achieving higher levels of work engagement. This confirms previous findings of Christian, Garza, and Slaughter (2011) and Humphrey, Nahrgang, and Morgeson (2007) that task characteristics relate positively to work engagement. However, although a strong evidence of correlation between task characteristics and work engagement was established in this study, this was not the case for the relationship between relational context and engagement. A relatively weak correlation was found between these two variables. Notwithstanding, the relational aspects remain important to employees in the mining work setting.

According to Gallup's (2014) findings, lower-level employees value being treated with respect and civility at the workplace. A possible explanation for the unexpected weak correlation obtained may be ascribed to the fact that the majority of the sample (40%) were on middle management and thus relations at work are not seen as a critical motivating factor as is the case with lower-level employees. The results are also closely linked to previous findings by Kahn's (1990) study on work engagement which showed that the social context within which work is executed combines with job features to promote high levels of engagement. In addition, Kahn (1990) elucidated the importance of relational context as it relates to engagement by highlighting that employees become disengaged from their work when they perceive their

environment to be hostile. In this line, supportive climate is equally important in the workplace insofar as it captures individuals' physical, emotional, and cognitive presence.

The objective of the second manuscript was to determine the relation between supervisor support and employees' psychological capital, and how these can influence the job performance of workers in a platinum mining organisation. The results showed that supervisor support and psychological capital accounted for a large proportion of the variance in job performance. Psychological capital was positively and directly associated with job performance. Supervisor support was also positively associated with experiences of positive psychological capital of workers, which in turn, predicted high job performance. In other words, a supervisor that supports the three innate psychological needs of his or her employees contributes positively to their (employees) level of psychological capital. Psychological capital showed a direct positive effect on employees' job performance in the mining environment, so that when an employee experiences a high level of psychological capital, their job performance will also increase. This result demonstrates congruence with previous research findings of Avey et al. (2011), Bandura and Locke (2003), Luthans et al. (2005) and Luthans, Avey et al. (2010) who also demonstrated a positive correlation between psychological capital and job performance outcomes.

Furthermore, the results also found that supervisor relations did not contribute significantly directly to job performance, implying that when a supervisor demonstrates supportive behaviours this does not necessary translate to high job performance by his or her employees. This result contradicts other previous findings (Gagnon & Michael, 2004; Shanock & Eisenberger, 2006) which have shown that supervisor relations could in fact directly impact job performance.

An analysis of indirect effects indicated that strong supervisor support influenced job performance via experiences of high psychological capital. This result supports previous findings by Luthans, Norman et al. (2008) which showed that supportive climate, positivity in general and psychological capital in particular, may have influence employees' actual performance.

The objective of the third manuscript was to study the relation between perceived support (from supervisor, co-worker, and organisation) and intention to leave among employees of a platinum mining organisation; also, to explore the mediating effects of psychological capital in the

relation between perceived support and intention to leave. The results obtained supported the first hypothesis and reported that perceived supervisor support, co-worker support, and organisational support is positively associated with psychological capital. This implies that employees experiencing their work environment as supportive, tend to develop high levels of psychological resources. A unique contribution of this finding to research is that the development of psychological capital does not only depend on individuals' perceptions of organisational support per se, but also on the perceptions of the similar others (co-workers) in the organisation. The results are consistent with previous findings (West, 2004) which reported that when individuals experience positive emotions, they are able to think laterally, are also likely to be capable to control their emotions better, handle challenges better, and become less over-sensitive in the workplace.

Also, the results and analysis of the data collected for this study led to the acceptance of the second hypothesis which stated that perceived supervisor support, co-worker support, and organisational support will be negatively associated with intention to leave. This result implies an inverse relationship between work social climate experienced by employees and their intention to leave. In other words, when employees find their work environment to be supportive, they are less likely to be inclined to want to leave. This result supports previous research findings (e.g. Allen et al., 2003; Tuzun & Kalemci, 2012) who found that relational inducements such as support from both the organisation and supervisor can be important in determining employees' decisions to stay or leave.

Contrary to the third hypothesis of this study, which stated that psychological capital will be negatively associated to intention to leave, psychological capital was found rather to be positively and directly correlated with intention to leave, thereby suggesting that the level of an employee's psychological capital (i.e. an individual's positive psychological state of development) does not determine whether or not they will consider to leave. This finding makes a contribution to the body of research by highlighting the idiosyncratic relationship between psychological capital and intention to leave. The result highlights that psychological capital may not independently be an effective strategy for managing employees' intention to leave.

5.3 CONTRIBUTIONS OF THE STUDY

The specific contributions of each research manuscript are indicated below:

Manuscript 1: This research study articulates findings on the effects of perceived supervisor support, co-worker support, and task characteristics on the level of work engagement of employees in the platinum mining organisation. To the best of our knowledge, prior to this study, no empirical data was available linking all four variables in the mining industry. This study yielded significant results that inform our understanding of antecedents of work engagement in the mining environment. It also contributes to the literature on the subject particularly in the mining industry. A questionnaire which was developed to measure supervisor support in terms of autonomy, competence and relatedness was validated for the study. The results of study 1 showed that the Supervisory Support Scale was reliable and valid. However, more research is needed to study the reliability of the scale in different contexts. Consequently, this study contributes significantly to the body of knowledge, given the unique and important role of this sector in the economy. Findings of this study could therefore be espoused to propose, develop and implement interventions aimed at harnessing engagement at work.

Manuscript 2: This study contributes to the theoretical understanding and empirical support from a mining industry sample with regard to the conditions under which job performance could flourish. Given that both supervisor support and psychological capital contribute to the enhancement of job performance, results highlight the importance for organisations to promote psychological capital-building interventions (Luthans, et al., 2008; Luthans et al., 2010). Importantly, supervisor support will not separately contribute significantly to job performance. Therefore, the strong mediating effect of psychological capital in the relationship between the supportive supervisor behaviour and job performance suggest that enhanced levels of psychological capital are indispensable for achieving distal job performance. Furthermore, arguably huge benefits exist that may accrue from providing a supportive climate, in conjunction with enhanced levels of psychological capital among employees in organisations. The findings could be used as basis for developing targeted interventions by organisations.

Manuscript 3: This study fills a gap in literature by highlighting the importance of organisational support in influencing the intentions to leave among employees in the mining

industry. More specifically, empirical evidence suggests that the level of psychological capital does not play any significant role in mitigating intentions to leave if the organisational support is lacking. In other words, creating a positive and supportive climate in a workplace would serve as an effective strategy for managing the retention of employees. Although other previous studies (e.g. Tuzun et al., 2014) have found indirect effects (i.e. mediating effect) of psychological capital on the relationship between organisational support and intentions to leave, this study reveals that such indirect effects may be context-specific. These findings may be crucial for organisations in their effort to curb the exodus of their key skills and experienced employees.

5.4 LIMITATIONS OF THIS STUDY

The first limitation of this study pertains to the use of a structured measuring instrument (structured electronic questionnaire) which could have limited the scope and the extent of relevant questions that could have been asked.

The second limitation of this study is that it investigated the psychological aspects of work engagement in the mining sector to obtain a holistic view of engagement in this industry. This may have limited the value-add this study could have contributed to the body of knowledge.

The third limitation of this study is that it focused only on a limited number of relevant job resources (i.e. task characteristics, perceived supervisor support, co-worker support, and organisational support) in this mining organisation.

The fourth limitation of the study relates to the fact that it relied primarily on the use of self-report measures which could have led to problems of ‘common method variance’. Social desirability and response bias are common sources of method related to self-report measures (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, to ameliorate problems linked to self-report data, the survey was conducted anonymously and study participants were assured of confidentiality. Besides, the effect of common methods has been indicated to be of little magnitude (Meade, Watson, & Kroustalis, 2007).

The fifth limitation of the study is its cross-sectional design nature. This data gathering method makes it impossible to establish the causal relationships among investigated variables.

5.5 RECOMMENDATIONS

5.5.1 Recommendations for the Organisation

The key findings of this research study suggest that to enhance employees' levels of engagement, management should consider appraising aspects of the existing jobs within the mining environment to ensure that they are imbued with task characteristics that include task identity and task significance in particular. According to the Job Characteristics Model (JCM; Hackman & Oldham, 1976), *task significance* characterises a job that has substantial impact on the lives of other people, whether those people are in the immediate organisation or in the world at large; while *task identity* denotes a job that requires completion of a whole product or provision of a complete service comprising identifiable pieces of work or delivering an end-to-end service. It involves doing a job from beginning to end with visible outcomes. Such job (re)design intervention will provide employees with leverage over their jobs, thereby ensuring that they are cognitively, emotionally, and physically available in those jobs. Mutually with (re)design of jobs, employees should also be given the leeway to craft their own jobs. Specifically, they should be allowed to introduce changes to their job tasks and relationships in order to influence the meaningfulness of their jobs. Job crafting primarily captures the active changes employees make to their own jobs in order to make those jobs more meaningful for themselves and, in the process, promote positive outcomes such as job satisfaction, engagement, and develop own psychological resources (Wrzesniewski & Dutton, 2001).

Equally important is the effect of the relational context in fostering work engagement. The quality of the daily interactions between the supervisor and his or her employees as well as between co-workers themselves is important insofar as they influence work engagement (see Harter, 2009). Management and supervisors will be well advised, therefore, to create a working environment that is characterised by caring and support. Some of the approaches that could be adopted by management in establishing such an environment is by encouraging an effective two-way communication with employees, having regular feedback sessions with employees, and also nurturing a safe culture at work where employees can have a voice in the workplace.

Furthermore, an organisation must consider fostering support (i.e. organisational, supervisory and co-worker) and enhancing the level of psychological capital among employees in order to

bolster job performance. Specifically, supervisors need to make a concerted effort to build constructive relationships with their employees. These actions would contribute to enhanced levels of psychological capital, and ultimately increase job performance.

In conclusion, managers and supervisors should be well-versed with the theoretical principles underpinning the SDT at the workplace. Being equipped with this knowledge will ensure that supervisors are able to meet employees' innate psychological needs in the manner in which they manage and interact with them on a daily basis.

5.5.2 Recommendations for Future Research

Certain recommendations are proposed in order to circumvent limitations in future research studies.

To mitigate problems related to the use of structured questionnaires, future studies might make use of supplementary qualitative data such as interviews or focus groups with employees in the mining industry to could provide in-depth information that would hone in on the affective-cognitive nature of employees' perceptions and their experiences within the work environment. Research such as this can further meaningfully inform the companies as well as the industry policies and relevant interventions.

The current study focused on the psychological aspect of work engagement. Therefore, to enhance the contribution and value-add of this research, future studies should consider incorporating behavioural perspective. These studies are important in that they will explore the effects certain behavioural patterns in engaging employees.

Considering that mining is a highly unionised environment, including a resource such as *perceived trade union support*, could have enriched our model. Therefore, future studies should attempt to include a broader range of relevant job resources in this industry.

To overcome problems associated with self-report measures, future studies might consider multi-source approaches such as collecting some ratings from different sources, such as peers and direct supervisors.

In order to handle the limitation related to the use of cross-sectional design, a longitudinal study would be recommended for future studies in order to validate the hypothesised causal relationship in this study.

Surprisingly, this study did not find social support as a strong predictor of work engagement in the mining industry. Future research should replicate this study and further explore this aspect to determine if similar findings will be derived.

Scientific literature has found that transformational leaders are very effective in creating supportive and autonomous work settings. Future studies should therefore hone in on investigating the extent to which leadership in the mining industry is indeed transformational and, if not, recommend what needs to be done to encourage and develop transformational leadership so as to maintain supportive culture in this environment.

It is very common in behavioural sciences to collect data from individuals and aggregate the data to gain insight into the groups to which those individuals belong (Luke, 2004). This approach can lead to the *atomistic fallacy*, where inferences about a group are incorrectly drawn from individual-level information (Hox, 2010). Future research should broaden the individual level researches by specifically discussing the participants' data that is organised at more than one level (i.e. nested data) and investigate the antecedents and outcomes of work engagement using a multilevel approach.

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