Moderators between work context and psychological health in a public service sector

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"I can do all things through him who strengthens me" (Philipians 4:13)

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Summary

Moderators between work context and psychological health in a public service sector

Keywords: Emotional intelligence; self-efficacy; explanatory style; attributional style; job demands; job resources; work engagement; psychological well-being; public service context.

Work context has many consequences for the psychological outcomes of employees. These outcomes also have consequences for the employer through possible loss of productivity, impaired health of employees which may be associated with absenteeism and turnover intention, among others. The literature also shows that these outcomes are not always the same even under similar working conditions. Theorising in cognitive psychology indicates that the way in which an individual appraises a situation may be more important to psychological outcomes than the actual presence of a stressor. Recently, personal resources have been hypothesised to influence these individual differences. Few if any studies have explored such personal resources as moderators in the relationship between work context and psychological outcomes, especially in the South African public service context. Thus, the general aim of this study was to determine whether personal resources (emotional intelligence, self-efficacy and explanatory styles) are moderators in the relationship between work context (job demands and job resources) and psychological outcomes (psychological well-being and work engagement) in a sample of government employees.

A cross-sectional survey research design was implemented. Data were collected from 459 participants with the following measuring instruments, the Job-Demands Resources (JD-R) Scale, the Satisfaction with Life Scale (SWLS), the Affectomemter-2 Short-form (AFM), the Utrecht Work Engagement Scale (UWES), the Emotional Intelligence Scale (EIS), the General Self-efficacy (GSE) scale, and the Explanatory Style (ES) Questionnaire. A demographic questionnaire was developed by the first author to

capture diverse information from the participants relating to gender, turnover intention, post level and so forth.

Analyses were conducted mainly in 2 steps. Firstly, multiple regression analyses were used to test the main effects of work context variables on psychological outcomes. Secondly, two-step hierarchical regression analyses were used to test whether personal resources (emotional intelligence, self-efficacy, and explanatory styles) moderated the relationship between work context variables and psychological outcomes. Before testing the moderation, all independent variables and moderator variables (dimensions of personal resources) were centred so as to exclude the possibility of any multicollinearity in the regression equation.

The results of the study, reported in three articles/manuscripts, showed significant main effects for work context and the personal resources as predictors of psychological outcomes. In the second place, the results also showed that the personal resources used in this study moderate the relationship between work context and psychological outcomes.

In the first article, it was concluded that emotional intelligence is of potential value, especially in the public sector that is focussed on optimal service delivery, and where emotional encounters are stock-in-trade. Emotional intelligence is a valuable personal resource to cultivate for establishing, developing, and maintaining positive outcomes in psychological well-being in the workplace. In the second article, it was concluded that as self-efficacy beliefs facilitate actions and behaviour taken by individuals, it is important that feedback and modelling could play an important role especially in service-oriented work contexts that may need self-regulation of emotions. In the third article, it was concluded that as attributional feedback can induce change in how individuals perceive their success or failure in a task, the role of explanatory styles in psychological outcomes could be cultivated through active feedback given to employees on their performance and possibilities of future growth in the organisation.

Overall it was concluded that a lack of job resources in the presence of high job demands will undermine psychological outcomes even in the presence of personal resources. Therefore, the consequences for health impairment and negative outcomes cannot be over-emphasised in a situation where job demands outstrip job resources. Employees in the public service require skills such as social and emotional competency,

self-efficacy and optimism as these are important tools in dealing with the public. Employees must have initiative, flexibility, motivation to achieve, empathy, self-esteem and confidence, self-control, and group management among fellow employees and the public that is served by them.

Although the limitations for this study are related to the fact that it was a cross-sectional research design and data was collected using self-reports, insights were gained about the role of personal resources in the relationship between work context and psychological outcomes. Based on all three articles, it was recommended that cross-lagged panel studies may be useful in further clarifying the role of personal resources in longitudinal studies about the relationship between job resources and psychological outcomes and possible upward spirals arising from facilitating these relationships. Aspects of such studies may also include a qualitative assessment of what participants perceive as job resources and personal resources and these help them to achieve their goals.

Opsomming

Moderators tussen werkskonteks en psigologiese welsyn in 'n openbare diens-sektor.

Sleutelwoorde: Emosionele intelligensie; self-effektiwiteit; verklaringstyl; attribusiestyl; werkvereistes; werksbronne; werksbetrokkenheid; psigologiese welsyn; openbare diens konteks.

Werkskonteks het baie gevolge vir die psigologiese uitkomste van werknemers. Hierdie uitkomste het ook gevolge vir die werkgewer deur moontlike verlies aan produktiwiteit en swak gesondheid van die werknemer wat verbind kan word met, onder andere, afwesighede en ook intensies van diensverlating. Volgens die literatuur is hierdie uitkomste nie altyd dieselfde nie, selfs onder dieselfde werkomstandighede. Teorieë in die kognitiewe psigologie dui aan dat die manier waarop 'n persoon 'n situasie beoordeel belangriker kan wees vir die psigologiese uitkomste as wat die werklike bestaan van 'n stressor is. In resente tye word die hipotese gestel dat persoonlike bronne hierdie individuele verskille kan beïnvloed. Baie min, indien enige, studies het hierdie persoonlike bronne as moderators in die verband tussen werkskonteks en psigologiese uitkomste ondersoek, spesifiek in die Suid Afrikaanse openbare diens-sektor. Die doel van hierdie studie was dus om te bepaal of persoonlike bronne (emosionele intelligensie, self-effektiwiteit en verklaringstyl) moderators is in die verband tussen werkskonteks (werksvereistes en werksbronne) en psigologiese uitkomste (psigologiese welsyn en werksbetrokkenheid) in 'n steekproef van regeringswerknemers.

'n Dwarsdeursnit opname-ontwerp is gebruik. Data van 459 deelnemers is met behulp van die volgende meetinstrumente ingesamel: die *Job- Demand Resources (JDR) scale;* die *Satisfaction with Life Scale (SWLS);* die *Affectometer 2 (short form) (AFM);* die *Utrecht Work Engagement Scale (UWES);* die *Emotional Intelligence Scale (EIS);* die *General Self-efficacy (GSE) scale* en die *Explanatory Style (ES) Questionnaire.*'n Demografiese vraelys is deur die eerste outeur ontwikkel om inligting oor geslag, werkverlatingsintensie, ensomeer, in te samel.

Statistiese analises is in twee stappe gedoen. Eerstens is veelvuldige regressie-analises gedoen om die effek van werkskonteks-veranderlikes op psigologiese uitkomste te bepaal. Tweedens is twee-stap hiërargiese regressie-analises gebruik om te toets of persoonlike bronne (emosionele intelligensie, self-effektiwiteit en verklaringstyl) tussen werkskonteks-veranderlikes en psigologiese uitkomste modereer. Voor hierdie toetsing is alle onafhanklike veranderlikes en moderator-veranderlikes (dimensies van persoonlike bronne) gesentreer om so die moontlikheid van enige multi-kollineariteit in die regressievergelyking uit te skakel.

Uit die resultate, wat in drie manuskripte / artikels gerapporteer word, blyk daar beduidende hoofeffekte vir werkskonteks en persoonlike bronne as voorspellers van psigologiese uitkomste. Tweedens het die resultate getoon dat die persoonlike bronne wat in die studie gebruik is, modereer tussen werkskonteks en psigologiese uitkomste.

In die eerste artikel is die gevolgtrekking gemaak dat emosionele intelligensie waarde het, veral in die openbare sektor wat gefokus is op optimale dienslewering en waar emosionele interaksies dikwels voorkom. Emosionele intelligensie is 'n waardevolle persoonlike bron om te ontgin vir die vestiging, ontwikkeling en instandhouding van positiewe uitkomste vir psigologiese welsyn in die werkplek. Die tweede artikel toon aan dat, omdat self-effektiwiteitsoortuigings aksies en gedrag by mense fasiliteer, dit belangrik is dat terugvoer en modellering 'n belangrike rol in veral diens-georiënteerde werkskontekste wat self-regulering van emosies benodig, kan speel. In artikel drie word aangetoon dat attribusie-terugvoer mense kan aanmoedig om hulle ervarings van sukses of mislukking in 'n taak te verander. Die rol van verklaring- of attribusiestyl in psigologiese uitkomste kan dan ontwikkel word deur aan werknemers aktief terugvoer te gee oor die prestasies en moontlikhede van toekomstige groei in die organisasie.

Die globale gevolgtrekking is gemaak dat 'n tekort aan werksbronne in die teenwoordigheid van hoë werksvereistes, die psigologiese uitkomste, selfs as daar persoonlike bronne beskikbaar is, sal ondermyn. Die negatiewe gevolge vir gesondheid en ander psigologiese uitkomste kan nie oorbeklemtoon word in die situasie waar werksvereistes werksbronne oorskry nie. Werknemers in die openbare diens-sektor benodig vaardighede soos sosiale en emosionele bevoegdhede, omdat hierdie vaardighede belangrik is om met die publiek te kan werk. Werknemers moet inisiatief hê,

buigbaar wees, motivering hê om te presteer, oor empatie beskik, selfwaarde en –vertroue hê, oor selfbeheer beskik en die vermoë hê om groepe van hulle kollegas en ook die publiek wat deur hulle bedien word, te kan bestuur.

'n Beperking van die studie is dat die data ingesamel is in 'n dwarsdeursnit opname-ontwerp en met self-rapportering. Nogtans is insig verkry oor die rol van persoonlike bronne in die verband tussen werkskonteks en psigologiese uitkomste. Gebaseer op al drie artikels, is daar aanbeveel dat kruis-gevalideerde paneelstudies in die toekoms handig sou wees vir die verdere uitklaring van die rol van persoonlike bronne in longitudinale studies oor die verband tussen werksbronne en psigologiese uitkomste, asook die moontlike opwaartse spiraal wat uit die verbande gefasiliteer kan word. Sekere aspekte van sulke studies kan ook kwalitatiewe assessering van dit wat die deelnemers waarneem as werksvereistes en persoonlike bronne, insluit en dit sou hulle kon help om hulle doelwitte te bereik.

Preface

- This thesis is presented in article format in terms of the North-West University's rule A.14.4.2 in tandem with rules A.13.7.3, A.13.7.4 and A.13.7.5.
- This thesis consists of three articles. They are:
  Article 1: Emotional Intelligence, Work, and Psychological Outcomes in a Public Service Context (accepted for publication in the *Journal of Psychology in Africa)*. Article 2: Self-efficacy, Work, and Psychological Outcomes in a Public Service Context (accepted for publication in the *Journal of Psychology in Africa)* and Article 3: Explanatory Style, Work, and Psychological Outcomes in a Public Service Context (submitted to the *South African Journal of Industrial Psychology)*.
- For ease of reference, the page numbering is in Roman numerals for the introductory section and consecutive numbering from the introduction to the end of the thesis. However, each individual article will be numbered from 1 on submission to a journal.
- The co-authors of these articles have submitted a letter consenting that the articles may be submitted for examination purposes in terms of Rule A.13.7.4.

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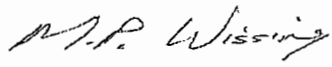
LETTER OF PERMISSION

Permission is hereby granted that the first author S. Williams may submit the following 3 articles for the purposes of examination and obtaining a PhD degree in Psychology;

1. *Emotional Intelligence, Work, and Psychological Outcomes in a Public Service Context*
2. *Self-efficacy, Work, and Psychological Outcomes in a Public Service Context*
3. *Explanatory Style, Work, and Psychological Outcomes in a Public Service Context*



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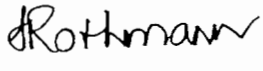

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Introduction

Orientation and problem statement

Research has indicated that a large number of factors are related to psychological outcomes in the workplace (De Croon, Blonk, de Zwart, Frings-Dresen, & Boersen, 2002). These factors include but are not limited to job demands and resources (Bakker, Demerouti, & Schaufeli, 2003; Schaufeli & Bakker, 2004), organisational climate (Cotton & Hart, 2003), work-home interference (Cooper & Cartwright, 1994) emotional, physical and spiritual exhaustion (Maslach & Leiter, 1997), increased workloads, decreased job control, increased role conflict and role ambiguity (Whitaker, 1996), restructuring, downsizing and mergers (Schaufeli & Greenglass, 2001). Firth, Mellor, Moore, and Loquet (2004) believe that such factors trigger the chain of psychological states that lead to for example an individual's intention to resign from a job. Significant main effects are expected between characteristics of work context (viz., job demands and job resources) and psychological outcomes based on this body of evidence.

Available literature also acknowledges that individual differences exist in how employees respond to the foregoing prevailing conditions in the workplace (see Anderzén & Arentz, 2005; Brief & Weiss, 2002; Rothmann, 2003) especially in how they influence psychological outcomes. Some authors refer to the factors that contribute to these individual differences as personal resources which are predicted in this study to act as moderators. Personal resources are connected to resilience and assist individuals to deal with the demands of their environment successfully (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007) and influence psychological well-being by reducing the impact of demands (Prieto, Soria, Martínez, & Schaufeli, 2008). Linley and Joseph (2002) had also earlier suggested that the way in which an individual appraises a situation may be more important to psychological well-being than the actual presence of a stressor. Mäkikangas and Kinnunen (2003) concur with the former by suggesting that the perception of occupational circumstances as stressful depends to some extent on individual characteristics. Parkes (1994) contends that personal characteristics can moderate the relation between work context factors and negative outcomes through a good fit between

personal characteristics and work-environment characteristics that would result in favourable psychological consequences while a lack of fit would lead to negative consequences. Some evidence exists to show that personal resources play a meaningful role in the relationship between job resources and work engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Previous empirical studies have not specifically explored the possible moderating influence of personal resources in the relationship between work context and psychological outcomes – especially in a public work sector where person variables play such an important role. There is thus a lacuna in existing knowledge in this regard. Therefore, three personal resources, namely, emotional intelligence, self-efficacy and explanatory styles, will be explored in this study as possible moderators in the relationship between work context (job demands and job resources) and psychological outcomes (psychological well-being and work engagement) in a sample of government employees.

In this introductory section the focus of the study will be contextualized with reference to trends in previous research, overarching theoretical models, and main constructs / variables to be explored. The aim of this study will be explicated, and the structure of this thesis delineated.

Theoretical considerations linking work context and well-being

Past efforts to understand the experiences of employees in various work contexts have used among others such models as the Job Characteristics Model (JCM) (Hackman & Oldman, 1980), Job Demand Control (JDC) (Karasek, 1979), and the Job Demand-Resources (JD-R) (Bakker, Demerouti, De Boer, & Schaufeli, 2003; Xanthopoulou et al., 2007). These models have attempted to explain factors associated with the relationship between job demands and burnout and job resources and engagement. The JD-R is used in this study based on its proposition that many different demands and resources may influence employee well-being (Xanthapoulou et al., 2007).

Bakker et al. (2003) proposed this model as a heuristic model of employee well-being to explain how motivation or involvement and health impairment may be produced

by working conditions. According to this model, *job demands* evoke an energy depletion process through characteristics of the job that evoke strain and exceed the employee's adaptive capability. Demerouti, Bakker, Nachreiner, and Schaufeli (2001) explain that high job demands (e.g., work overload, and emotional demands) may exhaust employee's mental and physical resources and may therefore lead to the depletion of energy (i.e., state of exhaustion) and to health problems. *Job resources* on the other hand induce a motivational process through reduction of job demands and the associated physiological and psychological costs. According to Boehm and Lyubomirsky (2008) a job with resources to support an employee is likely to enhance success because this makes the job more pleasant. Job resources are also functional in achieving work goals and they stimulate personal growth, learning, and development. The assumption made by this model is that irrespective of the work context, when certain job demands are high, and when job resources are low, negative occupational outcomes such as stress or burnout are possible. Although these specific negative outcomes are not tested in this study, it may be expected that when job demands are high and job resources are low, the level of psychological well-being and work engagement will be low.

Evidence exists to support that the JD-R model with dual processes predicts outcomes in the work context substantively for health and involvement of employees through energy depletion and motivation (Bakker, Demerouti, & Schaufeli, 2003). The association between job demands, exhaustion and burnout (Demerouti et al., 2001; Schaufeli & Bakker, 2004) and the association between job resources and work engagement (Schaufeli & Bakker, 2004), has also been empirically substantiated. In terms of the present study, job demands and job resources are conceptualised in line with the findings of Rothmann, Mostert, and Strydom (2006) as processes that occur within the same model albeit with different implications for psychological well-being and work engagement.

Some of the assumptions made in the foregoing JD-R model can be better understood in relation to the importance of resources for individuals working in different occupational contexts. The Conservation of Resources (COR) theory by Hobfoll (1989) states that the prime human motivation is to protect, maintain and accumulate resources that would help them cope with stress. Hobfoll (1989) categorises these resources as

follows: *objects* (e.g., shelter, transportation); *conditions* (e.g., full-time employment, marriage), *energies* (e.g., money, time, knowledge, insurance) and *personal characteristics* (e.g., mastering, self-esteem, self-efficacy). The latter resources are linked to personality traits and skills which assist people with managing stress and may be typical of the personal resources used in this study as possible moderators of the relationship between work context and psychological outcomes. Thus from an organisational perspective, the JD-R model, which is expanded to included personal resources as well as the conservation of resources model all work together to explain the importance of job demands and even more so job resources in establishing the psychological outcomes of employees in terms of psychological well-being and work engagement. Simply, the importance of resources suggests the possibility of interaction between work context and personal resources to predict psychological outcomes.

Work context and psychological outcomes

Although the foregoing has attempted to theoretically and empirically demonstrate that work context can have both negative and positive consequences for employees (see Rothmann, 2003) only two positive outcomes, viz., psychological well-being and work engagement, receive attention in this study based on the study's psychofortological orientation. Various models have attempted to explain the relationship between workplace conditions and physical and mental health. The workplace domain can exert a profound influence on the way people view themselves and it also constitutes a crucial ingredient in the construction of their social identities (Stewart, Ward, & Purvis, 2004). Depending on the conditions and nature of work, the psychological outcomes of individuals can be enhanced, reduced, or remain unaffected by their work-related experiences. Nevertheless, the implications for psychological outcomes are important to consider especially as they have many implications for employees.

The Affective events theory (AET) proposed by Weiss and Cropanzano (1996) summarises how work contexts and their characteristics can influence individuals. Weiss and Cropanzano (1996) proposed that work context and its characteristics predispose the occurrence of certain work events that lead to specific emotions, which in turn shape

work attitudes and behaviours. Particularly, this proposition further suggests that affective reactions may have immediate influence on work actions and may influence work attitudes and cognitive-driven behaviours over time. However, it has been shown that differences exist in the particular cognitive and motivational strategies used by self-rated happy and unhappy people and that the strategies they use moderate the impact of the objective environment on well-being (Lyubomirsky, 2001). It is important to understand the dynamics of psychological outcomes in the workplace as this has implications for productivity of employees and future plans to support such productivity.

Psychological well-being. Different conceptualisations of psychological well-being are mentioned in the literature, e.g., eudaimonic and hedonic well-being (Ryan & Deci, 2001; Waterman, 1993). Keyes (1998) added social well-being to the category of eudaimonic well-being characteristics. The eudaimonic perspective focuses on meaning and self-realization and defines well-being in terms of optimal functioning whereas the hedonic perspective defines psychological well-being in terms of happiness, pleasure and pain avoidance. Social well-being is defined in terms of social coherence, social integration, social acceptance, social contribution, and social actualisation (Keyes, 1998). Psychological well-being in this study will be conceptualised and measured as a multidimensional, general psychological well-being factor that includes both eudaimonic and hedonic perspectives as identified by Wissing and Van Eeden (2002) comprising of positive affect, negative affect, and satisfaction with life. Overall, a person who is psychologically well can experience life as satisfying, hopeful, and meaningful, have meaningful relationships and also have the capacity to maintain a level of affective well-being in challenging times and accept support from others. Thus, facets such as satisfaction with life, and a preponderance of positive over negative affect are an important consideration (see also Cotton & Hart, 2003).

Work engagement: Work engagement is seen as a positive state in the workplace where individuals function optimally and are filled with energy, have vigour, are absorbed, dedicated and efficacious (Bakker & Schaufeli, 2008; Mauno, Kinnunen, & Ruokolainen, 2007). This implies that an employee who is engaged experiences lots of

energy, is involved in their work and feels a sense of efficacy. Rothmann and Storm (2003) and Maslach, Schaufeli, and Leiter (2001) found that engagement was predicted by active coping, the inverse of job demands, the inverse of avoidance, seeking emotional support, turning to religion and the inverse of lack of resources. The model of engagement as described by Maslach et al. (2001) consists of vigour, dedication and absorption. *Vigour* is described as having high energy levels, and being resilient, being willing to invest effort in one's job, being persistent and not easily fatigued or tired out. *Dedication* is described as being fully involved in one's work, together with feelings of significance, enthusiasm, pride and inspiration. *Absorption* is partly described as the ability to be fully immersed in one's work, in terms of time passing quickly without one realising it. On the other hand, absorption is also considered to be the inability to detach oneself from one's job. Although Rothmann and Storm (2003) found evidence for this 3-factor model of engagement with acceptable internal consistencies, Prieto et al. (2008) suggest that it is best to exclude absorption in analysis because it could be considered a result of engagement. Thus, in this study work engagement is conceptualised in terms of vigour and dedication only.

Personal resources associated with work

Emotional intelligence (EI): Salovey and Mayer (1990) who coined the term emotional intelligence describe it as a form of social intelligence that involves the individual's ability to monitor their own and others' feelings and emotions, to discriminate among them, and to use this information to guide their thinking and action. The relevance of this construct in the work context is supported by observations where individuals who scored high on emotional intelligence were better able to respond flexibly to changes in their social environments and build supportive social networks (Salovey, Bedell, Detweiler, & Mayer, 1999). The individual's access to their feelings, the labelling of those feelings and the expression of those feelings is part of the individual's intrapersonal capacity (cf. Brackett, Mayer, & Warner, 2004; Salovey & Mayer, 1990) that influences the individual's ability to cope effectively with environmental demands and pressures. Literature generally defines EI as either a trait or

an ability (Furnham & Petrides, 2003; Mikolajczak, Menil, & Luminet, 2007; Schutte, Malouff, Simunek, McKenley, & Hollander, 2002) where ability is measured using performance tests and trait EI is operationalised using self-reports. In this study, EI is defined in line with Schutte et al.'s (1998) conceptualisation based on their self-report 33-item scale that assesses the extent to which respondents characteristically identify, understand, harness, and regulate emotions in themselves and others.

From some of the literature, EI can be construed as a personal resource in as it increases employees' ability to navigate their work environment (Jordan, Ashkanasy, & Hartel, 2002; Xanthopoulou et al., 2007). Slaski and Cartwright (2003) note an earlier study of theirs where they found that individuals with high emotional intelligence scores experienced less stress, and had significantly better levels of health and well-being. However, other authors are of the opinion that the link between health behaviour, health status and EI has not been widely examined (Mikolajczak et al., 2007) nor its relationship to workplace psychological outcomes (Lopes, Grewal, Kadis, Gall, & Salovey, 2006). Thus, EI as personal resource receives attention in this study to test whether it moderates the relationship between work context and psychological outcomes.

General self-efficacy (GSE): Self-efficacy beliefs refer to individuals' convictions of their own capacity to handle difficult situations and to handle associated stumbling blocks and stress (Schwarzer & Jerusalem, 1995). Self-efficacy as conceptualized by Tipton and Worthington (1984) refers to the degree of generalized self-efficacy beliefs of an individual, i.e., a relatively enduring set of beliefs that one can cope effectively in a broad range of situations. The construct is based on Bandura's theory of self-efficacy which postulates that self-efficacy expectations determine what activities people engage in, how much effort they will expend and how long they will persevere in the face of adversity. Xanthopoulou et al. (2007) regard SE as a personal resource as it is seen to increase an individual's ability to exert control over their environment and impact it with greater success. SE is also shown to be a buffer for work stress and increases motivation (Heuven, Bakker, Schaufeli, & Huisman, 2006; Stetz, Stetz, & Bliese, 2006). There is also evidence to show that the relationship between job demands and coping is moderated by SE (Salanova, Grau, & Martinez, 2006). In a work context SE may be a moderating

factor between demands/resources on the one hand and psychological outcomes such as psychological well-being and engagement on the other hand. In this study the role of general self-efficacy (GSE) will be explored. It is noted in the literature that authors do not always indicate whether they are exploring general or task specific forms of self-efficacy, which may complicate the interpretation of findings. In this study however, SE is conceptualised as a general form of efficacy.

Explanatory style (ES): Explanatory style is a cognitive personality variable and personal resource that can be used to assess how people explain or attribute positive or negative events which occur in their lives (Bunce & Peterson, 1997; Ferrie, Shipley, Newman, Stansfeld, & Marmot, 2005; Sanjuán, Pérez, Rueda, & Ruiz, 2008) and thus has wide application. A distinction is made in this study between optimism and pessimism. Optimism is seen as the tendency to explain positive events in terms of personal, permanent and global causes while negative events are explained in terms of external, temporary and situation-specific causes (Seligman, 1998). Pessimism is the opposite of optimism and it undermines the favourable impact of success and increases the likelihood that failures could be potentially destructive (see Youssef & Luthans, 2007). Chang and Sanna (2003) indicate that based on this conceptual definition of optimism and pessimism, it is not surprising that they have been found to moderate the relationship between stress and adjustment. However, high levels of optimism do not necessarily imply low levels of pessimism and vice versa. Proudfoot, Corr, Guest, and Dunn (2009) suggest that the consequences of the latter for the workplace could be absenteeism and turnover intention. In the case of employment and workplaces, it is possible that explanatory style is important. An employee with a more optimistic explanatory style is more likely to see negative events as externally caused, unstable and specific in character and is therefore more likely to have higher expectations of themselves and their jobs, be more willing to take the initiative, to take risks and to persist under adverse conditions. In terms of theory, an employee who explains negative events in an internal, stable and global way (a pessimistic style) will have lower expectations of themselves and their jobs and are thus more likely to become burnt out. The constructs 'attributional style' and 'explanatory style' will be used as synonyms for

purposes of this study. This study has demonstrated the importance of explanatory style in the public service context.

The South African public service context

The work context of public servants in South Africa, who are the focus in this study, is underpinned by an ethos of a unified public service (cf. Department of Public Service and Administration [DPSA] Annual Report, 1999 – 2000), improved service delivery by public servants (cf. Public Service Management Framework), and improved access to Government services (cf. Batho Pele Campaign & Principles, DPSA website) based on a public service charter, aptly named Batho Pele (people first). Batho Pele is a customer-service oriented charter based on the following eight principles: consultation, service standards, access, courtesy, information, openness and transparency, redress, and value for money. It is a matter of common knowledge that prior to 1994, the South African service was fragmented and access to these services was based on race and ethnicity. A public service that is sensitive to the needs of citizens and has the capacity to meet these needs and apply effective policy implementation and service delivery is required. Although public sector employment seemingly provides greater security of tenure compared to the private sector, the activities surrounding transformation have influenced job security, and have also influenced a host of other factors including a variety of attitudes, behaviours, and concerns regarding continued employment (Albrecht & Travaglione, 2003). Job security in particular is a specific work characteristic that is associated with lower levels of work engagement (Leiter & Harvie, 1997; Rothbard, 2001) which is an important psychological outcome considered in this study.

Conclusion and possible contribution of study

Previous research has shown that work contexts influence psychological outcomes (Demerouti et al., 2001; Fernet, Guay, & Senécal, 2004; Jackson, 2004), and that cognitive appraisal and especially personal resources, are important in the different outcomes for individuals in the workplace (cf. Cartwright & Cooper, 2004; Fitzgerald,

2002; Linley & Joseph, 2002). The role and dynamics of specific personal resources (emotional intelligence, self-efficacy and explanatory style) in the relationship between work context and psychological well-being are not yet known. Therefore the current study envisages contributing to this gap in knowledge and possibly point to directions for enhancement of service delivery in the public sector.

Aims of this study

The aim of this study is to test the prediction of psychological outcomes by personal resources such as emotional intelligence, self-efficacy, and explanatory style and work context factors on the one hand, and whether these personal resources play a moderating role in the relationship between the work context of public servants and their psychological outcomes on the other hand. It is expected that personal resources and work context factors will significantly predict psychological outcomes. Secondly, it is expected that the interaction between personal resources and work context factors will differentially influence psychological outcomes.

Structure of thesis

This thesis is presented in article format according to Regulation A.14.4.2 in line with rules A.13.7.3, A.13.7.4 and A.13.7.5 of the North-West University and comprises of three manuscripts presented consecutively together with guidelines for authors as applicable for the specific journal.

In section two the aim of the first study was to explore the role of emotional intelligence (EI), a personal resource, as a moderator between work context (job demands and job resources) and psychological outcomes (psychological well-being and work engagement). In section three the aim of the second study was to explore self-efficacy (SE), as a personal resource and moderator between work context (job demands and job resources) and psychological outcomes (psychological well-being and work engagement). Section four presents the third manuscript whose aim was to explore explanatory style (ES) as a personal resource and moderator in the relationship between work context (job

demands and job resources) and psychological outcomes (psychological well-being and work engagement).

In a final section (five) the main findings are summarised, implications indicated and some recommendations made for further research and practice.

Section 2: Article 1

Emotional Intelligence, Work, and Psychological Outcomes in a Public Service Context

Accepted for publication in the

Journal of Psychology in Africa

2.1 Journal of Psychology in Africa: Instructions to Authors

The **Journal of Psychology in Africa** includes original articles, review articles, book reviews, commentaries, special issues, case analyses, reports, special announcements, etc. Contributions should attempt a synthesis of local and universal methodologies and applications. Specifically, manuscripts should:
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All pages must be numbered consecutively, including those containing the references, tables and figures. The typescript of manuscripts should be arranged as follows: **Title:** This should be brief, sufficiently informative for retrieval by automatic searching techniques and should contain important key-words (preferably <10 words).
Author(s) and Address(es) of author(s): The corresponding author must be indicated. The author's respective addresses where the work was done must be indicated. An e-mail

address, telephone number and fax number for the corresponding author must be provided.

Abstract: Articles and abstracts must be in English. Submission of abstracts translated to French, Portuguese and/or Spanish is encouraged. For data-based contributions, the abstract should be structured as follows: *Objective*—the primary purpose of the paper, *Method* – data source, subjects, design, measurements, data analysis, *Results* – key findings, and *Conclusions* – implications, future directions. For all other contributions (except editorials, letters and book reviews) the abstract must be a concise statement of the content of the paper. Abstracts must not exceed 120 words. It should summarize the information presented in the paper but should not include references.

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Sternberg, R. J. (2001, June). *Cultural approaches to intellectualand social competencies*. Paper presented at the Annual Convention of the American Psychological Society, Toronto, Canada.

Cook, D. A., & Wiley, C. Y. (2000). Psychotherapy with members of the African American churches and spiritual traditions. In P. S. Richards & A. E. Bergin (Ed.), *Handbook of psychotherapy and religiosity diversity* (pp. 369-396). Washington DC: American Psychological Association.

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2.2 Manuscript

Emotional Intelligence, Work, and Psychological Outcomes in a Public Service Context

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Abstract

This study examines the role of emotional intelligence in the relationship between work context (conceptualised as job demands and job resources) and psychological outcomes (conceptualised as engagement and psychological well-being) in a sample of public sector employees (N=459). The Job Demands-Resources Scale (Rothmann et al., 2006), the Utrecht Work Engagement Scale (Schaufeli et al., 2002), the Satisfaction with Life Scale (Diener et al., 1985), the Affectometer 2 (Kammann & Flett, 1983), and the Emotional Intelligence Scale (Schutte et al., 1998) were implemented in a cross-sectional design. Regression analyses showed that emotional intelligence had main effects on psychological outcomes. Emotional intelligence also moderated the effects of work context factors on psychological outcomes. Emotional intelligence is a valuable personal resource to cultivate for facilitation of psychological well-being in the workplace.

Keywords: Emotional intelligence; job demands; job resources; work engagement; psychological well-being; public service context.

(Number of words in abstract = 128)

Introduction

This article examines the possible effects of emotional intelligence (EI) and work context factors on psychological outcomes. Many authors agree that work context and its characteristics predispose the occurrence of certain work events that lead to specific emotions (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Heuven, Bakker, Schaufeli, & Huisman, 2006; Weiss & Cropanzano, 1996) which could lead to work engagement or burnout (Heuven et al., 2006) as psychological outcomes. Available evidence shows that psychological outcomes in the workplace can also be influenced by individual difference variables such as EI (Jordan, Ashkanasy, & Hartel, 2002) which may explain the differential influences of work context factors (Kammeyer-Mueller, Judge & Scott, 2009) on psychological outcomes. Research specifically on EI and workplace psychological outcomes is still scant (Austin, Saklofske, & Egan, 2005; Lopes, Grewal, Kadis, Gall, & Salovey, 2006) especially in research with EI as a moderator in the stressor-strain relationship (Day, Therrien, & Carroll, 2005; Kammeyer-Mueller et al., 2009). The consideration of EI as a moderator is particularly important as it is thought to help individuals to control their environment (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007) and thus contribute to their psychological well-being (Prieto, Soria, Martinez, & Schaufeli, 2008). The present study aims to test main effects for work context factors and EI on psychological outcomes and the interactive effects of work context factors and EI on psychological outcomes.

Emotional intelligence in the work context: There is as yet no single definition of EI. Some authors agree though that EI is distinguishable as trait or ability (Furnham & Pertrides, 2003; Mikolajczak, Menil, & Luminet, 2007; Schutte, Malouff, Simunek, McKenley, & Hollander, 2002). According to Salovey and Mayer (1990), EI consists of (i) the abilities to perceive one's own and others' emotions and to accurately express one's own emotions, (ii) facilitate thought and problem-solving through use of emotions, (iii) understand the causes of emotion and relationships between emotional experiences, and (iv) manage one's own and others' emotions. Salovey (2001) argued that individuals who are high in EI and capable of regulating and expressing their emotions should be

psychologically and physically healthier than individuals with low emotional intelligence. It has been shown that individuals varying in levels of trait EI use different emotional labour strategies with different outcomes for burnout and somatic complaints (Mikolajczak et al., 2007). Jordan et al. (2002) explain that EI incorporates a broad range of abilities and helps individuals manage their own emotion in the workplace.

Oginska-Bulik (2005) found that employees reporting a high EI perceived a lower level of occupational stress and suffered less from negative health consequences. Previously it was shown that people with high levels of EI experienced more career success, built stronger personal relationships, led more effectively, and enjoyed better health than those with low EI (Cooper, 1997). Individuals with high EI have been shown to be more likely to adopt reflection and appraisal, social, organisational and time management skills whereas those low in EI were more likely to be engaged in health-damaging behaviours (Pau, Croucher, Sohanpal, Muirhead, & Seymour, 2004) and they are likely to be more psychologically and physically healthier than individuals with low emotional intelligence (Salovey, 2001; Schutte et al., 2002).

Austin et al. (2005) argue that given the intrapersonal EI subcomponents related to emotion management, it seems reasonable to assume that high EI would be associated with better stress management and low levels of psychological distress. Bardzil and Slaski (2003) go as far as to suggest that EI captures many of the key competencies involved in creating and maintaining an appropriate climate for service in organizations, and may serve to reduce some of the emotional problems inherent in high levels of interpersonal interactions. Although the literature does not clearly indicate a clear moderation of EI between work context and psychological outcomes, Ciarrochi, Deane, and Anderson (2002) point out that some evidence exists to suggest that EI may buffer people from stress and lead to better adaptation. Typically a moderator such as EI changes the strength of the relationship between a predictor and a criterion variable (Frazier, Tix, & Barron, 2004). Conceivably, at different levels of EI the relationship between a predictor variable such as work context factors and a criterion variable such as psychological outcomes could be strongly or weakly related. This would show that the effect of work context factors on psychological outcomes differs across the levels of EI

thereby suggesting a significant interaction (Dawson & Richter, 2006). It is important to understand the antecedents of psychological outcomes and the specific role of EI.

Psychological outcomes. Psychological outcomes in the workplace have generally been classified in terms of pleasant/unpleasant emotions and arousal (Mäkikangas, Feldt, & Kinnunen, 2007). For the purposes of this study psychological outcomes are conceptualised and operationalised in terms of levels of psychological well-being and the degree of work engagement. The former is described in terms of satisfaction with life (Diener, Emmons, Larsen, & Griffin, 1985) and positive and negative affect based on the Affectometer scale by Kammann and Flett (1983). According to Cotton and Hart (2003), the structure of the well-being of employees includes both emotional and cognitive components. The emotional component is made up of positive and negative affect, whereas the cognitive component is made up of the employee's judgement about their levels of satisfaction with their work (Mäkikangas et al., 2007). Affect is a critical aspect of well-being in the work context (Van Horn, Taris, Schaufeli, & Schreurs, 2004) and it is possible that negative outcomes of work can also be caused by low levels of positive work experiences and low positive emotional states (Cotton & Hart, 2003).

Work engagement as the second psychological outcome is conceptualised as vigour, dedication and absorption in line with the Utrecht Work Engagement Scale (UWES) as developed by Schaufeli, Salanova, Gonzalez-Romá, and Bakker (2002). A few studies have used the two-factor model of work engagement as in this study (Gonzalez-Roma, Schaufeli, Bakker, & Lloret, 2006) where others could not replicate the three-factor structure (Shimazu et al., 2008). The two-factor structure will be used in this study. Work engagement is considered to be a multidimensional construct which has to do with a positive, fulfilling, work-related state of mind (Salanova & Schaufeli, 2008; Schaufeli et al., 2002). Vigour has to do with high energy levels, the willingness to invest effort in one's work, persistence in the face of difficulties and mental resilience while working. Dedication on the other hand, refers to involvement in one's work with enthusiasm, inspiration, pride and challenge. Rothmann and Storm (2003) and Maslach, Schaufeli, and Leiter (2001) for example, found that engagement was predicted by active coping, the inverse of job demands, the inverse of avoidance, seeking emotional support,

turning to religion and the inverse of lack of resources. Bakker and Demerouti (2007) indicate that because of their positive attitude and activity level, engaged employees create their own positive feedback in terms of appreciation, recognition, and success. Engagement is characterised by a high level of energy and strong identification with the work of the person concerned (Schaufeli & Bakker, 2001).

To support the validity of these constructs, facets of psychological well-being and dimensions of work engagement will be expected to correlate positively with measures of optimal functioning and negatively with measures of symptoms of distress. The theoretical model used in this study, namely, the Job Demands-Resources model will help contextualise this hypothesis as it heuristically explains the influence of work characteristics on psychological outcomes.

The Job Demands-Resources (JD-R) model. This model proposed by Demerouti et al. (2001) explains that work context factors such as high job demands (e.g., work overload, and emotional demands) may exhaust an employee's mental and physical resources and may therefore lead to the depletion of energy (i.e., state of exhaustion) and to health problems (e.g., burnout). Job resources on the other hand induce a motivational process through reduction of job demands and the associated physiological and psychological costs. Job resources are also functional in achieving work goals and they stimulate personal growth, learning, and development and may lead to engagement. Recently, this model has included personal resources such as emotional intelligence and others that conceptually include cognitive appraisal (Prieto et al., 2008). These personal resources could influence the role of work context factors like job demands and job resources on psychological outcomes (Xanthopoulou et al., 2007).

Goals of the Study. No research could be found on the role of EI between work context factors and psychological outcomes in a public service context in South Africa. The context of the present study will be the South African Public Service, which has been challenged to deliver quality service to all citizens of the country. Hitherto, the Department of Public Service and Administration has had to unify a fragmented and unstructured public service, through processes of transformation, restructuring and in some cases redeployment (PSCBC Resolution 7 of 2002). The literature also shows that EI may play a role in the psychological outcomes of an employee's experience of the

workplace (Bardzil & Slaski, 2003; Dulewicz & Higgs, 1998; Schutte et al., 2002) albeit with little or no literature indicating its specific role in such relationships. Employees also use different strategies to respond to these outcomes, such as active coping or experience depersonalisation, among others (Maslach et al., 2001; Rothmann & Storm, 2003; Schaufeli & Bakker, 2001). It has also been indicated that job demands and job resources influence different outcomes for employees in terms of burnout and work engagement (Schaufeli & Greenglass, 2001) but that personal resources such as EI may play a role in the relationship between these work context factors and psychological outcomes. It is thus hypothesised that:

(i) Work context factors and EI will significantly predict psychological outcomes.

(ii) The interaction between EI and work context factors will significantly predict psychological outcomes.

Method

Design and participants. A cross-sectional survey research design was implemented. A convenience sample of 459 participants responded to the survey out of a targeted possible 1500 participants. Szelényi, Bryant, and Lindholm (2005) suggest that a response rate of 32% is acceptable in self-report surveys such as the present one. The sample response rate in this study could have been influenced by the length of the test battery sent to participants as it consisted of an excess of 250 items inclusive of all scales that formed part of a larger study. The participants were all North West Provincial Government employees with at least the qualifications of Matric (Standard 10 / Grade 12). The sample comprised of more females (59.5%) as compared to males (32.9%). More than half of the participants (56.7%) came from the age categories 25 through 44, whereas 5.9% were in the age group 18 to 24, 31.8% were in the age categories 45 through 55 and above. In terms of education, 35.9% of the participants had matriculation, 36.2% had some tertiary education in the form of a Bachelor's degree or diploma and 12.9% had a postgraduate degree. The majority of participants listed their category of employment as management (ranging from assistant director through deputy director to director and above: 50.7%)

whereas 42.9% of the employees could be considered operational. Few of the participants had been affected by restructuring in government (29.4%) as compared to 65.1% who had not been affected by restructuring. Only 21.6% have considered leaving government employment to seek employment elsewhere, as opposed to 72.5% who have not considered this question. Percentages may not add to 100% owing to missing data in some categories.

Instruments. A demographic questionnaire was compiled by the first author to capture demographic information such as age, gender, marital status, present job category, type of job performed and turnover intention.

The *Emotional Intelligence Scale* (EIS) (Schutte et al., 1998) was developed as a self-report measure of EI and appraises the following aspects: Optimism / mood regulation, appraisal of emotions, social skills and utilisation of emotions in self and others, and utilisation of emotions in solving problems. It consists of 33 items with response categories ranging from strongly agree to strongly disagree and rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Schutte et al. (1998) obtained an internal consistency coefficient of 0.90 for the scale. The Flesch-Kincaid analysis of the scale by Schutte, Malouff, Hall, Haggerty, Cooper, Golden, and Dornheim (1998) reveals that the scale has a typical reading level of 5th graders. Saklofske, Austin, and Minski (2003) report Cronbach alpha value of 0.89 on this scale in a sample of Canadian undergraduate university students. In a further study, Austin, Saklofske, Huang, and McKenny (2004) report that this scale provides a reliable and valid trait EI measure. An exploratory factor analysis in the present study yielded one factor explaining 29.76% of the variance after excluding items, 5, 28, 29 and 33 (characterized as non-verbal items). See Table 1 for the internal reliability index for this study.

The Job Demands-Resources Scale (JD-RS) (Rothmann, Mostert, & Strydom, 2006) consists of 48 items and was developed to assess job demands and job resources based on the following dimensions: pace and amount of work, mental load, emotional load, variety in work, opportunities to learn, independence in work, relationships with colleagues,

relationship with supervisor, ambiguities about work, information, participation, contact possibilities, remuneration and career possibilities. All the items were rated on a scale varying from 1 (*never*) to 4 (*always*). In a psychometric study of the JD-RS, Rothmann et al. (2006) found that this scale is valid and reliable for use in different organisations in South Africa. Rothmann et al. (2006) report the following reliabilities for the factors of the JDRS: Growth Opportunities, (α = 0.86), Organisational Support (α=0.92), Advancement (α = 0.83), Overload (α = 0.76) and Job Insecurity (α = 0.89) in a stratified sample of 2717 employees from different sectors of employment. Similar to the study by Rothmann et al. (2006) job resources in this study is made up of Growth Opportunities, Organisational Support, and Advancement, whereas job demands is made up of Overload and Job Insecurity. Internal reliabilities for the present study are reported in Table 1.

The *Satisfaction with Life Scale* (SWLS) (Diener et al., 1985) is a 5-item scale that was developed to give an indication of a person's general satisfaction with life. A person's evaluation of his quality of life, according to his own criteria, is measured on a cognitive-judgmental level. The items were rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Diener et al. (1985) report a two month test-retest reliability index of 0.82, and a Cronbach alpha-reliability index of 0.87 in a sample of 176 undergraduate students. Pavot and Diener (1993, 2008) also attest to the good psychometric characteristics of this scale. Wissing, Wissing, du Toit, and Temane (2008) also found the SWLS reliable and valid for use in purposively selected samples of black and white participants

The *Affectometer-2 Short-form* (AFM) (Kammann & Flett, 1983) was developed to measure a general sense of well-being or general happiness. Psychological well-being is measured on an affective level by determining the balance between Positive and Negative Affect (Kammann & Flett, 1983). Two equivalent parts of the AFM exist: the 20-sentence item scale and the 20-adjective item scale. The 20-sentence item scale was used in the present research. Sub-scales measure Positive Affect (10 items) and Negative Affect (10 items). The more Positive Affect predominates over Negative Affect, the higher the overall level of well-being (Kammann & Flett, 1983). The items were rated on

a 5-point scale ranging from 1 (*not at all*) to 5 (*all the time*). These authors report Cronbach alpha-reliability indices of 0.88 to 0.93. In a sample of black and white South African adults, Wissing et al. (2008) also found evidence of the reliability of this scale.

The *Utrecht Work Engagement Scale* (UWES) (Schaufeli et al., 2002). The scale was used in this study to measure Work Engagement. The UWES comprises of 17 items and measures three dimensions, namely Vigour, Dedication, and Absorption. Items are rated on the basis of the frequency of occurrence, varying from 0 (*never*) to 6 (*everyday*). Naudé (2003) and Rothmann and Storm (2003) used confirmatory analysis to demonstrate the factorial validity of the UWES. Jackson (2004) reports the following internal reliabilities of the subscales: Vigour (0.71), Dedication (0.81), and Absorption (0.57) in a stratified sample of 1170 educators in the North West Province of South Africa. The Cronbach alpha for the two dimensions of work engagement used in this study, are also reported in Table 1.

Procedure. Firstly, the Director General of the North West Provincial Government (NWPG) was approached to solicit permission to conduct the study among NWPG employees. After permission had been granted to conduct the study, the first author approached Employee Assistance Programme (EAP) coordinators through the Provincial EAP forum. EAP Coordinators were trained in the administration of the questionnaires and the ethical implications of data collection, and they also oversaw the completion of the questionnaires by participants in the study. Questionnaires were dispatched by the EAP coordinators to a convenience sample of 1500 NWPG employees with at least a matriculation certificate in the respective departments. The participants gave informed consent to indicate their willingness to participate in the study by signing a return slip. The coordinators were asked monthly by the first author to remind respondents to submit completed questionnaires. All ethical guidelines in the treatment of human subjects in research were observed in all the steps of the study. Ethical approval was obtained from the Ethics Committee of the North-West University, Potchefstroom Campus (05K10). Following the data collection phase, data were cleansed and analysed.

Statistical analysis. The SPSS statistical package was used to conduct all the basic analyses (SPSS Inc., 2006).The descriptive statistics of all measures employed in the study were calculated, and consequently their means, standard deviations, and Cronbach alphas are reported. As the role of EI between work context factors and psychological outcomes was central to the study, the criterion validity of EI was tested and intercorrelations among measures of optimal psychological functioning are reported. The significance of the correlations is reported in terms of the practical significance of the correlation (Field, 2005).

Both main effects and interaction effects were tested in this study. Multiple regression analyses were calculated to test the main effects of work context variables (job demands and job resources) on psychological outcomes (psychological well-being and Work Engagement). The coefficient of determination (R^2) is primarily reported as an indication of the amount of variance explained by the predictor variables in the criterion variables. The significant contribution made by the various dimensions is highlighted by referring to associated student t-values, their significance levels and standardised regression coefficients.

Secondly, hierarchical regression analyses were used to test whether EI moderated between work context variables and psychological outcomes. Dawson and Richter, (2006) and Preacher, Curran, and Bauer (2006) indicate that moderation is important in explaining and testing the interactive effects of two or more variables in predicting a dependent variable while controlling for associated main effects. In preparation for testing the main effects, all independent variables (viz., dimensions of job demands and job resources and EI) were centred so as to obviate any multicollinearity (Brambor, Clark, & Golder, 2006). This is achieved by computing the deviations of the scores of the independent variables from their means. Subsequently, hierarchical regression analyses were computed. In the first step all predictor variables in their interval form (i.e., all dimensions of job demands and job resources on the one hand and emotional intelligence on the other hand), followed by their interactions in the second step were entered into the regression equation.

A significant interaction term indicates that the effect of work context on either psychological well-being or Work Engagement differs across the levels of Emotional

Intelligence. Heuven et al. (2006) report the significance of standardised regression coefficients as evidence of moderation with the significance of the change in the coefficient of R^2 determination (ΔR^2). Significant interactions will be graphically represented. Mitchell and Jolley (2007) indicate that in the case of the latter, if two lines are not parallel, an interaction could be present.

Results

Descriptive Statistics. Descriptive statistics for all measures used in the study are reported in Table 1. The Cronbach alphas indicate that the internal consistency of the scales used in the study were above the recommended level of 0.70 by Clark and Watson (1995) except for one of the subscales of the UWES, namely Vigour. Table 1 shows however that on average, scores especially for Work Engagement (Vigour and Dedication), job demands (Overload and Insecurity), job resources (Organisational Support, Growth Opportunities and Advancement) are comparable to national norms (Rothmann & Jordaan, 2006).

(Insert Table 1 here)

Inspection of Table 2 indicates that Emotional Intelligence is practically significantly positively related to Satisfaction with Life (medium effect), Positive Affect (large effect), Vigour, and Dedication (both medium effects). Satisfaction with Life is practically significantly positively related to Positive Affect (medium effect). Positive Affect is practically significantly related to Negative Affect (negatively), Vigour and Dedication (positively) with all of them yielding medium effects. Vigour is practically significantly positively related to Dedication (large effect), Organisational Support and Growth Opportunities (last two both medium effects). Dedication is practically significantly positively related to Organisation Support (medium effect) and Growth Opportunities (large effect). Organisational Support is significantly positively related to Growth Opportunities (large effect) and Advancement (medium effect). The relationship between EI and job demands was not significant (see Table 2).

(Insert Table 2 here)

Influence of work context on well-being. Multiple regression analyses were conducted to test the degree of influence of work context factors on psychological well-being and Work Engagement as criterion or dependent variables.

Satisfaction with Life, EI, Job Demands and Job Resources. Job demands, job resources and Emotional Intelligence significantly predicted Satisfaction with Life, F (6,452) = 18.27, $p < 0.01$, $R^2 = 0.20$. Three variables made a statistically significant contribution to the regression model: Overload, $\beta = -0.09$, $t = -2.02$, $p < 0.05$, Job Insecurity, $\beta = -0.15$, $t = -3.31$, $p < 0.01$, and Emotional Intelligence, $\beta = 0.42$, $t = 9.29$, $p < 0.01$.

Affect, EI, Job Demands and Job Resources. Job demands, job resources and Emotional Intelligence significantly predicted Positive Affect, F (6,452) = 45.84, $p < 0.01$, $R^2 = 0.38$. Four variables made a statistically significant contribution to the regression model: Overload, $\beta = -0.14$, $t = -3.60$, $p < 0.01$, Job Insecurity, $\beta = -0.08$, $t = -2.11$, $p < 0.01$, Growth Opportunities, $\beta = 0.09$, $t = 1.98$, $p < 0.05$, and Emotional Intelligence, $\beta = 0.58$, $t = 14.63$, $p < 0.01$.

Job demands, job resources and Emotional Intelligence significantly predicted Negative Affect, F (6,452) = 11.95, $p < 0.01$, $R^2 = 0.14$. Five variables made a statistically significant contribution to the regression model: Overload, $\beta = 0.13$, $t = 2.79$, $p < 0.01$, Job Insecurity, $\beta = 0.21$, $t = 4.50$, $p < 0.01$, Growth Opportunities, $\beta = -0.12$, $t = -2.06$, $p < 0.01$, Advancement, $\beta = 0.16$, $t = 4.01$, $p < 0.01$, and Emotional Intelligence, $\beta = -0.20$, $t = -4.30$, $p < 0.01$.

Work Engagement, EI, Job Demands and Job Resources. Job demands, job resources and Emotional Intelligence significantly predicted Vigour, F (6,452) = 32.96, $p < 0.01$, $R^2 = 0.30$. Three variables made a statistically significant contribution to the regression model: Job Insecurity, $\beta = 0.17$, $t = 3.99$, $p < 0.01$, Growth Opportunities, $\beta = 0.35$, $t = 6.92$, $p < 0.01$, and Emotional Intelligence, $\beta = 0.23$, $t = 5.45$, $p < 0.01$.

Job resources and Emotional Intelligence significantly predicted Dedication, F (6,452) = 41.14, $p < 0.01$, $R^2 = 0.35$. Three variables made a statistically significant contribution to the regression model: Overload, $\beta = -0.16$, $t = -3.93$, $p < 0.01$, Job Insecurity, $\beta = 0.12$, $t = 3.04$, $p < 0.01$, and Emotional Intelligence, $\beta = 0.27$, $t = 6.64$, $p < 0.01$.

The results of the main effects indicate support for the hypothesis that work context and EI will significantly predict psychological outcomes.

Moderation effects of EI. The moderation of EI between job resources and job demands as (measured by the JD-R) and both psychological well-being (as defined by Positive Affect, Negative Affect and Satisfaction with Life) and Work Engagement (Vigour and Dedication) was tested with hierarchical regression procedures. In an attempt to test the possibility of any interaction effects, the centred predictors and moderators were entered first into the regression equation followed by their interactions in the second step to predict facets of psychological well-being and Work Engagement. The results of the hierarchical regressions are reported in tables 3 and 4.

Table 3 shows that the interaction terms among Growth Opportunities, Advancement, and Overload with EI as predictors of Negative Affect yielded a significant finding ($F = 5.43$, $\Delta R^2 = 0.04$, $p < 0.05$). Although small, the significant interaction effects were plotted as indicated by Figures 1, 2 and 3.

(Insert Table 3 here)
(Insert Figure 1 here)
(Insert Figure 2 here)
(Insert Figure 3 here)

Figure 1 shows that at a low level of EI (compared with a high level), the relationship between low Growth Opportunities and Negative Affect was somewhat stronger. Figure 2 shows that at a low level of EI (compared with a high level), high Advancement was more strongly related to Negative Affect. Last, Figure 3 shows that at a low level of EI

(compared with a high level), high Overload showed a stronger association with low Satisfaction with Life.

Figure 4 shows that at a low level of EI (compared to a high level) Growth Opportunities was less strongly related to Dedication. Figure 5 shows that at a low level of EI (compared to a high level), Advancement was more negatively related to Dedication.

(Insert Table 4 here)
(Insert Figure 4 here)
(Insert Figure 5 here)

Figure 4 shows that at both levels of EI low Growth Opportunities were related to lower levels of dedication as opposed to higher levels of Growth Opportunities that were related to higher levels of Dedication. Figure 5 shows that at low levels of EI, low Advancement was related to low levels of Dedication.

The results show partial support for the hypothesis that the interaction between EI and work context factors will significantly predict psychological outcomes. The interactions were only significant for Negative Affect, Satisfaction with Life and Dedication.

Discussion

The aim of the study was to test whether EI moderates between work context factors (job demands and job resources) and psychological outcomes (psychological well-being and work engagement). Overall, the results of the study showed significant main effects for job demands and job resources (as work context factors) and EI as predictors on psychological outcomes, and secondly that EI moderates the relationship between work context and psychological outcomes. In terms of the latter, the discussion will show that various combinations of interactions between work context factors and EI had different consequences for psychological outcomes.

The results also showed that the variables used in the study were related to each other. EI correlated positively with job resources, work engagement and indices of psychological well-being (satisfaction with life, positive and negative affect). Previous studies have shown that generally measures of optimal psychological functioning tend to be positively correlated and negatively correlated with pathogenic measures such as the General Health Questionnaire.

Work context factors and EI explained the highest percentages of variance in positive affect, dedication and vigour followed by satisfaction with life and lastly negative affect. Generally, the results suggest that work characteristics have meaningful implications for the optimal functioning of the individual in the workplace. The occupational psychology literature supports these findings (Heuven et al., 2006; Mikolajczak et al., 2007; Weiss & Cropanzano, 1996). The consequence for this relationship is captured by the Affective Events Theory postulated by Weiss and Cropanzano (1996) which suggests that work context and its characteristics may influence the attitudes and behaviours of staff in the workplace.

Negative affect was significantly predicted by the interaction terms between growth opportunities and EI, advancement and EI, and overload and EI. The interplay between an essentially intrinsic work characteristic (growth opportunities) and extrinsic factors such as (advancement and overload) in their interaction with EI is important to the extent that the individual is able to interpret their work environment dynamics. Rothmann and Jordaan (2006) have argued for example that growth opportunities represent an important influence on the psychological meaningfulness attributed to jobs. The experience of overload has been implicated in burnout (see Demerouti et al., 2001). The motivational aspects of the two job resources (growth opportunities and advancement) and the job demand characteristic (overload) and their relationship with negative affect under conditions of EI in this study, is theoretically consistent with the JD-R model. Job resources are known to stimulate personal growth whereas job demands deplete the individual's energy. Thus, low levels of job resources and high levels of job demands have been shown to interact with EI and influence the level of negative affect.

Work engagement (dedication) was significantly predicted by the interaction term between two dimensions of job resources (growth opportunities and advancement) and

EI. Growth opportunities suggest that employees have sufficient variety in their work and can intrinsically identify opportunities to learn and have independence in the job whereas advancement may suggest that employees extrinsically can perceive opportunities of earning a better salary for example. Firstly, the findings confirm the underpinnings of the JD-R model in terms of the main effects for work context factors and psychological outcomes. Secondly, the findings also show that personal resources such as EI play an important role in the relationship between work context factors and psychological outcomes. Specifically, the present study adds to this knowledge by showing that when job resources interact with EI, they also predict dedication. Dedication is characterised as an individual's enthusiasm with their work as experienced through their inspiration, pride and the challenge in the workplace. Previous studies have shown that motivated employees are productive and less likely to seek employment elsewhere (Clarke, 2009) and that personal resources, of which EI is an example, significantly explain variance in work engagement.

Limitations of the Study. This study implemented a cross-sectional survey design with its attendant methods of data analyses. Therefore, insights based on the findings can be understood in a statistical sense only. A longitudinal research design could shed light on questions of causality. Nevertheless, the results of the study help illuminate the link of EI with positive psychological outcomes in the work context of public sector employees.

Recommendations for utilizing EI at the workplace. EI is of potential value, especially in the public sector that is focussed on optimal service delivery, and where emotional encounters are stock-in-trade. Thus, work-based programmes for enhancing EI could go a long way in assisting employees to deal with the challenges of the workplace and to experience positive psychological outcomes (including positive affect, life satisfaction, dedication, and vigour). In-house and out-sourced employee wellness programmes could go a long way in promoting health through advocacy and various campaigns. However, individuals should be willing to change and should realise the importance of such training for the cultivation of EI in the workplace.

Conclusion

Overall the findings of this study suggest that EI is a valuable personal resource to cultivate for establishing, developing, and maintaining positive outcomes in psychological well-being in the workplace. To this extent, Day et al. (2005) conclude that emotions are fairly important because they help determine how individuals may act and react to certain situations. Individuals high in EI may be able to maximise the influence of positive situations (Schutte et al., 2002) such as identifying job resources with a possible upward spiralling general well-being and peak performance in the workplace. The findings suggest that levels of EI have different consequences for psychological well-being depending on the prevailing work context conditions. Therefore it can be concluded that the presence of job resources without a cultivated EI may not in itself lead to positive psychological outcomes.

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Table 1: Descriptive statistics of the EIS, SWALS, AFM, UWES, and JD-R scales

Variable	Minimum	Maximum	Mean	*SD*	A
Emotional Intelligence	29.00	144.00	107.77	15.19	0.92
Satisfaction with Life	5.00	35.00	22.48	5.95	0.79
Positive Affect	10.00	50.00	36.04	6.45	0.81
Negative Affect	10.00	50.00	23.96	7.30	0.82
Vigour	0.00	30.00	21.71	5.82	0.68
Dedication	0.00	30.00	22.76	6.55	0.81
Overload	9.00	32.00	22.31	3.83	0.70
Insecurity	3.00	12.00	8.29	2.70	0.80
Organisational Support	14.00	56.00	37.12	8.26	0.87
Growth Opportunities	19.00	56.00	41.61	7.44	0.84
Advancement	5.00	20.00	9.52	4.02	0.85

Note: EIS – Emotional Intelligence Scale; SWLS – Satisfaction with Life Scale; AFM – Affectometer; UWES – Utrecht Work Engagement Scale; and JDR – Job Demands-Resources Scale

Table 2: Intercorrelations of the EIS, SWLS, AFM, UWES, and JD-R scales

Variable	1	2	3	4	5	6	7	8	9	10
1. Emotional Intelligence	-	-	-	-	-	-	-	-	-	-
2. Satisfaction with Life	0.39**+	-	-	-	-	-	-	-	-	-
3. Positive Affect	0.58**++	0.48**+	-	-	-	-	-	-	-	-
4. Negative Affect	-0.21**	-0.27**	-0.37**+	-	-	-	-	-	-	-
5. Vigour	0.32**+	0.12*	0.31**+	-0.14**	-	-	-	-	-	-
6. Dedication	0.35**+	0.18**	0.41**+	-0.24**	0.72**++	-	-	-	-	-
7. Overload	0.18**	-0.05	-0.04	0.11*	0.05	-0.04	-	-	-	-
8. Insecurity	0.06	-0.12**	-0.04	0.22**	0.27**	0.22**	0.15**	-	-	-
9. Organisational Support	0.14**	0.14**	0.20**	-0.03	0.33**+	0.34**+	-0.07	0.12**	-	-
10. Growth Opportunities	0.24**	0.08	0.23**	-0.06	0.48**+	0.51**++	0.12*	0.25**	0.56**++	-
11. Advancement	-0.08	0.02	-0.01	0.18**	0.15**	0.15**	-0.02	0.22**	0.41**+	0.29**

* Correlation is statistically significant at $p < 0.05$ (2-tailed)
** Correlation is statistically significant at $p < 0.01$ (2-tailed)
+ Correlation is practically significant (medium effect): $r > 0.30$
++ Correlation is practically significant (large effect): $r > 0.50$

Note: EIS – Emotional Intelligence Scale; SWLS – Satisfaction with Life Scale; AFM – Affectometer; UWES – Utrecht Work Engagement Scale; and JDR – Job Demands-Resources Scale

Table 3: Interaction of Job Demands, Job Resources and Emotional Intelligence on PWB

	Positive Affect				Negative Affect				Satisfaction with Life			
Variable	*F*	*B*	*SE*	ΔR^2	*B*	*SE*	*F*	ΔR^2	*F*	*B*	*SE*	ΔR^2
Step 1	32.59*			0.38*			7.62*	0.12*	13.94*			0.21*
Overload		-0.28	0.08		0.28	0.11				-0.18*	0.08	
Job Insecurity		-0.24	0.12		0.59	0.15				-0.29*	0.12	
Growth Opportunities		0.12	0.05		-0.14	0.07				0.04	0.05	
Organisational Support		0.05	0.05		-0.03	0.06				0.06	0.05	
Advancement		-0.02	0.09		0.30	0.11				0.12	0.09	
Emotional Intelligence		0.24	0.02		-0.06	0.03				0.15	0.02	
Step 2	18.09*			0.01			5.43*	0.04*	9.04*			0.03*
Overload × Emotional Intelligence		0.00	0.01		0.01	0.01				-0.07	0.22	
Job Insecurity × Emotional Intelligence		0.01	0.01		-0.01	0.01				0.02	0.01	
Growth Opportunities × Emotional Intelligence		-0.01	0.00		0.00	0.01				0.01	0.01	
Organisational Support × Emotional Intelligence		0.00	0.00		-0.01	0.00				0.00	0.00	
Advancement × Emotional Intelligence		-0.00	0.01		0.00	0.01				0.00	0.00	

* $p < 0.05$

Table 4: Interaction of Job Demands, Job Resources and Emotional Intelligence on Work Engagement

Variable	*F*	B	SE	ΔR^2	*F*	B	SE	ΔR^2
Step 1	25.75*			0.32*	31.33*			0.36*
Overload		0.02	0.07			-0.21*	0.08	
Job Insecurity		0.24*	0.10			0.24*	0.11	
Growth Opportunities		0.27*	0.04			0.38*	0.05	
Organisational Support		0.06	0.04			0.07	0.04	
Advancement		-0.04	0.08			-0.10	0.08	
Emotional Intelligence (EI)		0.10*	0.02			0.10*	0.02	
Step 2	14.59*			0.00	18.51*			0.03*
Overload × Emotional Intelligence		-0.00	0.01			0.00	0.01	
Job Insecurity × Emotional Intelligence		-0.01	0.01			0.00	0.01	
Growth Opportunities × Emotional Intelligence		0.00	0.00			-0.01*	0.00	
Organisational Support × Emotional Intelligence		-0.00	0.00			0.00	0.00	
Advancement × Emotional Intelligence		0.00	0.01			0.01*	0.01	

$*p < 0.05$

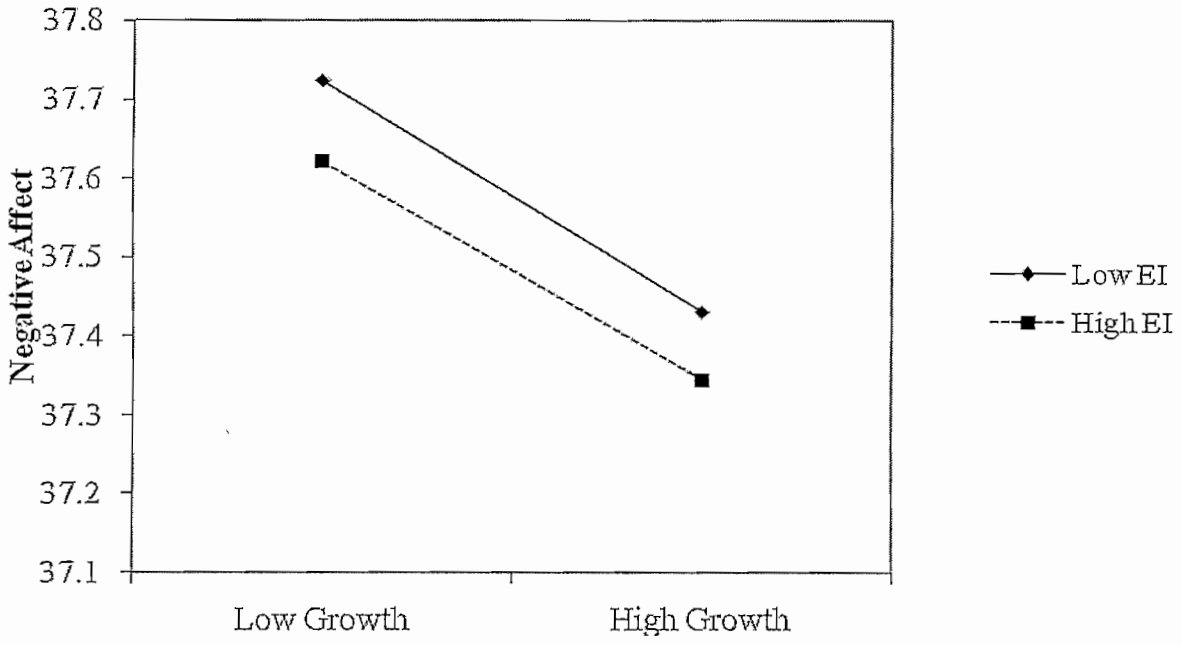

Figure 1: Regression analysis of Growth Opportunities on Negative Affect at two levels of emotional intelligence

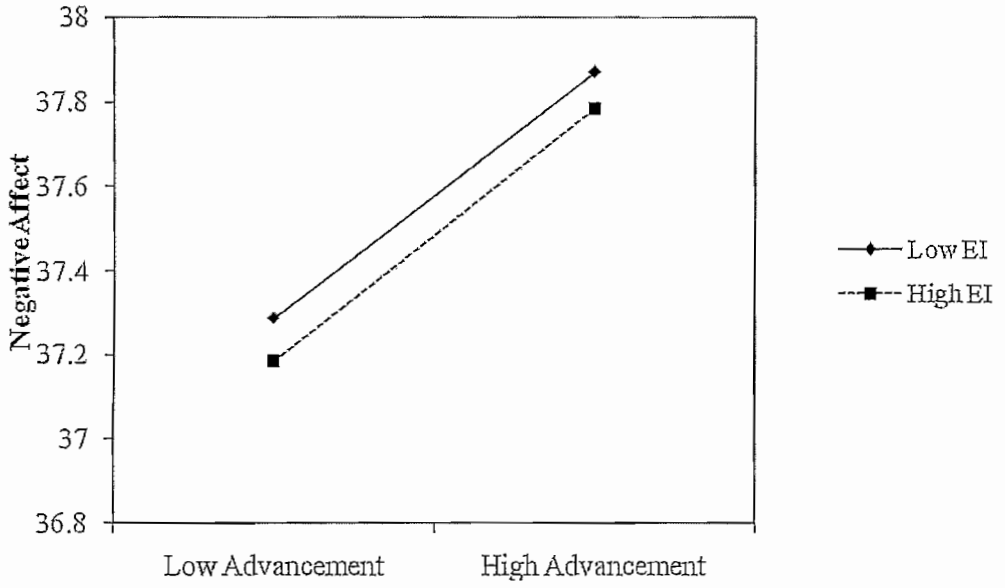

Figure 2: Regression analysis of Advancement on Negative Affect at two levels of emotional intelligence

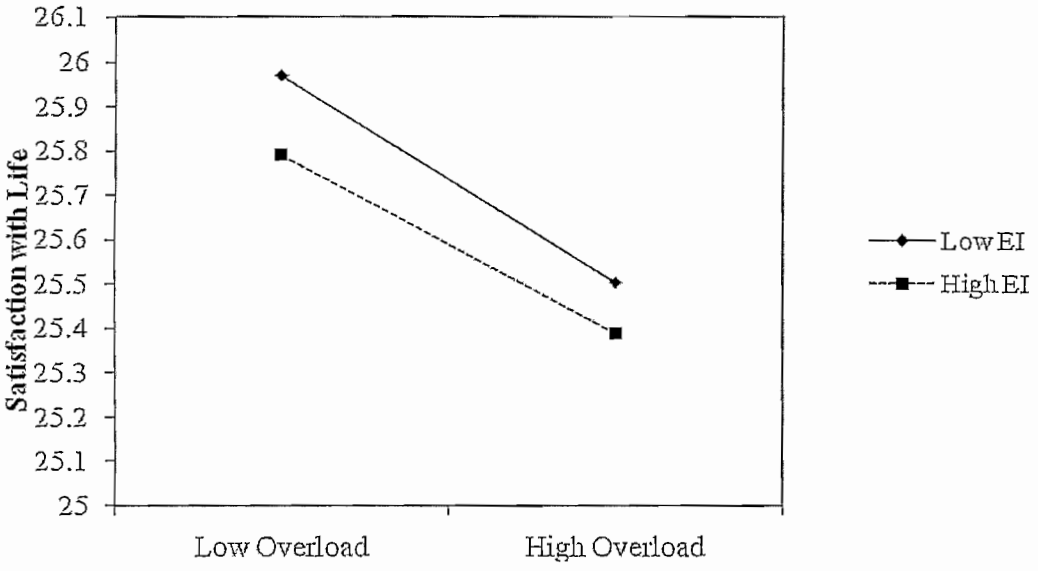

Figure 3: Regression analysis of Overload on Satisfaction with Life at two levels of emotional intelligence

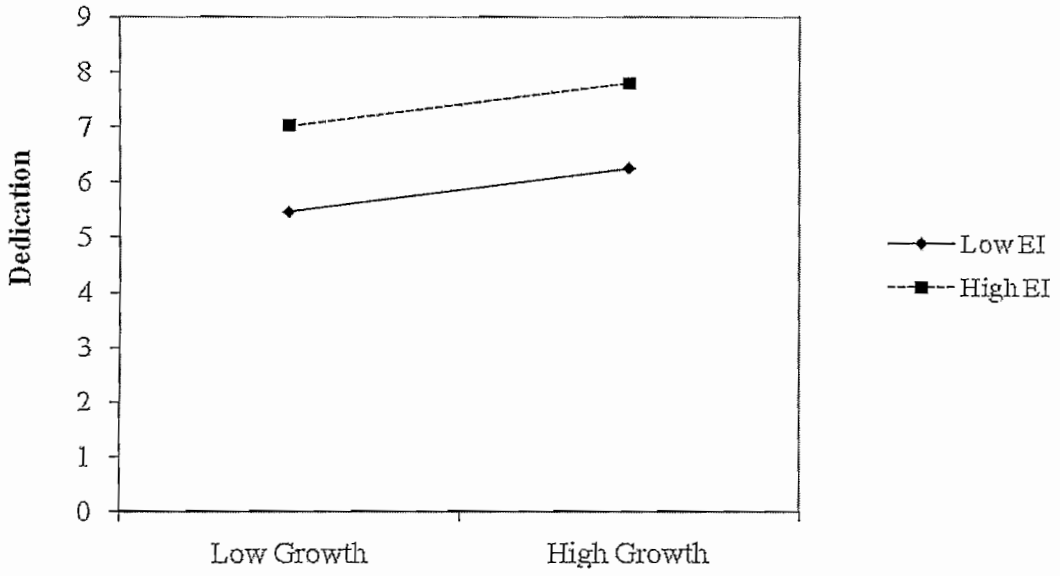

Figure 4: Regression analysis of Growth Opportunities on Dedication at two levels of emotional intelligence

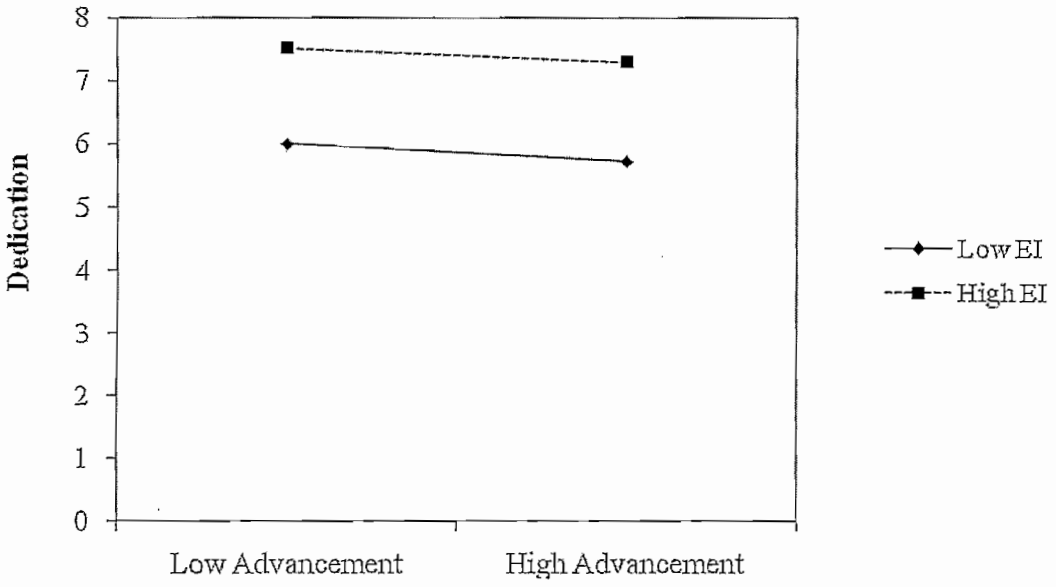

Figure 5: Regression analysis of Advancement on Dedication at two levels of emotional intelligence

Section 3: Article 2

Self-efficacy, Work, and Psychological Outcomes in a Public Service Context

Submitted to the

Journal of Psychology in Africa

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Appoh, L. (1995). *The effects of parental attitudes, beliefs and values on the nutritional status of their children in two communitiesin Ghana*. Unpublished masters dissertation, University of Trondheim, Norway
Peltzer, K. (2001). Factors at follow-up associated with adherence with directly observed therapy (DOT) for tuberculosis patients in South Africa. *Journal of Psychology in Africa*, 11, 165-185.
Sternberg, R. J. (2001, June). *Cultural approaches to intellectualand social competencies*. Paper presented at the Annual Convention of the American Psychological Society, Toronto, Canada.
Cook, D. A., & Wiley, C. Y. (2000). Psychotherapy with members of the African American churches and spiritual traditions. In P. S. Richards & A. E. Bergin (Ed.), *Handbook of psychotherapy and religiosity diversity* (pp. 369-396). Washington DC: American Psychological Association.
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3.2 Manuscript

Self-efficacy, Work, and Psychological Outcomes in a Public Service Context

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Abstract

The present study sought to examine the prediction of psychological outcomes (conceptualized as psychological well-being and engagement) by general self-efficacy (GSE) and work context (conceptualized as job demands and job resources). The interactive effects of GSE and work context in predicting psychological outcomes were also examined as an indication of moderation in a cross-sectional survey of a sample of public sector employees (N = 459). Multiple regression analyses showed that job demands and resources and GSE significantly predict both psychological well-being (positive affect, negative affect and satisfaction with life) and engagement (vigour and dedication). GSE moderated the relationship between work context and psychological outcomes. It was concluded that work contexts characterised by a preponderance of job resources may facilitate both satisfaction with life and dedication.

Keywords: Self-efficacy; job demands; job resources; engagement; psychological well-being; public service context

(Number of words in abstract = 125)

Introduction

This study examines the possible role of general self-efficacy (GSE), as a personal resource, in the relationship between work context (conceptualised as job demands and job resources) and psychological outcomes (conceptualised as psychological well-being and work engagement). Some recent studies (Schwarzer & Hallum, 2008; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007) have used the conceptualisation of general self-efficacy as a broad and stable sense of personal competence and refer to it generically as self-efficacy (SE) and this approach is also used in this study. Stetz, Stetz, and Bliese (2006) think of SE as personal moderator and suggest that much less attention has been devoted to the effects of such moderators on the stressor-strain relationship as typical of many work contexts. Siu, Lu, and Spector (2007) surmise that SE is capable of influencing the relationship between antecedents and outcomes and should be given more attention as it can affect an individual's ability to exercise control over a situation.

Previous research has shown that when self-perceptions such as SE are positive, the experience of negative work conditions is less detrimental (Perrewé et al., 2002) especially in prototypically individualist work contexts (Nauta, Liu, & Li, 2008). Few studies have considered the role of SE in the occupational stress process (Grau, Salanova, & Peiró, 2001) especially in a typically non-western and non-individualist context. Although it has been indicated that SE may buffer against stress regardless of cultural context (Nauta et al., 2008), its role in the relationship between work context and psychological outcomes has not been explored such as in the present study. This study examines main effects of SE and work context on psychological outcomes and the possible interactive effects between SE and work context in predicting psychological outcomes.

Role of SE in occupational stress. Previous research as cited by Stetz et al. (2006) suggest that successful coping with the demands of the workplace on employees seems to depend on the relationship between coping methods, the nature of the stressor, and beliefs about one's capabilities to meet situational demands and successfully carry out a given course of action. It is typically in the case of the latter about personal beliefs of capacity that the present study is done. Karademas (2007) and Perrewé et al. (2002) also reviewed literature which showed that when levels of SE were high people used more problem-centred coping than people with low SE. Schwarzer, Boehmer, Luszczynska, Nihal, Mohamed, and Knoll (2005) argue that SE contributes to the judgment concerning the extent to which the individual could control the outcome of a situation which in turn influences the coping strategies adopted as a response to the situation.

Jerusalem and Schwarzer (1992) proposed that individuals with low general SE are prone to self-doubts, threat appraisals, and perceptions of coping deficiencies when confronted with high work demands. According to Siu et al. (2007) those high in SE are more likely to believe that they can maintain high levels of job performance despite the presence of challenging job-related stressors. Perrewé et al. (2002) cite evidence to show that SE plays a role in improving employees' response to change, accepting negative feedback and persisting longer on tasks even in the face of adversity. In this study SE is conceptualized in line with the formulation by Schwarzer and Jerusalem (1993) as an individual's capability to handle new and difficult tasks in a variety of different domains. Consequently, this study explores the role of SE in the relationship between work context and psychological outcomes.

Various research findings have presented some mechanisms such as self-regulation, through which SE may help individuals to cope with stressful situations. For example, it has been shown that high SE is related to the regulation of the stress process, to higher self-esteem, better well-being, better physical condition, optimal adaptation to and recovery from acute and chronic diseases (Bisschop, Knegsman, Beekman, & Deeg, 2004) whereas low SE is related to symptoms of anxiety and depression (Karademas, 2007). SE as a self-referent process allows people to function as self-regulating agents who actively negotiate with the social world and thus exert extended control over personal experiences (Luszczynska, Gutiérrez-Dona, & Schwarzer, 2005). Research has indicated that efficacy expectations may also influence the amount of effort people will expend on and how long they will persist in the face of obstacles and failure (Smith, Kass, Rotunda, & Schneider, 2006). It can be surmised that SE may work as an incentive to undertake various tasks or to persevere when difficulties or failure become probable. As indicated, in this article the focus is more broadly on Generalized Self-efficacy (GSE) which examines individuals' beliefs in their ability to be successful in a wide variety of situations (Xanthopoulou et al., 2007). More importantly, in this study the influence of work context factors (as presented in the Job Demands-Resources model) on psychological outcomes, especially through SE, is important.

Job characteristics and psychological outcomes. The Job Demands-Resources model (JD-R: Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) classify work characteristics as comprising of job demands and job resources. Dual interactive and psychological processes may be the outcomes of these job characteristics, namely, a form of health impairment indicating burnout or a motivational process characterised by positive affect known as work engagement (Bakker, Demerouti, De Boer, & Schaufeli, 2003; Bakker & Demerouti, 2007; Demerouti et al., 2001). Only

the latter receives attention as the focus of this study is on positive attributes of human functioning as conceptualised in Psychofortology (the study of human strengths).

The initial conceptualization of the JD-R model may help clarify the foregoing. Demerouti et al. (2001) explain that high job demands may exhaust an employee's mental and physical resources and thus lead to the depletion of energy and subsequently to health problems. Job resources on the other hand induce a motivational process through the reduction of job demands and the associated physiological and psychological costs. Bakker and Geurts (2004) also note that job demands and job resources are differentially related to job related outcomes. In this study, psychological well-being and work engagement receive attention as possible psychological outcomes of the job characteristics.

Recently Xanthopoulou et al. (2007) expanded the JD-R to include personal resources such as SE, organisational-based self-esteem, and optimism. SE is conceptualised as one of several personal resources and personal resources can play either a moderating or mediating role between work context and psychological outcomes (Xanthopoulou et al., 2007). Prieto, Soria, Martinez, and Schaufeli (2008) regard personal resources as part of the self that are linked to resilience. Personal resources can also be seen as impacting on the individual's ability to control and be successful in their environment (Prieto et al., 2008). Based on this conceptualization of personal resources, it is possible to hypothesise that SE may alter the relationship between work context factors and psychological outcomes as it is suggested in the literature that SE helps individuals to cope in various situations. It is thus expected that the interaction between work context factors and SE will differentially influence psychological outcomes.

Psychological outcomes of employees are represented by a broad body of research measuring the continuum of burnout to engagement (Maslach, Schaufeli, & Leiter, 2001) psychological well-being (Weiss & Cropanzano, 1996), cognitive attitudes, and personality traits in the workplace (Youssef & Luthans, 2007) as a result of pertinent job characteristics. The Affective Events Theory by Weiss and Cropanzano (1996) proposes that cumulative affective experiences in the work environment shape employees' attitudes in the workplace. Two psychological outcomes (psychological well-being and work engagement) were evaluated in this study using a model not previously applied in a study on the South African public service.

Psychological well-being as conceptualized in this study comprises of both cognitive and affective elements in line with suggestions by Myers, Luecht, and Sweeney (2004) and also Wissing and Van Eeden (2002). Consequently, in this study psychological well-being is measured in terms of both positive and negative affect (Kammann & Flett, 1983) and satisfaction with life (Diener, Emmons, Larsen, & Griffin, 1985). Although in this study psychological well-being would be

influenced by job characteristics, it is hypothesised that personal resources such as SE would influence this relationship. Evidence exists to show that self-rated happy and unhappy people differ systematically in the particular cognitive and motivational strategies they use and that these strategies moderate the impact of the objective environment on well-being (Lyubomirsky, 2001).

Work engagement is conceptualised in this current study in terms of vigour, dedication and absorption (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002) and is defined as positive, fulfilling, work-related state of mind. A later study by Prieto et al. (2008), however, perceived vigour and dedication as being the core of engagement. Although it is possible that alternative views on the composition of engagement may be proposed by other researchers, in this study only vigour and dedication will be used in the conceptualization of work engagement. Previous research has shown that work engagement arises from an employee's involvement with their tasks, being alert and emotionally connected to others in their work situation (Olivier & Rothmann, 2007). It is expected that a psychological outcome such as work engagement would be influenced not only by work characteristics but also by personal resources such as SE.

Goals of the Study. The review of the literature shows firstly that a high level of SE as a form of self-perception plays a protective and buffering role in adverse conditions such as in the work context and may potentially lead to various psychological outcomes for employees including well-being and work engagement. Secondly, it has also been shown that work context has an influence on psychological outcomes but that these outcomes depend on how the individual interprets the demands placed on them by these work contexts. Thirdly, the literature shows that based on the type of occupational stress experienced, SE may moderate the relationship between aspects of work context and some psychological outcomes. Therefore consistent with theorising in Social Cognitive Theory, it is expected that people with high levels of SE will be more confident of their abilities to respond to job demands and job resources as their level of SE will influence the way they perceive and process environmental demands and threats. Based on the foregoing, it is hypothesised that:

i) work context factors and SE will significantly influence psychological outcomes.

ii) the interaction between work context factors and SE differentially influence psychological outcomes.

Method

Design and participants. This research utilized a cross-sectional survey design. A convenience sample of 459 participants was drawn from North West Provincial Government Employees with the qualifications of Matric (Standard 10/Grade 12) and above. Females comprised 59.5% of the sample while men made up 32.9%. With respect to age 56.7% of the sample participants fell into the categories 25-44, while 5.9% fell into the 18-24 age group, while ages 45-55 made up 31.8% of the sample. In terms of education, 35.9% of the sample had Matric, while 36.2% had a diploma or a Bachelor's degree or diploma and 12.9% had a postgraduate degree. Operational employees comprised 42.9% of the sample while 50.7% listed management (Assistant Director through to Director Level) as their employment category. Owing to missing data in some of the categories, the percentages may not add to 100%.

Instruments. Demographic information such as age, gender, marital status and turnover intention was sourced using a demographic questionnaire compiled by the first author.

The *Generalized Self-Efficacy Scale* (GSE) (Schwarzer & Jerusalem, 1993) is a 10-item scale developed to measure the general sense of optimistic self-belief with the aim in mind to predict coping with the adversity of daily hassles as well as coping with any setbacks from such hassles. Responses were reported on a four-point scale ranging from 1 (*not at all true*) to 4 (*exactly true*). Schwarzer and Jerusalem (1993) reported Cronbach alphas between 0.82 and 0.93. Research on the scale indicates that it has only one global dimension (Scholz, Gutiérez-Doña, Sud, & Schwarzer, 2002).

The *Job Demands-Resources Scale* (JD-R) (Rothmann, Mostert, & Strydom, 2006) consists of 48 items and the dimensions were measured on a scale from 1 (*never*) to 4 (*always*). The following dimensions are assessed by this scale viz,: contact and career possibilities, remuneration, amount of work and mental load, pace and emotional load, variety and independence in work, opportunities to learn, relationship with colleagues and supervisor, work ambiguities, information and participation. The factors are Job Demands (Overload and Job Insecurity) and Job Resources (Growth Opportunities, Organisational Support and Advancement). The scale is reliable and valid for the South African context (Jackson, Rothmann, & Van de Vijver, 2006; Rothmann et al., 2006).

The *Utrecht Work Engagement Scale (UWES)* (Schaufeli et al., 2002) consists of 17 items and it measures levels of engagement. Vigour, Dedication and Absorption are the three dimensions of the scale. For this study only the dimensions of Vigour and Dedication were used. The scale measures frequency of occurrence and the response range is from 0 (*never*) to 6 (*daily*). Confirmatory analysis was used to demonstrate factorial validity (Naudé, 2003, Rothmann & Storm, 2003) of the scale. Internal reliabilities for Vigour (0.71), Dedication (0.81), and Absorption (0.57) were reported.

The *Satisfaction with Life Scale* (SWLS) (Diener et al., 1985) consists of 5 items which provide a measure of an individual's overall satisfaction with life. A person using his / her own criteria to evaluate his / her quality of life does it on a cognitive-judgemental level. The scale ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The Cronbach alpha-reliability index was 0.87 while the two month test-retest reliability index is 0.82 (Diener et al., 1985). Pavot and Diener (1993, 2008) also indicate the scales good psychometric characteristics. The SWLS is reliable and valid for use in an African context (Wissing et al., 1999; Wissing, Wissing, Du Toit, & Temane, 2008).

The *Affectometer-2 Short-form* (AFM) (Kammann & Flett, 1983) measures general happiness or a general sense of well-being. According to Kammann and Flett (1983), the balance between negative and positive affect indicates the degree of psychological well-being on an affective level. The AFM consists of a 20-adjective item scale and a 20-sentence item scale – these two parts are equivalent. The scale ranges from 1 (*not at all)* to 5 (*all the time)*. For the current study the 20-sentence item scale was used. The questionnaire consists of two subscales with 10 items measuring Positive Affect and 10 items measuring Negative Affect. The higher the overall well-being, the more positive affect dominates over negative affect (Kammann & Flett, 1983). The scale is reliable and valid for use in an African context (Wissing et al., 1999; Wissing, Wissing, Du Toit, & Temane, 2008) and the Cronbach alpha-reliability indices range between 0.88 to 0.93.

Procedure. Permission was firstly solicited from the Director General of the North West Province (NWP) to conduct the study amongst North West Provincial Government (NWPG) employees. Once permission for the study had been granted, Employee Assistance Programme (EAP) coordinators were approached by the first author through the Provincial EAP Forum. Thereafter EAP coordinators received training in questionnaire administration as well as ethical considerations of the data collection. The EAP coordinators then were responsible for overseeing that participants in the respective Departments completed the questionnaires. Employees identified for the sample

needed to have at least a matriculation certificate. As part of the ethical considerations, the participants were required to give their informed consent by completing and signing a return slip. The first author contacted EAP coordinators monthly to remind them to request participants to complete and submit the questionnaires. The study followed all ethical guidelines prescribed when using human subjects in research. The Ethics Committee of the North-West University, Potchefstroom Campus granted approval (05K10) for conducting this study. Once the data had been collected, it was cleaned and analysed.

Statistical analysis. Data analyses were conducted with the SPSS (ver. 16.0) program (SPSS, 2007). Appropriate descriptive statistics such as means and standard deviations, correlations (and associated effect sizes), and internal consistencies were used to explore data. The reliability indices (as well as all the other indices referred to) of all measures used in this study are reported in Tables 1and 2. In terms of the effect sizes of the correlations, guidelines set by Cohen (1988) were followed. Practical significance of the correlations is reported in line with Field's (2005) recommendations. A correlation of $r = 0.10$ indicates a small effect, while a correlation of $r = 0.30$ and $r = 0.50$ indicate a medium and large effect respectively.

Regression analyses were used for two purposes in this study. Firstly, multiple regression analyses were calculated to test the main effects of work context variables (namely, job demands and job resources) as predictors of psychological outcomes (psychological well-being and work engagement) as criterion or dependent variables. The coefficient of determination (R^2) is primarily reported as an indication of the amount of variance explained by the predictor variables in the criterion variables. As the predictor variables are comprised of various dimensions, the significant contribution made by the dimensions is highlighted by referring to associated student t-values and standardised coefficients.

Secondly, hierarchical regression analyses were used to test whether self-efficacy moderated between work context variables and psychological outcomes. Moderation is important in explaining and testing the interactive effects of two or more variables in predicting a dependent variable (Dawson & Richter, 2006) while controlling for associated main effects (Preacher, Curran, & Bauer, 2006). Hierarchical regression analyses with backward deletion of independent variables not significantly contributing to an equation were computed. In the first step all predictor variables in their interval form (i.e., all dimensions of job demands and job resources on the one hand and self-efficacy on the other hand), followed by their interactions in the second step. Prior to the second step all predictor variables were centred to obtain their deviation as to obviate any multicollinearity (Brambor, Clark, & Golden, 2005).

There are arguments for the value of this procedure which are beyond the scope of this study (see Aiken & West, 1991; Brambor et al., 2005; Preacher, Rucker, & Hayes, 2007). A significant interaction term indicates that the effect of work context on either psychological well-being or work engagement differs across the levels of general self-efficacy. Usually a graph can be drawn to examine the direction of an interaction, referred to by Field (2005) as a simple effects analysis. Field (2005) indicates that a significant interaction is shown by non-parallel lines on an interaction graph, however he cautions that even though the lines may cross, this may not indicate a significant interaction.

Results

Descriptive statistics. Tables 1 and 2 present the means, standard deviations, internal consistency (Cronbach alpha) and intercorrelations among all study variables used in the study. Cronbach alphas meet the criterion of 0.70 as set by Nunnally and Bernstein (1994) except for Vigour which is however close to this criterion.

(Insert Table 1 here)

Inspection of Table 2 indicates that Self-efficacy is practically significantly positively related to Satisfaction with Life and Positive Affect (both large effect), and Dedication (medium effect). Satisfaction with Life is practically significantly positively related to Positive Affect (medium effect). Positive Affect is practically significantly positively related to Negative Affect, Vigour and Dedication (all three of them medium effects). Vigour is practically significantly positively related to Dedication (large effect), Organisational Support and Growth Opportunities (last two both medium effects). Dedication is practically significantly positively related to Growth Opportunities (large effect). Organisational Support is significantly positively related to Growth Opportunities (large effect) and Advancement (medium effect).

(Insert Table 2 here)

Influence of work context and GSE on psychological outcomes. Multiple regression analyses were conducted to test the degree of influence of work context factors and GSE on psychological well-

being (including Satisfaction with Life, Positive Affect, Negative Affect) and Work Engagement as dependent variables.

Job demands, job resources and self-efficacy significantly predicted Satisfaction with Life, F (6,452) = 30.76, $p < 0.01$, $R^2 = 0.29$. Three variables made a statistically significant contribution to the regression model: Job Insecurity, $\beta = -0.13$, $t = -3.13$, $p < 0.01$, Advancement, $\beta = 0.10$, $t = 2.13$, $p < 0.01$, and Self-efficacy, $\beta = 0.52$, $t = 12.58$, $p < 0.01$.

Job demands, job resources and self-efficacy significantly predicted Positive Affect, F (6,452) = 45.84, $p < 0.01$, $R^2 = 0.44$. Three variables made a statistically significant contribution to the regression model: Overload, $\beta = -0.08$, $t = -2.22$, $p < 0.03$, Growth Opportunities, $\beta = 0.13$, $t = 2.84$, $p < 0.01$, and Self-efficacy, $\beta = 0.63$, $t = 17.02$, $p < 0.01$.

Job demands, job resources and self-efficacy significantly predicted Negative Affect, F (6,452) = 14.52, $p < 0.01$, $R^2 = 0.16$. Five variables made a statistically significant contribution to the regression model: Overload, $\beta = 0.11$, $t = 2.46$, $p < 0.01$, Job Insecurity, $\beta = 0.20$, $t = 4.39$, $p < 0.01$, Growth Opportunities, $\beta = -0.12$, $t = -2.22$, $p < 0.03$, Advancement, $\beta = 0.14$, $t = 2.82$, $p < 0.01$, and Self-efficacy, $\beta = -0.26$, $t = -5.69$, $p < 0.01$.

Job demands, job resources and self-efficacy significantly predicted Vigour, F (6,452) = 32.97, $p < 0.01$, $R^2 = 0.30$. Three variables made a statistically significant contribution to the regression model: Job Insecurity, $\beta = 0.17$, $t = 4.17$, $p < 0.01$, Growth Opportunity, $\beta = 0.36$, $t = 7.31$, $p < 0.01$, and Self-efficacy, $\beta = 0.22$, $t = 5.45$, $p < 0.01$.

Job demands, job resources and self-efficacy significantly predicted Dedication, F (6, 452) = 39.07, $p < 0.01$, $R^2 = 0.34$. Four variables made a statistically significant contribution to the regression model: Overload, $\beta = -0.13$, $t = -3.18$, $p < 0.01$, Job Insecurity, $\beta = 0.13$, $t = 3.23$, $p < 0.01$, Growth Opportunities, $\beta = 0.44$, $t = 9.09$, $p < 0.01$, and Self-efficacy, $\beta = 0.24$, $t = 5.94$, $p < 0.01$.

The results from the regression analysis supported the hypothesis that work context factors and SE significantly predicted psychological outcomes.

Moderation of GSE between work context and psychological outcomes. To test the *moderation* of SE (as measured by the GSE) between job resources and job demands and both psychological well-being and work engagement, hierarchical regression procedures were implemented. The products of the interaction terms of all facets of job resources (Organisational Support, Growth Opportunities, and Advancement) and job demands (Overload and Job Insecurity) and Self-Efficacy were computed. To obviate any multicollinearity from the effect of product terms, all predictor and moderator variables were centred. To test the possibility of any interaction effects, the centred predictors and moderators were entered first into the hierarchical regression equation followed by their interactions in the second step to predict facets of psychological well-being and work engagement. The results of the hierarchical regressions are reported in Tables 3 and 4.

Table 3 shows that a significant change in the coefficient of determination (ΔR^2) was yielded for the model predicting Negative Affect ($F = 8.21$, $p < 0.05$, $\Delta R^2 = 0.03$) and Satisfaction with Life ($F = 17.17$, $p < 0.05$, $\Delta R^2 = 0.05$). The unstandardised regression coefficients show that the interaction terms between Overload and GSE and Job Insecurity and GSE were significant and these were plotted as Figures 1 and 2.

(Insert Table 3 here)
(Insert Figure 1 here)
(Insert Figure 2 here)

Figure 1 shows that at low levels of GSE (compared to high levels) the relationship between low Overload and Satisfaction with Life was somewhat stronger. Figure 2 shows that at low levels of GSE (compared to high levels), Job Insecurity showed a stronger relationship with low Satisfaction with Life.

Table 4 shows that although small, the interaction effects between Growth Opportunities and GSE was significant for the model predicting Dedication. The change in the coefficient of determination (ΔR^2) for this model was however not significant. The results of the significant interaction were plotted in Figure 3.

(Insert Table 4 here)
(Insert Figure 3 here)

Figure 3 shows that at low levels of GSE (compared to high levels), Growth Opportunities was less strongly related to Dedication.

The results of the interaction effects support the hypothesis that the interaction between work context factors and SE differentially influence psychological outcomes. Figures 1-3 show that two job demands (Overload and Job Insecurity) and one job resource (Growth Opportunities) significantly interacted with SE to influence Satisfaction with Life and Dedication.

Discussion

The aim of the study was to examine the main effects of SE and work context on psychological outcomes and the possible interaction effects between SE and work context in predicting psychological outcomes. The results show that interaction terms of two dimensions of job demands and GSE significantly predicted satisfaction with life and the interaction term between one dimension of job resources and GSE significantly predicted dedication as discussed below. As indicated in the literature, SE can be considered as a personal resource that enables employees to deal with job demands (Xanthopoulou et al., 2007) and was hypothesised in this study to have a moderating effect on the relationship between work context factors and psychological outcomes.

The intercorrelations among the study variables showed that SE was positively related to measures of optimal functioning and negatively related to measures indicating non-optimal functioning. Positive affect and satisfaction with life primarily yielded large effects in these correlations whereas dedication yielded a medium effect. Previous studies have generally shown that efficacious individuals tend to experience well-being (Bisschop et al., 2004; Heuven, Bakker, Schaufeli, & Huisman, 2006; Luszczynska, Scholz, & Schwarzer, 2005) and are more engaged with their tasks (Heuven et al., 2006; Siu et al., 2007).

Overall, the results of multiple regression analyses showed that work context factors and SE significantly predicted both the facets of psychological well-being and dimensions of work engagement. Both work context factors and SE explained the biggest percentage of variance in positive affect compared to other criterion variables, followed by dedication, vigour, satisfaction with life and finally negative affect. These findings underscore the importance of work context and SE beliefs for psychological outcomes of employees in this sample. The JD-R also suggests that psychological outcomes are influenced by job characteristics (Demerouti, et al., 2001) and that personal resources play an important role in outcomes (Xanthopoulou et al., 2007).

Satisfaction with life was significantly predicted by the interaction term between one dimension of job demands (overload) and SE. The standardised regression coefficient for this interaction term comprising of overload and SE was ($\beta = 0.10$) as compared to the unstandardised coefficient ($B = 0.03$). This finding suggests that in the presence of a combination of SE with low job demands (overload), employees may experience high satisfaction with life. Luszczynska et al. (2005) argue that in line with social cognitive theory it is to be expected that SE will influence satisfaction with life among others. Ryan and Deci (2000) speak of this in terms of *competence* where if one feels efficacious, in the face of optimal challenges, the individual tends to internalise the goal and thereby grow from it. In the same way the results showed that low job insecurity was related to high levels of satisfaction with life. Dedication was associated with low levels of growth opportunities at low levels of GSE. Thus, it is reasonable to assume that as SE represents a cognitive appraisal of an external job situation, it is possible that satisfaction with life could be adversely influenced by sub-optimal conditions of work such as high overload, high job insecurity and low growth opportunities.

The findings above are consistent with the thinking by Boehm and Lyubomirsky (2008) and conceptualisations of the Job Demands-Resources model (Demerouti et al., 2001; Xanthopoulou et al., 2007). Boehm and Lyubomirsky (2008) cite evidence in their review on happiness and work success to show that employees who experience positive emotions in the workplace are not only happy but more engaged in their work as opposed to those who experience negative affect, and possibly low satisfaction with life. The opposite is of course a costly consequence for organisations where unhappy employees have been shown to withdraw from their work and are likely to suffer health impairment in the end. This thinking is quite consistent with the tenets of the Job Demands-Resources model (Demerouti et al., 2001; Xanthopoulou et al., 2007) which also argues that personal resources (such as SE) may buffer the employee against the effects of a demanding workplace. Another possibility is of course that this low satisfaction with life may spill over into other aspects of their lives. This is also true of job insecurity as shown by the results. These findings may indicate that it is important to have sufficient job resources in such a challenging work environment such as the public sector especially as it has consequences for service delivery in various government programmes.

Dedication was significantly predicted by the interaction terms between one dimension of job resources (growth opportunities) with SE. This finding may suggest that a work environment characterised by job resources may enhance employee vigour and dedication through SE. This is in line with the finding of Xanthopoulou, Bakker, Heuven, Demerouti, and Schaufeli (2008) that a

resourceful work environment may facilitate the attainment of work goals and thus activate work engagement.

Limitations of the study. A *limitation* of the present study is that self-report measures were used as the main strategy for data collection and as a result the influence of common method variance must be taken into account. Secondly, the study focussed on a sample of government employees and may thus limit the generalisations that could be made from these findings. However, the study makes a unique contribution in terms of understanding the role of SE in the relationship between work context factors and psychological outcomes.

SE beliefs facilitate actions and behaviour taken by individuals including effort expended in tasks, the persistence and perseverance of individuals in these tasks (Bandura, 1997). The sources of SE for example, mastery experience, vicarious experience, verbal and social persuasions, and emotional and physiological states (Usher & Pajares, 2008) suggest that feedback and modelling could play an important role especially in service-oriented work contexts that may need self-regulation of emotions.

Recommendations. It is recommended that future research on the moderating role of SE can include some assessment of the impact of SE training on perceived psychological outcomes as evidence on positive gain spirals (Llorens, Schaufeli, Bakker, & Salanova, 2007; Hakanen, Perhoniemi, & Toppinen-Tanner, 2008). Research on the latter indicates that work contexts with job resources lead to work engagement and work engagement leads to personal initiative. Thus, it would be important to establish whether the presence of tangible job resources within the public service could enhance personal initiative through work engagement.

Conclusion

Based on the results of the study, it can be concluded that a lack of job resources in the presence of high job demands will undermine psychological outcomes even in the presence of personal resources. The consequences for health impairment and negative outcomes cannot be over-emphasised in a situation where job demands outstrip job resources.

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Table 1: Descriptive statistics of the GSE, SWLS, AFM, UWES, and JD-R scales

	Minimum	Maximum	Mean	*SD*	α
Self-efficacy	10.00	40.00	30.68	5.60	0.88
Satisfaction with Life	5.00	35.00	22.48	5.95	0.79
Positive Affect	10.00	50.00	36.04	6.45	0.81
Negative Affect	10.00	50.00	23.96	7.30	0.82
Vigour	0.00	30.00	21.71	5.82	0.68
Dedication	0.00	30.00	22.76	6.55	0.81
Overload	9.00	32.00	22.31	3.83	0.70
Job insecurity	3.00	12.00	8.29	2.70	0.80
Organisational Support	14.00	56.00	37.12	8.26	0.87
Growth Opportunities	19.00	56.00	41.61	7.44	0.84
Advancement	5.00	20.00	9.52	4.02	0.85

Note. GSE – General Self-efficacy Scale; SWLS – Satisfaction with Life Scale; AFM – Affectometer; UWES – Utrecht Work Engagement Scale; and JDR – Job Demands-Resources Scale

Table 2: Intercorrelations of the GSE, SWLS, AFM, UWES, and JD-R scales

		1	2	3	4	5	6	7	8	9	10
1.	Self-efficacy	-	-	-	-	-	-	-	-	-	-
2.	Satisfaction with Life	0.51**++	-	-	-	-	-	-	-	-	-
3.	Positive Affect	0.64**++	0.48**+	-	-	-	-	-	-	-	-
4.	Negative Affect	-0.29**	-0.27**	-0.37**+	-	-	-	-	-	-	-
5.	Vigour	0.29**	0.12*	0.31**+	-0.14**	-	-	-	-	-	-
6.	Dedication	0.31**+	0.18**	0.41**+	-0.24**	0.72**++	-	-	-	-	-
7.	Overload	0.06	-0.05	-0.04	0.11*	0.05	-0.04	-	-	-	-
8.	Job insecurity	-0.01	-0.12**	-0.04	0.22**	0.27**	0.22**	0.15**	-	-	-
9.	Organisational Support	0.15**	0.14**	0.20**	-0.03	0.33**+	0.34**+	-0.07	0.12**	-	-
10.	Growth Opportunities	0.17**	0.08	0.23**	-0.06	0.48**+	0.51**++	0.12*	0.25**	0.56**++	-
11.	Advancement	-0.13**	0.02	-0.01	0.18**	0.15**	0.15**	-0.02	0.22**	0.41**+	0.29**

* Correlation is statistically significant at $p < 0.05$ (2-tailed)

** Correlation is statistically significant at $p < 0.01$ (2-tailed)

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

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

Note. GSE – General Self-efficacy Scale; SWLS – Satisfaction with Life Scale; AFM – Affectometer; UWES – Utrecht Work Engagement Scale; and JDR – Job Demands-Resources Scale

Table 3
Interaction of Job Demands, Job Resources and Generalised Self-efficacy on Psychological Well-being

Independent Variable	Positive Affect				Negative Affect				Satisfaction with Life Scale			
	B	*SE*	ΔR^2	*F*	*B*	*SE*	ΔR^2	*F*	*B*	*SE*	ΔR^2	*F*
Step 1			0.46*	52.88*		0.19*	0.17*	11.49*			0.29*	26.01
Overload	-0.15*	0.07			0.28	0.10			-0.10	0.07		
Job Insecurity	-0.15	0.10			0.58	0.14			-0.29	0.10*		
Growth Opportunities	0.12*	0.04			-0.15	0.06			-0.01	0.04		
Organisational Support	0.02	0.04			0.02	0.06			0.03	0.04		
Advancement	0.09	0.07			0.25	0.10			0.19	0.08*		
GSE	0.74*	0.05			-0.33	0.07			0.55	0.05*		
Step 2			0.00	29.30*			0.03*	8.21*			0.05*	17.17*
Overload × GSE	0.01	0.01			0.02	0.02			0.03*	0.01		
Job Insecurity × GSE	0.01	0.02			-0.02	0.03			0.05*	0.02		
Growth Opportunities × GSE	-0.01	0.01			0.01	0.01			0.01	0.01		
Organisational Support × GSE	-0.00	0.01			-0.02	0.01			-0.01	0.01		
Advancement × GSE	0.02	0.01			-0.02	0.02			0.00	0.01		

* $p < 0.05$

Table 4
Interaction of Job Demands, Job Resources and Generalised Self-efficacy on Work Engagement

Independent Variable	Vigour				Dedication			
	B	*SE*	ΔR^2	*F*	*B*	*SE*	ΔR^2	*F*
Step 1			0.31*	28.62*			0.36*	34.72*
Overload	0.01	0.07			-0.19*	0.07		
Job Insecurity	0.28*	0.09			0.26*	0.10		
Growth Opportunities	0.29*	0.04			0.39*	0.05		
Organisational Support	0.02	0.04			0.01	0.04		
Advancement	0.03	0.07			0.03	0.08		
GSE	0.26*	0.04			0.29*	0.05		
Step 2			0.00	16.11*			0.01	20.22*
Overload × GSE	-0.00	0.01			-0.01	0.01		
Job Insecurity × GSE	-0.02	0.02			0.00	0.02		
Growth Opportunities × GSE	-0.01	0.01			-0.02*	0.01		
Organisational Support × GSE	0.00	0.01			0.01	0.01		
Advancement × GSE	0.01	0.01			0.02	0.01		

* $p < 0.05$

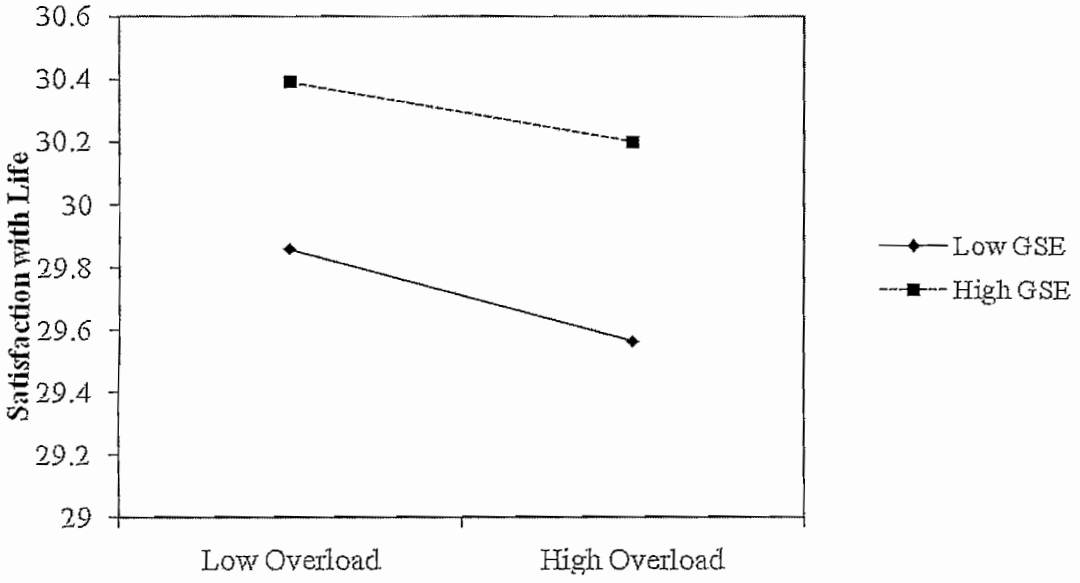

Figure 1: Interaction effect of GSE and Overload on Satisfaction with Life

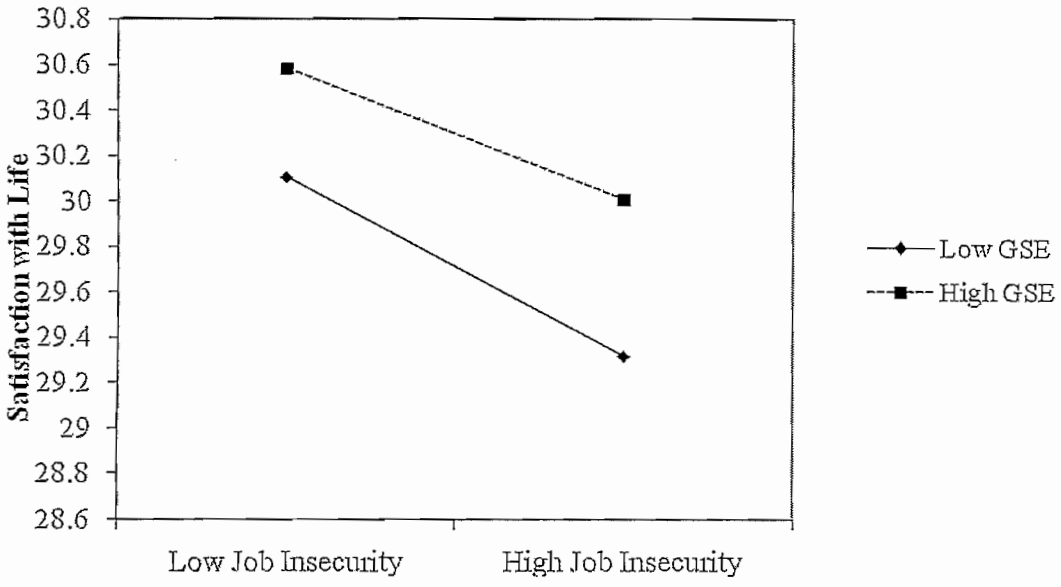

Figure 2: Interaction effect of GSE and Job Insecurity on Satisfaction with Life

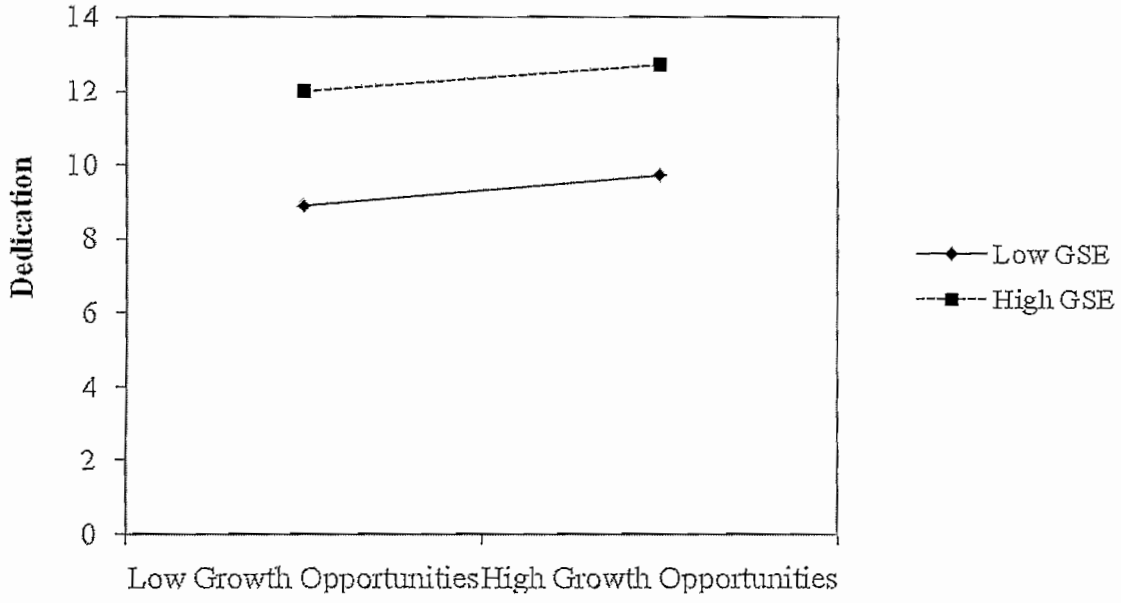

Figure 3: Interaction effect of GSE and Growth Opportunities on Dedication

Section 4: Article 3

EXPLANATORY STYLE, WORK, AND PSYCHOLOGICAL OUTCOMES IN A PUBLIC SERVICE CONTEXT

Submitted to the

South African Journal of Industrial Psychology

4.1 Guidelines to authors

SA Journal of Industrial Psychology/ SA Tydskrif vr Bedryfsielkunde
Quantitative Research Study

Manuscript Specifications:
Font Type: Times New Roman
Font Size: 12
Line Spacing: 1.5
Page Margins: Bottom & Top = 2.5cm
Left & Right = 2 cm
File Format: Microsoft Word (.doc) or Open Office (.dot) **NOT (.docx format)**
General Formatting: At the last pages of this author guideline

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Length of Manuscript:
About 25 pages text only (maximum), excluding tables, figures and the list of references.

Manuscript Guidelines

Title: Informative but concise eg.: Names of questionnaires, countries, and or authors start with capital letters.

Author: Name(s), include full first name, e.g. Gert P. Roux, not G.P. Roux. The name of the department and the University of each author. **The e-mail address, postal and phone number of the corresponding author should be included.**

Abstract: In English, not more than 250 words. If the article is written in Afrikaans please include an English title in the abstract. The abstract should state concisely the scope of the work and the principal findings, the following should be sub-headings:.

- **Orientation** – A brief theme sentence to orientate the reader about the overall issue or problem area addressed in this article.
- **Research purpose** – The main research aim or purpose of the study is stated.
- **Motivation for the study** – The rationale or motivation for the study is provided.
- **Research design, approach and method** – The research design, approach and method is briefly explained with specific reference to the target population and the sample size.
- **Main findings** – The main results/findings of the study is summarized.
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- **Contribution/value-add** – A concluding statement indicates the contribution or value add of the study in addressing gaps or contradictions in the literature.

Key words: Use five [5] words not already included in the title, separated by a semi-colon. Refer to the discipline; sub-discipline; field; theme; research design; context

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Manuscript Contents

The manuscript contains five sections, namely the introduction, research design, results, discussion and the references. All these first-level headings appear in bold capital letters and are centered.

INTRODUCTION:
The introductory section normally contains the following seven elements; headings are indicated in [brackets]:

(1) [**Key focus of the study**] A thought-provoking introductory statement on the broad theme or topic of the research (why should I even bother to read further?);

(2) [**Background to the study**] Providing the background or the context to the study (explaining the role of other relevant key variables in this study);

(3) [**Trends from the research literature**] Cite the most important published studies previously conducted on this topic or that has any relevance to this study (provide a high-level synopsis of the research literature on this topic);

(4) [**Research Objectives**] Indicate the most important controversies, gaps and inconsistencies in the literature that will be addressed by this study;

(5) In view of the above (in 4) state the core research problem and specific research objectives that will be addressed in this study;

(6) [**The potential value-add of the study**] Explanation of the study's academic (theoretical & methodological) or practical merit and/or importance (provide the value-add and/or rationale for the study); and

(7) [**What will follow**] Provide the reader with an outline of what to expect in the rest of the article.

Tips on Introduction Section:

The first-level heading is **INTRODUCTION**. However, second-level headings may be used in this introductory section. These subheadings are flush with the margin, and are typed in lower case; bold starting with a capital letter. The INTRODUCTION section consists of an introduction to the article and a literature review.

If lists of bullet points are presented, they should be in the following format:
- *Longevity* . How long individuals live.
- *Prognosis* . How well an individual responds to challenges of disease or trauma.
- *Mental health* . General level of mental functioning

Avoid using lists that contain more than 10 bullet points.

Synthesis and Critical evaluation of the literature

A synthesis and critical evaluation of the literature (not a compilation of citations and references) should at least include or address the following aspects:

(1) Conceptual (theoretical) definitions of all key concepts;

(2) A critical review and summary of the themes emerging from previous research findings (constructs, research participants, research designs, objectives, etc.) on the topic;

(3) Including a review of existing approaches towards the measurement of relevant constructs; and

(4) A clearly established link exists between formulated hypotheses (or objectives) and theoretical support from the relevant literature. The stated hypotheses follow directly on the section where the literature was reported.

RESEARCH DESIGN (first-level heading)

The first-level heading **RESEARCH DESIGN** is typed in capital letters, centred and in bold. Only **two** second-level headings follow on the research design and they appear in lower case, bold and are flush with the margin.

Research approach (second-level heading)

A brief description of the research approach followed in the study should be included. It should for instance state that the study follows the quantitative tradition and further explain whether it is a cross-sectional field survey, an experiment or a factorial design and why this design was chosen. Furthermore, it should explain what type of data (primary or secondary) was used and which approach (e.g. correlational) was followed in the data analyses. This section is not similar to the description of the research procedure.

Research method (second-level heading)

Normally, at least the following four third-level headings are used to explain the research method followed in the study, namely research participants; measuring instruments; research procedure; and statistical analyses.

Research participants (third-level heading)

A description of the target population, sampling frame and the sampling procedure are provided here. The obtained sample size and response rate are reported. This section normally provides a summary table and a discussion of the research participants in terms of their biographical details such as age, gender, home language, highest academic qualification, etc.

Measuring instrument(s) (third-level heading)

This section describes the measuring instrument(s) used in the study or the way in which constructs were operationalised. Fourth-level headings are in italics, underlined, and end with a full-stop. These types of headings are directly followed (in the same line) by a sentence (the same as with bullets above). Besides clearly referencing the origin of the scale this section should also clearly explain the basic scale design, the number of dimensions covered by the scale, exemplary examples of items (not the ones used in the scale) in each dimension as well as an example of the response rating scale. It should also be indicated which items are reverse scored or reflected and how total scores are calculated. This section should also report on the reliability and validity of the scale (as reported in other studies) as well as the rationale for using this scale in the study.

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This section sets out the procedure used for the collection of the data for the study. Specific attention should be given to the clarity of the research procedure for possible replication purposes.

Statistical analysis (third-level heading)

Normally, only a brief mentioning of the statistical procedures employed in the analyses of the data is provided. See the opposite example. In the event of unusual or new statistical techniques a brief description of each is then also provided under this heading. The description of familiar statistical procedures is otherwise incorporated into the presentation of the results.

RESULTS (first-level heading)

The next first-level heading is **RESULTS**, which appears in capital letters, in bold and is centred.
The results section can be divided broadly into two sections:

- Firstly, an overview of the descriptive statistics of each scale (only if space permits), as well as the reliability statistics for each scale is provided.
- Secondly, an overview of the inferential statistics according to all stated hypotheses is provided.
- Keep the following guidelines in mind when presenting the results of your study:
- present your results as concisely as possible;
- use tables and figures selectively, by not cluttering the article with tables and figures;
- cross-references to relevant tables or figures should precede the mentioned table or figure;
- interpret the contents of a table or a figure for the reader;
- follow established conventions when reporting statistical data; and
- report the statistical hypotheses (both the null and the alternative hypotheses) when reporting the results.

DISCUSSION (first-level heading)
The next heading is **DICUSSION,** which appears in capital letters, in bold and centred.

This section normally contains the following eight elements:

- restate the main objective of the study;
- reaffirm the importance of the study by restating its main contributions;
- summarise the results in relation to each stated research objective or research hypothesis;
- link the findings back to the literature and to the results reported by other researchers;
- provide explanations for unexpected results;
- provide the conclusions and recommendations (implications for practice);
- point out the possible limitations of the study; and
- provide suggestions for future research.

Second and third-level headings may be used in this section.

REFERENCES (first-level heading)

References begin on a separate page. References cited in the text should all be included in the list at the end of the paper. Full references at the end of the paper, arranged alphabetically by surname, chronologically within each name, with suffixes a, b, c, etc. to the year for more than one per year by the same author. Note that the second and subsequent lines are indented. This journal makes use of the APA reference style. We have an APA style guide which you can be download from the journal website.

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- Start each paragraph at the margin (no tabs to indent first line). Place a blank line between paragraphs to separate.

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- In referring to a work by three, four or five authors all the relevant names have to be furnished in the **first** reference to the work, e.g.:
  ...the traditionalist personality (Riesman, Denney & Glazer, 1968, p. 40) restrains him from doing...
- In **later** references to this work only the first author's name is stated, and the abbreviation '*et al.*' is used:
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Spacing and punctuation: There should be one space (not two) between sentences; one space before unit terms (e.g. 5 kg, 5 cm, 5 mmol, 5 days); no space before % or °. Thousand/millions are marked with a space, not a comma (e.g. 1 000, 1 000 000) Ranges are expressed with an extended hyphen, not with a short hyphen.

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4.3 Manuscript

EXPLANATORY STYLE, WORK, AND PSYCHOLOGICAL OUTCOMES IN A PUBLIC SERVICE CONTEXT

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[1]School for Psychosocial Behavioural Sciences,[2]School for Behavioural Sciences,
North-West University ([1]Potchefstroom Campus, [2]Vaal Triangle Campus), South Africa.

ABSTRACT

Orientation and motivation. Few studies have focussed on the consequences for positive psychological outcomes in the workplace especially in relation to the role played by personal resources such as explanatory styles. Work context has many consequences for the psychological outcomes for employees on the one hand. Explanatory styles also have many different psychological outcomes for employees.

Research purpose. This study explored the main effects of explanatory style and work context factors (job demands and job resources) on psychological outcomes (work engagement and psychological well-being). The study also examined the moderating role of explanatory style in the relationship between work context factors and psychological outcomes.

Research design, approach and method: A questionnaire-based cross-sectional survey research design was implemented. The following measuring instruments, the Explanatory Style (ES) Questionnaire, The Job-Demands Resources (JD-R) Scale, The Satisfaction with Life Scale (SWLS), The Affectomemter-2 Short-form (AFM) and the Utrecht Work Engagement Scale (UWES) were used to collect data from 459 participants. Descriptive statistics, indices of main effects and interaction effects are reported.

Main findings. The results of the study showed significant main effects for work context factors and explanatory factors as predictors of psychological outcomes. Furthermore, some facets of explanatory style moderated the relationship between work context and psychological well-being.

Practical implications. Possibilities for attributional retraining and the role of feedback-induced change are highlighted by the findings.

Word count: 222

Keywords: explanatory style; attributional style; job demands; job resources; engagement; psychological well-being; work engagement; public service context

INTRODUCTION

The role of personal resources such as explanatory style (optimism and pessimism), have been considered in the stressor-strain relationship (Mäkikangas & Kinnunen, 2003; Xanthoupolou, Bakker, Demerouti & Schaufeli, 2008) with some studies indicating inconsistent findings for health outcomes (Segerstrom, 2005). Chang (2002) had earlier indicated that although empirical evidence that supports the interactive model of optimism-pessimism and stress in predicting psychological outcomes in adults exists, there are several methodological and theoretical questions that still need to be resolved. Studies pertaining to the consequences for positive psychological outcomes have received much less attention (Bunce & Peterson, 1997) despite their potential to explain the dynamics between work context and psychological outcomes.

Various studies in occupational health psychology have shown that the work context has many consequences for the psychological, physical, and emotional health of employees (Grime 2004; Luthans, Avey, Clapp-Smith & Lin, 2008; Tennant, 2001; Warr, 2006; Weiss & Cropanzano, 1996) with some studies using optimism and pessimism as predictors of these outcomes (Chang, 2002; Extremera, Durán & Rey, 2007; Lai, 2009; Proudfoot, Corr, Guest & Dunn, 2009; Sanjuán, Pérez, Rueda & Ruiz, 2008; Scheier & Carver, 1993). As Lai (2009) indicates, most of these types of studies focussed mainly on direct main effects of the latter. Warr (2006) argues that it is important to transcend the process of merely testing main effects in the relationship between work context and employee well-being. Therefore the current study explores the main effects of explanatory style and work context factors (job demands and job resources) on psychological outcomes (work engagement and psychological well-being). The study also examines the moderating role of explanatory style in the relationship between work context factors and psychological outcomes.

Aspects such as individual differences in cognitive processes are important in understanding the effects of the work environment on health outcomes (Salanova, Peiro & Schaufeli, 2002; Schaubroeck, Jones & Xie, 2001). Some examples of how these work environment effects could be in terms of how an employee interprets a situation and the attributions made about that situation (Warr, 2006) and how these interpretations could potentially influence the individual's psychological adjustment to the constraints of the work environment.

Xanthopoulou *et al.* (2008) conceptualise these individual differences as personal resources that may function as mediators or moderators between environmental factors such as work context variables and psychological outcomes. Examples of the interactive effects of explanatory styles in particular, are extant in the literature (Abraham, 1997; Chang 2002; Sanjuán *et al.*, 2008). The role of these explanatory styles have been implicated in employee well-being as it is influenced by both work context characteristics and the interpretation by the individual of these work context characteristics (Campbell & Martinko, 1998; Lyubomirsky, 2001; Parkes, 1994; Proudfoot, Corr, Guest & Gray, 2001).

The aim of this study was to test the prediction of psychological outcomes by explanatory style and work context factors on the one hand, and whether explanatory style plays a moderating role in the relationship between the work context of public servants and their psychological outcomes on the other hand. It is expected that explanatory style and work context factors will significantly predict psychological outcomes. Secondly, it is expected that the interaction between explanatory style and work context factors will differentially influence psychological outcomes. The latter is based on different findings shown for both optimism and pessimism as explanatory style (Chang, 2002; Extremera *et al.*, 2007; Proudfoot *et al.*, 2009).

Explanatory style

Researchers have shown that people differ in terms of their explanatory style (optimism versus pessimism) which they consistently use to assign meaning to events and situations which impact them on a personal level (Extremera *et al.*, 2007; Lai, 2009 Seligman, Abramson, Semmel & Von Baeyer, 1979). Typically an explanatory style is used to understand, predict, and control the individual's environment (Ashforth & Fugate, 2006). Chang (2002) indicates that in adult populations evidence has shown beyond direct effects that explanatory style can interact significantly with stress in the prediction of adjustment, thus suggesting a buffering effect by the explanatory style. Although previously thought to be speculative, Lai (2009) argues that an explanatory style such as optimism has been thought to buffer the individual against stress through conferring resilience to a stressful encounter. For example, many different studies have generally shown that optimism has been associated with greater positive psychological outcomes, whereas pessimism has been associated with greater negative psychological outcomes (Chang, 2002; Proudfoot *et al.*, 2009; Sanjuán *et al.*, 2008) but the results are not consistent when physical health

is an expected outcome (Segerstrom, 2005). In this study, the outcome variables are psychological well-being and work engagement.

Explanatory style is a cognitive personality variable that is made up of multiple dimensions that represent the various kinds of attributions made by individuals about the causes of good or bad outcomes that occur in individual's lives (Bunce & Peterson, 1997; Ferrie, Shipley, Newman, Stansfeld & Marmot, 2005; Peterson & Seligman, 1984; Sanjuán et al., 2008; Schaubroeck et al., 2001). These attributions are made through tendencies to see causes as internal vs. external, stable vs. unstable, global (chronic) vs. specific (transient). Seligman (1998) conceptualises optimism as the tendency to explain positive events in terms of personal, permanent and global causes while negative events are explained in terms of external, temporary and situation-specific causes. Pessimism is the opposite of optimism and it undermines the favourable impact of success and increases the likelihood that failures could be potentially destructive (Youssef & Luthans, 2007). However, high levels of optimism do not necessarily imply low levels of pessimism and vice versa. Chang and Sanna (2003) indicate that based on this conceptual definition of optimism and pessimism, it is not surprising that they have been found to moderate the relationship between stress and adjustment. The consequences of the latter for the workplace could be absenteeism and turnover intention (Proudfoot et al., 2009).

Perception of occupational circumstances and explanatory style

The perception of occupational circumstances as stressful depends to some extent on individual characteristics (Mäkikangas & Kinnunen, 2003). Previous research has shown that the response of individuals on psychological, physical and behavioural levels may be different on account of personality characteristics and personal resources too. According to Parkes (1994), personal characteristics can moderate the relation between work context factors and negative outcomes through a good fit between personal characteristics and work-environment characteristics that would result in favourable psychological consequences while a lack of fit would lead to negative consequences. Lyubomirsky (2001) demonstrated empirically that individuals may differ systematically in the particular cognitive and motivational strategies they use and that these strategies moderate the impact of the objective environment on well-being. Optimism makes a person appraise a stressful situation in a more positive light. Optimists are known to use a variety of coping strategies to deal with stressful situations in comparison to pessimists (Mäkikangas &

Kinnunen, 2003) through greater flexibility in their behaviour and successful adaptation to changing situations (Totterdell, Wood & Wall, 2006). In the context of the present study it is expected that explanatory style may modify how the individuals in this study perceive available job resources and job demands and this will differentially influence their psychological well-being and work engagement.

A body of literature has shown that explanatory style is associated with specific outcomes in the workplace. An optimistic explanatory style has been shown to harness a willingness in individuals to approach the environment and not be discouraged by negativity (Xenikou, 2005) and has been associated with greater use of problem-solving/cognitive restructuring coping styles and less use of avoidance to deal with stress (Welbourne, Eggerty, Hartley, Andrew & Sanchez, 2007) and finally to predict performance in the workplace (Luthans *et al.*, 2008). It does appear that there is a distinction in the effect of attributions based on whether they are positive or negative. Proudfoot *et al.* (2001) showed that attributional style for positive events was more strongly related to job motivation, turnover intention, learned resourcefulness and psychological strain in comparison to an attributional style for negative events. Individuals with a more pessimistic explanatory style have been shown to have stronger negative affective, cognitive, and behavioural reactions to events which impact them negatively than people with an optimistic explanatory style (Campbell & Martinko, 1998; Seligman & Schulman, 1986). Explaining positive events by internal, stable, and global causes is related to recovery from depression and a lower risk for relapse (Voelz, Haeffel, Joiner & Wagner, 2003). Findings in a study by Ferrie *et al.* (2005) regarding workplace challenges for the individual suggest implications for explanatory style. They showed for example that under conditions of job insecurity, employees who are civil servants reported minor psychiatric morbidity.

The Job Demands-Resources Model

The Job Demands-Resources (JD-R) model explains how employee well-being is produced by two sets of working conditions, namely, job demands and job resources (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Job demands are associated with those aspects of work that require sustained effort on a physical or psychological level whereas job resources are those aspects that are functional in achieving work-related goals (Xanthoupoulou *et al.*, 2008). Job demands may exhaust an employee's mental and physical resources and consequently lead to a state of exhaustion and to health problems (e.g., burnout) while job resources may predict organisational commitment and

work engagement. This model assumes that irrespective of the work context, when certain job demands are high, and when job resources are low, negative occupational outcomes such as stress or burnout are possible. Although these specific negative outcomes are not tested in this study, it may be expected that when job demands are high and job resources are low, the level of psychological well-being and work engagement will be low. The JD-R model was later expanded to include personal resources. Personal resources are thought to be linked to resilience and influence psychological well-being by reducing the impact of demands (Prieto, Soria, Martínez & Schaufeli, 2008). Xanthoupolou *et al.* (2008) in their study on the role of personal resources found evidence to show that personal resources played a meaningful role in the relationship between job resources and work engagement. Employees with high levels of personal resources have greater mastery over potentially difficult situations and this further suggests the possible moderating role of optimism and pessimism.

Although a list of predictors of psychological outcomes is discussed variously in the literature and also in this study, the role of personal resources such as explanatory style has only recently been investigated (Xanthopoulou *et al.*, 2008). Personal resources are important for psychological outcomes (Proudfoot *et al.*, 2009; Salanova *et al.*, 2002; Sumer, Karanci, Berument & Gunes, 2005; Xanthopoulou *et al.*, 2008) including the motivation of the individual to maintain them as proposed by Hobfoll (1989). Hobfoll's (1989) Conservation of Resources (COR) theory which was developed to help better understand the process underlying stress and coping, is particularly relevant in understanding the assumptions of the JD-R model. Hobfoll's (1989) theory states that the prime human motivation is to protect, maintain and accumulate resources that would help them cope with stress. These resources are categorised as follows: *objects* (e.g., shelter, transportation); *conditions* (e.g., full-time employment, marriage), *energies* (e.g., money, time, knowledge, insurance) and *personal characteristics* (e.g., mastering, self-esteem, self-efficacy) The latter resources are linked to personality traits and skills which assist people with managing stress and may be typical of explanatory style (Sumer *et al.*, 2005). Thus from an organisational perspective, the JD-R model, which is expanded to included personal resources as well as the conservation of resources model all work together to explain the importance of job demands and even more so job resources in establishing the psychological outcomes of employees in terms of psychological well-being and work engagement.

Bakker, Hakanen, Demerouti and Xanthopoulou (2007) indicate that the relationship between job demands and job resources is very specific in terms of the implications of personal resources. Job

resources reduce the effects of job demands and the associated physiological and psychological costs required to respond to the demands. A lack of job resources in the long term could lead to adverse reactions in the employee such as withdrawal from work and reduced motivation and commitment (Bakker, Demerouti & Schaufeli, 2003). Xanthopoulou, Bakker, Demerouti and Schaufeli (2009) surmise that these work characteristics induce certain events at work and determine the psychological states of employees, such as employee well-being. The latter is supported by the Affective Events Theory (Weiss & Cropanzano, 1996) which proposed that various events at work have immediate affective consequences in that they generate emotional reactions and changes in momentary affective states. Thus, it is expected that the interactive effect between explanatory style and work context factors will be different for psychological outcomes.

Psychological well-being and work engagement

There are many conceptualisations of psychological well-being (Harter, Schmidt & Keyes, 2002; Wright & Cropanzano, 2004). The most general conceptualisation however looks at psychological well-being in terms of overall effectiveness of an employee's psychological functioning, typically of the "well-being approach" (Harter *et al.*, 2002). Cotton and Hart (2003) have suggested that the structure of the well-being of employees includes both emotional and cognitive components but it is also important to note that psychological well-being in the workplace is affected by any number of antecedent factors (Danna & Griffin, 1999). Conceptually, psychological well-being in the workplace is considered to comprise of a preponderance of positive over negative affect and a global judgement of satisfaction with life. Cohen and Pressman (2006) indicate that affect can either be brief or longer-lasting. In this study, psychological well-being is conceptualised in terms of a state-like positive and negative affect as measured by the Affectometer (Kammann & Flett, 1983) and the Satisfaction with Life Scale (Diener, Emmons, Larsen & Griffin, 1985) and as an outcome of both job demands and resources and explanatory style. Van Horn, Taris, Schaufeli and Scheurs (2004) consider affect to be a critical aspect of well-being in the work context. According to Cotton and Hart (2003), it is possible that negative outcomes of work can also be caused by low levels of positive work experiences and low positive emotional states. Harter *et al.* (2002) cite evidence demonstrating that employees who experience a preponderance of positive affect over negative affect receive higher performance ratings from supervisors than their counterparts who experience the opposite.

Work engagement as the second psychological outcome apart from psychological well-being in this study is conceptualised to comprise of vigour, dedication and absorption in line with the definition given by Schaufeli, Salanova, González-romá and Bakker (2002). However, only vigour and dedication are used in this study as it has been suggested that absorption was found to be a possible result of engagement (Prieto et al., 2008). Olivier and Rothmann (2007) think of engaged employees as being involved in their work and characteristically alert in their cognitions and emotionally connected to others in doing their work. Engaged employees have high levels of energy and have enthusiasm for their work (Bakker & Demerouti, 2008). In the literature, work engagement is hypothesised to emanate from job resources (Llorens, Schaufeli, Bakker & Salanova, 2007; Mauno, Kinnunen & Ruokolainen, 2007). Most recent evidence on work engagement shows that it influences attitudes in the workplace such as personal initiative (Hakanen, Perhoniemi & Toppinen-Tanner, 2008).

The reviewed literature shows firstly that explanatory style may have a buffering role between work context factors and psychological outcomes. Secondly, the literature also shows that explanatory style, which can either be optimistic or pessimistic, are related to factors that influence psychological well-being and work engagement. Finally, work context factors have implications for the psychological outcomes of employees.

RESEARCH DESIGN

Research approach

The study used a cross-sectional survey research design. Questionnaires were used to gather primary data in a non-random field survey. A correlational approach was followed in the data analysis.

Research method

Participants

A total of 459 participants took part in the study. The sample was drawn from North West Provincial Government Employees with the qualifications of Matric (Standard 10/Grade 12) and above. There were more females (59.5%) than males (32.9%) in the study. A preponderance of the

sample (56.7%) comprised of participants in the age categories 25-44, whereas 5.9% fell into the 18 – 24 age group, while ages 45 -55 made up 31.8% of the sample. In terms of educational status, 35.9% of the sample had matric, 36.2% had a diploma or a Bachelor's degree or diploma while 12.9% had a postgraduate degree. Participants came from various employment categories, for example, 42.9% were operational employees while 50.7% listed management (Assistant Director through to Director Level) as their category of employment. In terms of the restructuring process in Government, 65.1% indicated they were not affected by this process compared to the 29.4% who indicated they were affected by the process. Many of the participants (72.5%) indicated they had not considered finding employment elsewhere, while 21.6% had considered this option. Owing to missing data in some of the categories, the percentages may not add to 100%.

Measuring instruments

The first author compiled a demographic questionnaire to capture demographic information such as age, gender, marital status, present job category, type of job performed and turnover intention of participants.

The *Explanatory Style Questionnaire* (Williams, Wissing & Botha, 2005). This is an 18-item scale developed to test explanatory style used to measure how individuals tend to explain good and bad events that occur in their work context. The items were rated on a Likert scale varying from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale is based on the explanatory style theory of Buchanan and Seligman (1995). Typically, three aspects are measured by a pair of questions along the following dimensions: internal/external; stable/unstable; and global/specific. A person using a more optimistic explanatory style is more likely to see negative events as externally caused and unstable and specific in character and is therefore more likely to have higher expectations of themselves and their jobs, be more willing to take the initiative and to take risks, persist under adverse conditions. Exploratory factor analyses indicated two main factors subsequently named optimism and pessimism. Optimism is an explanatory style characterised by the tendency to view positive events in the workplace as stable, internal and global, and negative events as unstable, external and specific. Pessimism on the other hand is a negative and stable explanatory style. These two factors explained 35% of the variance. Cronbach alpha for this scale is reported in Table 1.

The Job Demands-Resources Scale (JD-R) (Rothmann, Mostert & Strydom, 2006). Job demands and job resources as work characteristics were assessed with the 48-item JD-R. These work

characteristics were assessed based on the following dimensions: pace and amount of work, mental load, emotional load, variety in work, opportunities to learn, independence in work, relationships with colleagues, relationship with supervisor, ambiguities about work, information, participation, contact possibilities, remuneration and career possibilities. All these dimensions were rated on the scale 1 (*never*) to 4 (*always*). Rothmann *et al.* (2006) attest to the reliability and validity of this scale in the South African context. Internal reliabilities for the present study are reported. Factor analyses conducted in the present study indicated that job demands was made up of Overload and Insecurity, whereas job resources were made up of Advancement, Organisational Support and Growth Opportunities.

The Satisfaction with Life Scale (SWLS: Diener *et al.*, 1985). Participant's general satisfaction with life was measured with the 5-item Satisfaction with Life Scale, on a cognitive-judgmental level. The items were rated on a 7-point scale ranging from 1 *(strongly disagree)* to 7 *(strongly agree)*. The scale has yielded good reliability in previous studies. In a study by Diener *et al.* (1985) a 2-month test-retest reliability index of 0.82, and a Cronbach alpha-reliability index of 0.87 was obtained. Pavot and Diener (1993, 2008) also report good psychometric characteristics of this scale. Wissing and colleagues also found the SWLS reliable and valid for use in an African context (Wissing *et al.*, 1999).

The Affectometer-2 Short-form (AFM) (Kammann & Flett, 1983). A general sense of well-being or general happiness was measured with the AFM. The balance between Positive and Negative Affect determines psychological well-being (Kammann & Flett, 1983). The scale comprises of 20-sentence items scale with 10-items measuring Positive Affect, and the other 10 items measuring Negative Affect. The difference between Positive Affect and Negative Affect determines Affect Balance (PNB). The higher the level of Positive Affect compared to Negative Affect, the higher the overall level of well-being (Kammann & Flett, 1983). All the dimensions were rated on a scale from 1 *(not all the time)* to 5 *(all the time)*. These authors report Cronbach alpha-reliability indices of 0.88 to 0.93. Wissing *et al.* (1999) indicated the reliability and validity of this scale for use in an African group.

The Utrecht Work Engagement Scale (UWES) (Schaufeli *et al.*, 2002). The 17-item questionnaire was developed to measure levels of engagement. The UWES comprises of 3 dimensions, namely Vigour, Dedication, and Absorption. Items are rated on the basis of the frequency of occurrence, the response pattern varies from 0 *(never)* to 6 *(everyday)*. Naudé (2003) and Rothmann and Storm

(2003) used confirmatory analysis to demonstrate the factorial validity of the UWES. Jackson (2004) reports the following internal reliabilities of the subscales: Vigour (0.71), Dedication (0.81), and Absorption (0.57). Psychometric properties and descriptive statistics of Vigour and Dedication are reported in the results section.

Procedure and ethical considerations

In order to conduct the study using NWPG officials, the Director General of the North West Provincial Government (NWPG) was approached to request permission. Once the DG had approved for the study to be undertaken amongst NWPG employees, the first author worked through the Provincial Employee Assistance Programme (EAP) forum to request Employee Assistance Programme (EAP) coordinators to assist in gathering data in their respective Departments. Training was provided to the EAP Coordinators on the administration of the questionnaires and well as the ethical implications of data collection. The coordinators were then responsible to oversee the questionnaire completion by participants in their Departments. The coordinators distributed the questionnaires to NWPG employees with a minimum of a matriculation certificate and they were a convenience sample. It was required that the participants complete and sign a return slip to indicated that they were willing to take part in the study and gave their informed consent. On a monthly basis, the first author reminded the coordinators to check respondents for completed questionnaires which could be submitted. The guidelines on ethical treatment of human subjects in research, was adhered to. The Ethics Committee of the North-West University, Potchefstroom Campus gave its ethical approval for the study (05K10). The data was cleaned and analysed following the data collection phase.

Statistical analysis

Descriptive statistics of all measures employed in the study were calculated. Means, standard deviations and Cronbach alphas are reported based on computation using SPSS (SPSS Inc., 2007). The criterion validity of explanatory style was tested by computing intercorrelations among measures of optimal psychological functioning and explanatory style where a positive correlation with indices of positive functioning is expected. The practical significance of the correlations is reported (Field, 2005). The importance of the latter over the sole reporting of significance testing is acknowledged in line with pertinent literature advocating its use (Cohen, 1990; Hunter, 1997).

Main effects. Multiple regression analyses were used to test the main effects of work context variables (job demands and job resources) and explanatory style on psychological outcomes (psychological well-being and work engagement). The amount of variance explained by the independent variables in the dependent variables is reported on the basis of the coefficient of determination (R^2). The significant contribution made by the various dimensions is highlighted by referring to associated student t-values, their significance levels (p) and standardised regression coefficients (β).

Interaction effects. Two-step hierarchical regression analyses were used to test whether explanatory style moderated the relationship between work context variables and psychological outcomes. The predictor variables (Overload, Job Insecurity, Growth Opportunities, Organisational Support, and Advancement) and moderator variables (Optimism and Pessimism) were entered in the model first in their continuous form. These were followed by the interaction terms (i.e., between job demands and resources on the one hand and explanatory style on the other hand). Moderation is important in explaining and testing the interactive effects of two or more variables in predicting a dependent variable while controlling for associated main effects (Dawson & Richter, 2006; Preacher, Curran & Bauer, 2006). Prior to testing the moderation, all predictor variables (Overload, Job Insecurity, Growth Opportunities, Organisational Support, and Advancement) and moderator variables (Optimism and Pessimism) were centred so as to exclude the possibility of any multicollinearity in the regression equation (Brambor, Clark & Golder, 2006). Centring is achieved by computing the deviations of the scores of the independent variables from their means. In the computation of the hierarchical regression analyses, all predictor variables and moderator variables in their continuous form were entered in the first step followed by their interactions in the second step. A significant interaction term indicates that the effect of work context on either psychological well-being or work engagement differs across the levels of explanatory style. Heuven, Bakker, Schaufeli, & Huisman (2006) reported the significance of standardised regression coefficients (β) as evidence of moderation with the significance of the change in R^2. Any additional prediction over existing construct of between 1 to 5% is considered by Mayer, Salovey and Caruso (2000) to be worthwhile. Significant interactions will be graphically represented. Mitchell and Jolley (2007) indicate that in the case of the latter if two lines are not parallel, then evidence of an interaction could be present.

RESULTS

Descriptive statistics

Table 1 shows the means, standard deviations, and internal consistencies of the measures used in the study. As the table shows, all measures included in the analyses indicate acceptable reliability of 0.70 based on the recommendations by Clark and Watson (1995) except for the subscale from the work engagement variable (Vigour).

(Insert Table 1 here)

The subscales of the *Explanatory Styles Scale* are nearly all significantly correlated with other measures used in the study as Table 2 shows. In terms of effect sizes the correlations range from small ($r = 0.10$) to large ($r = 0.50$) effects. Consistent with expectation that the directionality of the measures used (i.e. whether scales measures positive or negative functioning), the subscales of the *Explanatory Styles Scale* were either positively or negatively correlated. One subscale measuring job resources (i.e. Organisational Support) and two subscales measuring job demands (i.e. Job Insecurity and Overload) did correlate statistically significantly with pessimism. Organisational Support was the only which was not statistically significantly related to the optimism.

(Insert Table 2 here)

To test the degree of influence by work context factors and explanatory style on psychological outcomes as criterion or dependent variables, multiple regression analyses were conducted.

Firstly, a multiple regression analysis with Satisfaction with Life as dependent variable, job demands, job resources and explanatory style as independent variables yielded a significant F-value ($F = 4.39$, $p < 0.05$, $R^2 = 0.07$). Three variables contributed statistically significantly to the regression model as indicated by the Student t values: Job Insecurity ($\beta = -0.13$, $t = -2.53$, $p < 0.01$) Organisational Support ($\beta = 0.14$, $t = 2.29$, $p < 0.02$), and Pessimism ($\beta = -0.16$, $t = -3.26$, $p < 0.01$).

Secondly, a multiple regression analysis with Positive Affect as dependent variable and with job demands, job resources and explanatory style as independent variables yielded a significant F-value

($F = 9.15$, $p < 0.05$, $R^2 = 0.16$). Four variables made a statistically significant contribution to the regression model as indicated by the Student t values: Job Insecurity ($\beta = -0.11$, $t = -2.03$, $p < 0.04$), Growth Opportunities ($\beta = 0.19$, $t = 2.89$, $p < 0.01$), Optimism ($\beta = 0.19$, $t = 3.66$, $p < 0.01$), and Pessimism ($\beta = -0.15$, $t = -2.88$, $p < 0.01$).

Thirdly, a multiple regression analysis with Negative Affect as dependent variable, and job demands and job resources and Explanatory Style as independent variables yielded a significant F-value ($F = 9.15$, $p < 0.05$, $R^2 = 0.16$). Four variables contributed significantly to the regression model as indicated by Student t values: Job Insecurity ($\beta = 0.18$, $t = 3.22$, $p < 0.01$), Growth Opportunities ($\beta = -0.15$, $t = -2.34$, $p < 0.02$), Advancement ($\beta = 0.18$, $t = 3.23$, $p < 0.01$), and Pessimism ($\beta = 0.20$, $t = 3.78$, $p < 0.01$).

Fourthly, a multiple regression analysis with Vigour as dependent variable, and job demands and job resources (as measured by the JD-R) and Explanatory Style as independent variables yielded a significant F-value ($F = 25.68$, $p < 0.05$, $R^2 = 0.29$). Four variables made a statistically significant contribution to the regression model as indicated by the Student t values: Job Insecurity ($\beta = 0.17$, $t = 3.82$, $p < 0.01$), Growth Opportunities ($\beta = 0.31$, $t = 6.60$, $p < 0.01$), Optimism ($\beta = 0.13$, $t = 2.97$, $p < 0.01$), and Pessimism ($\beta = -0.14$, $t = -3.30$, $p < 0.01$).

Fifthly, a multiple regression analysis with Dedication as dependent variable, and job demands and job resources and Explanatory Style as independent variables yielded a significant F-value ($F = 29.39$, $p < 0.05$, $R^2 = 0.31$). Five variables made a statistically significant contribution to the regression model as revealed by the t values: Overload ($\beta = -0.11$, $t = -2.64$, $p < 0.01$), Job Insecurity ($\beta = 0.13$, $t = 3.08$, $p < 0.01$), Growth Opportunities ($\beta = 0.42$, $t = 8.29$, $p < 0.01$), Optimism ($\beta = 0.09$, $t = 2.19$, $p < 0.03$), and Pessimism ($\beta = -0.15$), $t = -3.59$, $p < 0.01$).

To test the moderation of Explanatory Styles between job resources, job demands and both psychological well-being and work engagement, hierarchical regression procedures were implemented. The predictor (dimensions of both job demands and job resources) and moderator (explanatory style) main effects were entered as the first step of the regression equation followed by all their interaction terms in the second step. As indicated, the interaction terms were centred before this procedure. The results of a series of hierarchical regression equations with facets of

psychological well-being as dependent variables are reported in Table 3 and those with work engagement as dependent variable are reported in Table 4.

Table 3 shows that when Positive Affect was the dependent variable, the coefficient of determination (R^2) increased by at least 5% after the interaction terms among work context factors (Overload, Job Insecurity, Growth Opportunities, Organisational Support and Advancement) and explanatory styles (Optimism and Pessimism) were entered into the equation. Although the model represented in the second step was significant ($F = 4.08$, $p < 0.01$), none of the regression coefficients arising from the interaction terms were statistically significant.

(Insert Table 3 here)

Table 3 also shows that following the addition of interaction terms, the prediction of Negative Affect increased by only 2%. A further analysis of this interaction effect was produced using slope analysis in Statistica. Figure 1 shows that at a low level of Optimism, Advancement was less strongly related to Negative Affect than on high levels of Optimism.

(Insert Figure 1 here)

When Satisfaction with Life was treated as a dependent variable, the addition of the interaction terms as indicated in Table 3, the coefficient of determination (R^2) increased by 9%. To further examine the direction of the interaction effect, the relationship between Satisfaction with Life and Advancement was analysed at high and low levels of Optimism. Figure 2 shows that at low levels Optimism (compared to high levels of Optimism) the relationship between Advancement and Satisfaction was relatively strong.

(Insert Figure 2 here)
(Insert Table 4 here)

Table 4 shows that when Vigour was used as a dependent variable, the coefficient of determination (R^2) increased by only 1% following the addition of the interaction terms based on work context factors and explanatory style. The model also shows that none of the interaction terms were significant. The table also shows that adding the interaction terms to a model predicting Dedication increased the coefficient of determination (R^2) by only 2%. The interaction term between Growth

Opportunities and Optimism yielded a significant standardised regression coefficient (β = -0.47). Owing to the small and insignificant change in the coefficient of determination (ΔR^2), the interaction was not plotted.

DISCUSSION

This study explored the main effects of explanatory style and work context factors (job demands and job resources) on psychological outcomes (work engagement and psychological well-being). The study also examined the moderating role of explanatory style in the relationship between work context factors and psychological outcomes. The results of the study showed significant main effects for work context factors and explanatory factors as predictors on psychological outcomes and secondly that some facets of explanatory style moderate the relationship between work context and psychological well-being. Specifically, the interaction term between advancement and optimism significantly predicted both negative affect and satisfaction with life.

More job resources than job demands and explanatory style had comparatively the largest explanation of variance in a dimension of work engagement, namely, dedication. Other larger explanations of variance were observed in terms of vigour (also from work engagement), negative and positive affect and lastly, satisfaction with life. These findings are consistent with the theorising in the Effort-Recovery model (Meijman, & Mulder, 1998) and the Conservation of Resources model (Hobfoll, 1998). Job resources which characteristically are organisational features that have the capacity to reduce job demands and their associated costs, enhance personal growth and development (Xanthopoulou *et al.*, 2008) and thus in a sense improve well-being and engender work engagement.

Although, a few of the work context dimensions and the dimensions of explanatory style were significant in explaining the variance in psychological outcomes, growth opportunities particularly seems to have contributed significantly to all psychological outcomes. In terms of psychological well-being, pessimism seems overall to have had the most significant effect followed principally by job resources such as growth opportunities and organisational support (especially in negative affect). Deci and Ryan (1985) in their Self-Determination Theory suggested that work contexts that support growth and relatedness, enhance well-being and vitality. The opposite is also possible where the absence of job resources may influence negative affect. For the sake of brevity, this part

of the discussion will be generally focussed on the importance of these dimensions for psychological outcomes.

The significant prediction of facets of psychological well-being by both the dimensions of job resources and particularly pessimism and to a lesser extent optimism, suggests that the absence of job resources can undermine the optimal functioning of employees. This is also clearly indicated by the significant relationships between growth opportunities and organisational support on the one hand and work engagement (i.e. vigour and dedication) on the other hand. These findings indicate that under conditions of available job resources, employees tend to be engaged with their work. Rothmann and Jordaan (2006) found that two dimensions of job resources, namely, growth opportunities and organisational support explained 26% of the variance in vigour. In a more recent study, Hakanen et al. (2008) also found a positive association between job resources and work engagement. To a large extent these findings confirm one of the tenets of the Job Demands-Resources model which contends that job resources are the antecedents of work engagement (Demerouti *et al.*, 2001; Schaufeli & Bakker, 2004). The findings in this study in terms of the importance of job resources for work engagement support the foregoing. In explaining this importance of job resources for work engagement, Schaufeli and Bakker (2004) argue that employees who experience their colleagues as supportive and receive appropriate feedback from their supervisors, are more likely to be successful in achieving their work goals. The findings in terms of the importance of job resources for work engagement support the foregoing. When employees experience positive psychological outcomes in the workplace as a result of available job resources and optimism, it is likely that this could spill over into other areas of their life and influence overall life satisfaction, affect balance and be characterised as generally happy people.

Although job resources significantly predicted both, psychological well-being and work engagement, the interaction term between advancement and optimism suggested a moderation effect for negative affect and satisfaction with life. The findings suggest that when employees have low optimism, the lack of advancement opportunities may be strongly related to negative affect. Under conditions of low optimism, advancement was strongly related to low satisfaction with life. Carver and Scheier (1990) argue that emotions are susceptible to feedback. This may possibly explain the relationship between advancement, negative affect and satisfaction with life. Low optimism may suggest that advancement is not a possibility and consequently lead to negative affect adversely influence satisfaction with life. Theoretically, it is expected that high optimism would be related to positive Affect (Campbell & Martinko, 1998; Proudfoot *et al.*, 2001; Seligman &

Schulman, 1986), but in this case when employees experience low opportunities of advancement in their work, negative affect would be high. As indicated in the introduction, Proudfoot *et al.* (2001) argued that explanatory style is more strongly related to the outcome of events.

A small effect indicated that dedication was significantly predicted by the interaction between growth opportunities and optimism and the interaction was not plotted. However because the potential effect of job resources on work engagement is best explained when personal resources are taken into account (Xanthopoulou *et al.,* 2009), the interpretation of this interaction was deemed important. Growth opportunities are related to the psychological meaningfulness attributed to jobs (Rothmann & Jordaan, 2006) whereas explanatory style in general has to do with the explanations people assign to events (Seligman *et al.*, 1979). Previous studies by Mauno *et al.* (2007) have shown that job resources are important for work engagement. Xanthopoulou *et al.* (2009) have demonstrated that the potential effect of job resources on work engagement is best explained when personal resources are also taken into account. This study has added to this finding by showing that interactions between job resources and explanatory style help explain work engagement. The finding may be important for planning purposes especially in the public sector that is concerned about service delivery and thus would require a variety of resources and orientation (such as dedication) to serving the public. This may influence work engagement and possible better service delivery.

Le Foll, Rascle and Higgins (2008) have established that attributional feedback can induce change in how individuals perceive their success or failure in a task. In terms of the workplace it would be recommended that employees should be given sufficient feedback regarding their performance as this might influence their explanatory style and consequently their work engagement. Part of the feedback on work performance could be career-pathing to give employees a clear idea where they stand in the organisation thereby reducing insecurities about their jobs as well as giving information regarding opportunities for advancement. Employee wellness programmes can also offer developmental workshops to employees to help them discover their explanatory styles and conflict resolution styles to help them know how they habitually assign meaning to events and then react on these. In this process alternative interpretations and foci can be developed such as in solution focussed therapy, and/or with application of constructive coping styles – once understood how they assign meaning and causality to good and bad events and discover possibilities for choice. Work context characteristics are also critical to psychological outcomes as the results have indicated. Job resources such as organisational support, growth opportunities and advancement could include

several other resources such as climate meetings to determine group cohesion and collegiality, coaching for improving skills and dealing with challenges in the workplace and improving interpersonal skills for interacting with the public.

Limitations for this study are related to the fact that it was a cross-sectional research design and data was collected using self-reports. Thus common method variance must be taken into consideration. This limits the extent to which the results can be generalized. A longitudinal study may have assisted with questions relating to causality. Future studies may extend the question of moderation addressed in this study to explore the upward spiral effects of psychological well-being and work engagement. Specific examples based on this model may include questions of job performance (improved service delivery), lower turnover intention and commitment to the organisation. Alternatives may be the exploration of moderated mediations as this study on focussed on moderation.

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TABLE 1
Descriptive statistics of measures

Variable	Minimum	Maximum	Mean	*SD*	α
Optimism	13	45	31.50	5.51	0.73
Pessimism	9	41	22.84	5.26	0.72
Satisfaction with Life	5	35	22.48	5.95	0.79
Positive Affect	10	50	36.04	6.45	0.81
Negative Affect	10	50	23.96	7.30	0.82
Vigour	0	30	21.71	5.82	0.68
Dedication	0	30	22.76	6.55	0.81
Overload	9	32	22.31	3.83	0.70
Insecurity	3	12	8.29	2.70	0.80
Organisational Support	14	56	37.12	8.26	0.87
Growth Opportunities	19	56	41.61	7.44	0.84
Advancement	5	20	9.52	4.02	0.85

TABLE 2
Intercorrelations of measures

Variable	1	2	3	4	5	6	7	8	9	10	11
12. Optimism	1.00										
13. Pessimism	-0.18*	1.00									
14. Positive Affect	0.14**	-0.21**	1.00								
15. Negative Affect	-0.10	0.29**	-0.37**++	1.00							
16. Vigour	0.22**	-0.16**	0.37**++	-0.17**	1.00						
17. Dedication	0.17**	-0.20**	0.46**++	-0.27**	0.72**+++	1.00					
18. Overload	-0.20**	-0.13**	-0.08	0.11**	0.05	-0.04	1.00				
19. Insecurity	-0.21**	0.15**	-0.05	0.22**	0.27**	0.22**	0.15**	1.00			
20. Organisational Support	0.06	-0.11**	0.24**	-0.06	0.33**++	0.34**++	-0.07	0.12*	1.00		
21. Growth Opportunities	0.21**	-0.15**	0.28**	-0.11*	0.48**++	0.51**+++	0.12**	0.25**	0.56**+++	1.00	
22. Advancement	0.05	0.08	-0.02	0.18**	0.15**	0.15**	-0.02	0.22**	0.41**++	0.29**	1.00

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

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

Effect size of correlations: $^{++}r = 0.30$ (medium effect) and $^{+++}r = 0.50$ (large effect)

TABLE 3

Interaction of Job Demands, Job Resources and Explanatory Styles on PWB

Independent Variable	Positive Affect				Negative Affect				Satisfaction with Life Scale			
	β	R^2	ΔR^2	F	β	R^2	ΔR^2	F	β	R^2	ΔR^2	F
Step 1		0.17*	0.17*	8.57*		0.18*	0.16*	9.26*		0.06*	0.06*	4.39*
Overload	-0.09				0.06				-0.01			
Job Insecurity	-0.12*				0.18*				-0.13*			
Growth Opportunities	0.16				-0.15*				-0.00			
Organisational Support	0.15				0.02				0.14*			
Advancement	-0.01				0.18*				0.01			
Optimism	0.12*				0.04				0.16*			
Pessimism	-0.17*				0.20*				-0.15*			
Step 2		0.22	0.06	4.08*		0.20	0.04	4.69*		0.15*	0.10*	3.26*
Overload x Optimism	0.05				0.10				-0.03			
Job Insecurity x Optimism	-0.04				0.02				0.04			
Growth Opportunities x Optimism	0.45				0.07				0.41			
Organisational Support x Optimism	0.08				0.01				0.03			
Advancement x Optimism	0.20				-0.28*				0.87*			
Overload x Pessimism	-0.08				-0.07				0.08			
Job Insecurity x Pessimism	0.06				0.01				0.07			
Growth Opportunities x Pessimism	0.15				-0.40				0.07			
Organisational Support x Pessimism	-0.07				0.04				-0.02			
Advancement x Pessimism	0.32				0.13				0.65			

TABLE 4

Interactions of Job Demands. Job Resources and Explanatory Style on Work Engagement

Independent Variable	Vigour				Dedication			
	β	R^2	ΔR^2	F	β	R^2	ΔR^2	F
Step 1		0.29*	0.29*	25.68*		0.31*	0.31*	29.39*
Overload	-0.03				-0.11*			
Job Insecurity	0.17*				0.13*			
Growth Opportunities	0.35*				0.42*			
Organisational Support	0.08				0.07			
Advancement	0.02				-0.02			
Optimism	0.42				-0.09			
Pessimism	-0.75*				-0.15*			
Step 2		0.30	0.01	11.09*		0.33	0.02	12.70*
Overload x Optimism	0.01				-0.05			
Job Insecurity x Optimism	0.05				0.01			
Growth Opportunities x Optimism	-0.46				-0.47*			
Organisational Support x Optimism	-0.02				-0.03			
Advancement x Optimism	-0.15				0.42			
Overload x Pessimism	-0.05				0.03			
Job Insecurity x Pessimism	-0.01				0.01			
Growth Opportunities x Pessimism	0.07				-0.01			
Organisational Support x Pessimism	-0.03				-0.03			
Advancement x Pessimism	-0.56				-0.02			

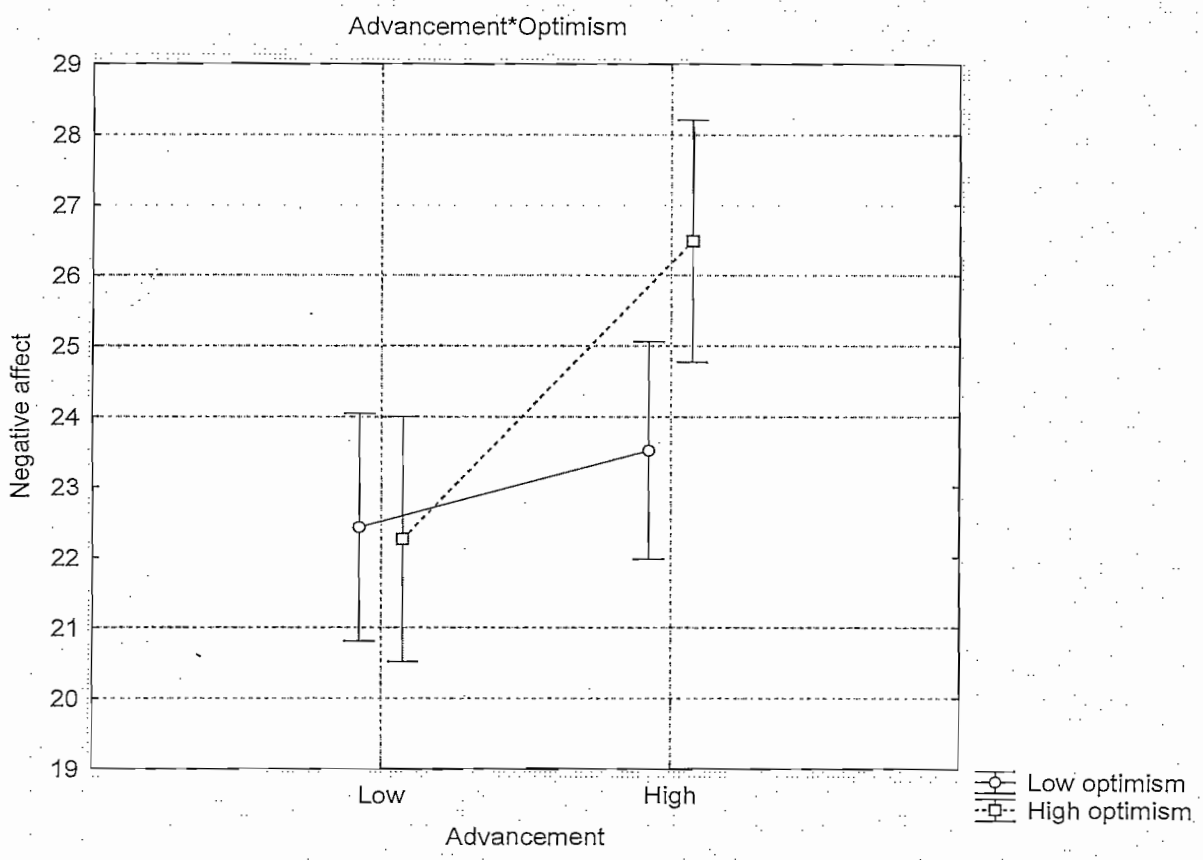

Figure 1: Interaction of Advancement and Optimism as predictors of negative affect

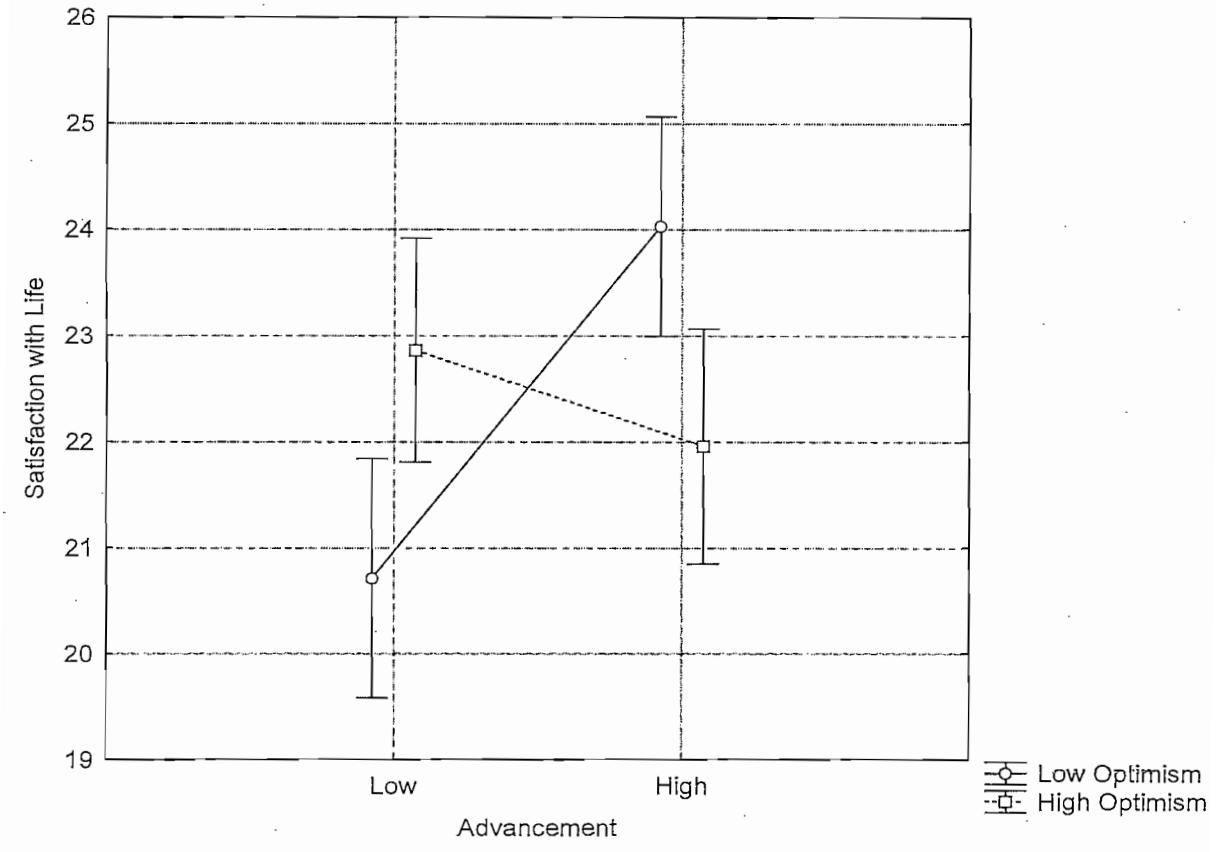

Figure 2: Interaction of Advancement and Optimism as predictors of Satisfaction with Life

CONCLUSION AND RECOMMENDATIONS

The general aim of this study was to explore whether personal resources (emotional intelligence, self-efficacy and explanatory styles) are moderators in the relationship between work context (job demands and job resources) and psychological outcomes (psychological well-being and work engagement) in a sample of government employees. Overall, the results of the study in the first place showed significant main effects for work context (job demands and job resources), and the personal resources as predictors of psychological outcomes (psychological well-being and work engagement). Secondly, the results also showed that the personal resources evaluated in this study moderate the relationship between work context and psychological outcomes. As the three articles have indicated, various combinations of interaction terms indicated the moderating role of personal resources in the relationship between work context and psychological outcomes. The findings overall underscore the importance of the role attributed to personal resources in the psychological outcomes of employees in terms of helping employees to respond to the demands of their environment successfully. The implications of this moderation will be addressed later in the recommendations.

Test of main effects with psychological outcomes as dependent variables. In all three articles, positive affect was significantly predicted by a common group of predictors e.g., growth opportunities (*job resources*), overload and job insecurity (*job demands*). This is consistent with the proposition of the JD-R which indicates that work characteristics have important implications for optimal functioning of employees. The amount of variance explained by work context factors in psychological outcomes gives sufficient support for the proposition made in the JD-R. In terms of article 1 the largest explanation of variance was obtained for positive affect followed by dedication. A similar observation was indicated by the results of article 2 whereas in article 3 the largest explanation of variance was obtained for dedication followed by vigour. These findings suggest that various work characteristics have different consequences for the psychological outcomes of employees.

The implications of the foregoing are also underscored mainly by Fredrickson's (2003) Broaden-and-Build theory of emotions which suggests that as individuals experience positive emotions, it is possible for employees to build new resources that are personal, social, and psychological in nature. This idea of an upward spiral is suggested in the literature. Hakanen, Perhoniemi, and Toppinen-Tanner (2008) found that job resources lead to work engagement which leads to personal initiative. It can be concluded that a work context with high job resources and low job demands will not only help employees to experience the workplace as meaningful but may well improve other aspects of service delivery.

The results of the three articles also indicate that personal resources significantly improved the prediction of psychological outcomes in various models following their addition to models with dimensions of job resources and job demands. There was a significant change in the coefficient of determination for satisfaction with life and positive affect after the addition of personal resources in the first 2 articles. In these two instances the changes were not only significant but large compared to the other significant findings in this regard. It is possible that the results may indicate the importance of appraisal in how work context variables relate to psychological outcomes as indicated by the results of the moderation effects. Fredrickson (2003) also indicated that appraisal may trigger a wide variety of responses which may improve the ways people cope with adversity. As personal resources play an important role in psychological outcomes (see Xanthopoulou et al., 2007), the test of moderation effects in this study has also demonstrated the same.

Test of moderation effects. At least 2 of the present articles have supported the notion that job resources are important for both work engagement and psychological well-being. Emotional intelligence and optimism have been shown to moderate the relationship between growth opportunities and dedication. Self-efficacy was shown to moderate the relationship between organisational support and negative affect; the relationship between overload and satisfaction with life; and the relationship between job insecurity and satisfaction with life.

The findings above suggest that in the presence of job resources such as growth opportunities, emotional intelligence on the one hand and optimism on the other will influence an employee's dedication to their work. In the presence of job demands such as job insecurity and overload, satisfaction with life have also been shown to be influenced by self-efficacy. Xanthopoulou et al. (2007) have indicated that psychological outcomes are actually meaningfully explained when personal resources are taken into account possibly as the outcome for the organisation is serious in terms of the employee's productivity. In these two instances, it is possible that as the level of growth opportunities increase in the work context, dedication will improve relative to emotional intelligence. Secondly, it is also possible to surmise that as the levels of job demands through overload and insecurity increase, satisfaction with life may decrease relative to challenges to the individual's self-efficacy. According to the Conservation of Resources theory employees seek to acquire, keep, and protect resources (Hobfoll, 1989). In the event that such resources are threatened or employees fail to acquire them, then stress may occur with the consequence of *health impairment*, turnover intention, and loss of productivity. It can be concluded that the cultivation of the necessary job resources and personal resources can be psychological capital that can improve the productivity of employees in the workplace.

Personal resources have been shown in other studies to lead to work-related flow. By their very nature, personal resources motivate the individual to assess the outcomes of their work (cf. Bakker, Demerouti, & Schaufeli, 2003) and as indicated in this study, they facilitate the acquisition of psychological outcomes. For government employees, the meaningful use of personal resources in a work environment characterised by job resources such as growth opportunities, may have their work goals aligned with the ethos of government for service delivery. Mindful of the fact that employees do not work in a vacuum, experiences shared with colleagues and supervisors may also create an atmosphere of belonging or relatedness, a cultivation of individual success in specific tasks (autonomy and competence). This is quite typical of the description given in the Self-Determination Theory by Ryan and Deci (2000). However, this description is also quite close to the description of personal resources and what they may achieve for employees. It is possible to conclude that work context and personal resources if taken together could also lead to the satisfaction of the need to succeed by employees. Most

importantly however is the evidence that when employees get feedback, collegial support, and coaching, this has implications for their work engagement (cf. Schaufeli & Bakker, 2004). Engaged employees are also known to develop personal initiative (see Hakanen et al., 2008). It can be concluded, based on the results of this study, that the presence of job resources and personal resources are important for psychological outcomes.

Recommendations

Employment in the public service work context requires skills such as social and emotional competency, self-efficacy and optimism as clients are diverse and have many different needs. Employees must have initiative, flexibility, motivation to achieve, empathy, self-esteem and confidence, self-control, and group management among fellow employees and the public that is served by them. Available literature (Fredrickson, 2003; Hakanen et al., 2008) clearly indicate the upward and gain spirals of work contexts that have job resources. Thus it would be recommended that in selecting future employees, assessments must tap the levels of personal resources of potential future employees as these have been shown to have implications for the employees' own future experience of the workplace. This may also be useful in the planning of interventions to cultivate such personal resources for those already in the employ of government.

Secondly, it would be recommended that employees should be given sufficient feedback from an appreciative inquiry perspective regarding their performance as this might fortify their personal resources and consequently behaviours in the workplace such as engagement, commitment and reduce turnover intention. Part of the feedback on work performance could be career-pathing to give employees a clear idea where they stand in the organisation thereby reducing insecurities about their jobs as well as giving information regarding opportunities for advancement.

Thirdly, Employee Wellness Programmes can also offer developmental workshops to employees to help them discover their personal resources as strengths. Specifically in the context of explanatory styles, workshops on conflict resolution could be facilitated to help employees know how they habitually assign meaning to events and how they react on these events. In this process alternative interpretations and foci can be

developed such as in solution focussed therapy, and/or with application of constructive coping styles – once understood how they assign meaning and causality to good and bad events and discover possibilities for choice.

The question for future studies in this area is whether the link between work context characteristics and personal resources and their influence on psychological outcomes describes a momentary and fluctuating experience or fixed traits. Although Luthans and Youssef (2007) assert that these experiences may lie along a continuum, there are specific expectations about the role of personal resources as mediators or moderators. In this study, an attempt was made to show the role of personal resources as possible moderators in a cross-sectional survey. Therefore cross-lagged panel studies may help explicate the role of personal resources in public service work contexts over a period of time in the relationship between job resources in particular, and psychological outcomes including possible upward spirals. Aspects of such studies may also include a qualitative assessment of what participants perceive as job resources and personal resources and these help them to achieve their goals.

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