

The relationship between job security, job embeddedness, work engagement and turnover intention within the mining sector

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COMMENTS

The following should be noted:

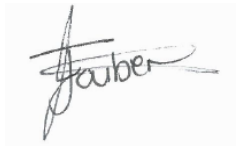
- The guidelines followed for the editorial style of this mini-dissertation are specified by the South African Journal of Industrial Psychology (SAJIP). Furthermore, the referencing style used in this mini-dissertation follows the format prescribed by the Publication Manual (7th ed.) of the American Psychological Association (APA). These applications are according to the policy of the Programme in Industrial Psychology of North-West University (Potchefstroom) to be used with the APA referencing style in all scientific documents as from January 1999.
- This mini-dissertation is submitted in the form of a research article.
- Additionally, the first chapter is a revised version of the submitted and approved research proposal and is presented in the present tense.
- The chapters each contain separate reference lists.

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Dr Melissa Jacobs
November 2021

AUTHORS' CONTRIBUTIONS AND DECLARATIONS

This research study was designed and carried out by two researchers at North-West University, Potchefstroom Campus. In the table below, the contributions of each researcher are indicated.

Ms J Joubert	MCom Industrial Psychology student; co-conceptualiser, responsible for the literature review, for conducting the research process, and for interpreting the research findings and data, as well as liable for the writing of the research proposal and dissertation.
Dr M Jacobs	Supervisor, co-conceptualiser and critical reviewer of the total research study.
Prof LT de Beer	Co-supervisor, statistician, co-conceptualiser and critical reviewer of the total research study.

Furthermore, with this statement, the author and co-author declare and confirm their roles in this research study. This declaration also indicates that all authors are in agreement that the appropriate format was used for the submission of this mini-dissertation at North-West University. All authors are also in agreement that the contents of this research study and any modified version thereof may be used and publicised by an author in peer-reviewed academic journals and/or presented at academic conferences.



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I **Ms Cecilia van der Walt** hereby declare that I took care of the **editing** of the mini-dissertation of **Ms Janet Joubert** titled *The relationship between job security, job embeddedness, work engagement and turnover intention within the mining sector.*

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Summary

Title: The relationship between job security, job embeddedness, work engagement and turnover intention within the mining sector.

Keywords: Job security, job embeddedness, work engagement, turnover intention, mining sector, South African employees, structural equation modelling.

The constructs *job security*, *job embeddedness*, *work engagement* and *turnover intention* are all very popular research constructs. Extensive research is available on all these constructs and even on the relations between some of these constructs. However, the research on the combination of all these constructs is very limited and especially within the South African industry. The current study focussed on the South African mining sector testing the dynamics in the relationships of job security, job embeddedness, work engagement and turnover intention that employees experience. The mining industry forms a vital part of the South African economy and one of the largest industries in South Africa. Therefore, it is very important to investigate how employees' job security, job embeddedness and work engagement are affected by uncertain economic times and how this impacts their turnover intention.

The objective of this research study was to investigate the relations between job security, job embeddedness, work engagement and turnover intention of employees in the mining sector. The research investigated how mining employees are affected by the economic uncertainty within the mining sector, by looking into their job security, job embeddedness, work engagement and turnover intention, as well as how work engagement mediates the relations between job security, job embeddedness and turnover intention. Hence the aim of this study was to gain a better understanding of the relations between these constructs and how they influence employees' levels of turnover intention.

A quantitative research approach was followed by using a cross-sectional design, which comprised office-bound employees within the mining sector ($n = 204$). Structural equation modelling was used to analyse the data and test the structural model. The results indicated that significant paths exist between all of the constructs except between job security and turnover intention, and job embeddedness and turnover intention. Furthermore, also other relations were found in the study,

such as the negative relation between job embeddedness and turnover intention and how work engagement has a mediating effect on the relation between job security and turnover intention. Lastly, the study found a serial indirect relation from job security to turnover intention through both work engagement and job embeddedness.

Finally, based on the results of the study, conclusions were drawn, the limitations of the study were discussed, and recommendations were made for practice and future research.

Opsomming

Onderwerp: The relationship between job security, job embeddedness, work engagement and turnover intention within the mining sector. (*Die verhouding tussen werksekuriteit, werkverskandsheid, werksbetrokkenheid en omkeringsvoorneme binne die mynbosektor.*)

Sleuteltermes: Werksekuriteit, netwerke van sosiale verhoudings, werksbetrokkenheid, omkeringsvoorneme / bedankingsvoorneme, mynbosektor, Suid-Afrikaanse werknemers, strukturele vergelykingsmodellering.

Die konstrukte *werksekuriteit, netwerke van sosiale verhoudings, werksbetrokkenheid en omkeringsvoorneme (bedankingsvoorneme)* is almal besonder gewilde navorsingskonstrukte. Uitgebreide navorsing is beskikbaar oor al hierdie konstrukte en selfs oor die verwantskappe tussen sommige van hierdie konstrukte. Die navorsing oor die kombinasie van al hierdie konstrukte is egter baie beperk en veral binne die Suid-Afrikaanse industrie. Die huidige studie het daarop gefokus om die werksekuriteit, netwerke van sosiale verhoudings, werksbetrokkenheid en omkeringsvoorneme wat werknemers in die Suid-Afrikaanse mynbosektor ervaar, te toets. Die mynbedryf is 'n belangrike deel van die Suid-Afrikaanse ekonomie en een van die grootste nywerhede in Suid-Afrika. Daarom is dit baie belangrik om ondersoek in te stel na hoe werknemers se werksekuriteit, werkverskandsheid en werksbetrokkenheid deur onseker ekonomiese tye geraak word en watter effek dit op omkeringsvoorneme het.

Die doelwit van hierdie navorsingstudie was om 'n beter begrip te verkry van die verband tussen hierdie konstrukte en hoedat dit die vlak van werknemers in die mynbedryf se omkeringsvoorneme beïnvloed. Die navorsing het ondersoek ingestel na hoe myn-werknemers deur die ekonomiese onsekerheid binne die mynbosektor geraak word, deur in te gaan op hul werksekuriteit, netwerke van sosiale verhoudings, werksbetrokkenheid en omkeringsvoorneme, asook op hoe werksbetrokkenheid die verhoudings tussen werksekerheid, netwerke van sosiale verhoudings en omkeringsvoorneme medieer. Daarom was die doel van hierdie studie om 'n beter begrip te verkry van die verbande tussen hierdie konstrukte en hoe dit werknemers se vlakke van omkeringsvoorneme beïnvloed.

'n Kwantitatiewe navorsingsbenadering is gevolg deur 'n deursnee-ontwerp te gebruik, wat uit kantoorgebonde werknemers binne die mynbosektor bestaan het ($n = 203$). Strukturele

vergelykingsmodellering is gebruik om die data te ontleed en die strukturele model te toets. Die resultate het aangedui dat daar beduidende verbande tussen al die konstrakte bestaan, behalwe tussen werksekerheid en omkeringsvoorneme, en netwerke van sosiale verhoudings en omkeringsvoorneme. Ander verbande is ook verder in die studie gevind, soos die negatiewe verband tussen netwerke van sosiale verhoudings en omkeringsvoorneme/bedankingsvoorneme en hoe werksbetrokkenheid 'n bemiddelende effek op die verband tussen werksekerheid en omkeringsvoorneme het. Laastens het die studie 'n indirekte verband gevind tussen werksekerheid en omkeringsvoorneme/bedankingsvoorneme deur beide werksbetrokkenheid en werkverbondenheid.

Ten slotte, gebaseer op die resultate van die studie, is gevolgtrekkings gemaak, die beperkings van die studie bespreek en aanbevelings vir die praktyk en toekomstige navorsing gemaak.

CHAPTER 1

INTRODUCTION

Introduction

The purpose of this mini-dissertation was to investigate the relations between job security, job embeddedness, work engagement and turnover intention within the mining sector, by testing a structural model. In this regard, the study focused on how each of the research constructs influenced one another and ultimately turnover intention.

Chapter 1 frames the problem statement, which describes the background of the study, followed by the prominent literature on the mining sector in recent years, specifically focussed on their job security, job embeddedness, work engagement and turnover intention. Furthermore, chapter 1 also outlines the theoretical models used in this study, namely the Job Demands-Resources (JD-R) model. Based on the problem statement, the research questions, research objectives and the research hypothesis were drafted. Lastly, this chapter also includes an overview of the chapters that this mini-dissertation comprises. Each of these chapters served a particular purpose.

1.1. Problem statement

Prior to presenting and discussing the problem statement, an overview is given of the background of developments in the research field that prompted the study.

1.1.1. Background information on the study

In recent years South Africa's economy has experienced a gradual weakening; this can ultimately be explained by a combination of different factors such as shortages in electricity and simultaneous price hikes, industrial disputes, slow growth globally, an absence of international competitiveness in manufacturing, and since 2012 a decrease in platinum, gold and coal prices (Bhorat et al., 2016). South Africa's economy had also struggled immensely to grow since the global financial crisis in 2008, which resulted in millions of job losses in 2009 alone (Rena & Msoni, 2017). After briefly analysing the sectoral composition, Bhorat et al. (2016) established that four sectors were expanding faster than the overall Gross Domestic Product (GDP). These sectors included financial and business services, wholesale and retail trade, construction and transport, storage, and communication. The remaining five sectors'

GDP had all declined, with the mining sector showing the most marked change (Bhorat et al., 2016). The mining sector now accounts for only 8% of the overall GDP in South Africa, whereas it once was the biggest contributor (Lieberink, 2018). In 2020 mining companies were again experiencing high pressure despite numerous cost reduction initiatives due to the COVID-19 pandemic (Ahmed, 2020). Some mines in South Africa have lost as much as 60% of their share-price in four weeks (Ahmed, 2020).

However, PricewaterhouseCoopers (2018) states that even though the South African mining industry did struggle in 2018 the financial performance of the mines did increase significantly on a global level from 2017. Even with this increased financial performance in 2018, mining jobs have decreased to the lowest since 2009 after widespread retrenchments in 2018 (Burkhardt, 2018a). Strike action regarding wages within the mining sector also poses a huge challenge for organisations (Burkhardt, 2018a), which lead to loss of productivity (Müller, 2018), resulting in financial losses of around R6 000 000 per day within certain mines (Khumalo, 2018) and possibly higher wage expenses, due to demands for wage increases for artisans, miners and mining officials (Burkhardt, 2018b). As mining companies are making less profit due to several economic factors and added to their employees demanding higher wages, retrenchments were often being implemented to deal with these constraints in South Africa (Naki, 2018). Hence it can be expected that employees within this industry could experience lower levels of job security.

Job security is described as the perceived state in which an employee is secure within their job and does not fear losing their job or any anticipated job features (Greenhalg & Rosenblatt, 1984; Valletta, 1999). Sverke et al. (2002) point out that job security is important as it largely influences employees' health and organisational commitment. Employees' perceived job security is affected by certain internal factors such as leadership styles (Yousef, 1998), trust (Robinson, 1996), organisational identification (Feather & Rauter, 2004) and external factors such as the current economy (Valletta, 1999). Job security can thus be described as a job resource within the job demands-resources (JD-R) model as every occupational factor can be divided into two general categories, these being job demands and job resources (Bakker & Demerouti, 2007; Breevaart & Bakker, 2018).

The job demands-resources (JD-R) model is the supporting theory behind the proposed research model for this study as it aims to integrate two separate research customs;

motivational research and research that is based on stress (Demerouti & Bakker, 2011). As the lack of job security is quite prevalent within the mining sector several studies have been conducted on this phenomenon, which all indicated that low levels of job security can lead to high turnover intention and burnout for employees (De Cuyper et al., 2012; Jiang, & Probst, 2017). Lawrence and Kacmar (2017) assert that lower levels of job security have a stronger impact on employees who are embedded in their jobs than those who are not, causing high levels of emotional exhaustion, leading to higher levels of turnover intention.

Job embeddedness can be described as a construct that combines different factors that discourage an employee from leaving or intending to leave their current job (Yao et al., 2004). Three crucial aspects are associated with job embeddedness, namely: (1) the *links* people have to activities and other people; (2) the *fit* between people's jobs and communities with the other facets of their lives; and (3) how easily the link between these aspects can be broken or the *sacrifices* that would be made when breaking these links (Mitchell et al., 2001). Mitchell et al. (2001) named these aspects *links*, *fit* and *sacrifice* and stated that all three aspects are important both at work and in employees' personal lives. Within this study, the focus will, however, be on on-the-job embeddedness as it has been found to correlate with turnover intention (Mitchell et al., 2001). Job embeddedness will also be considered a job resource within this study as job resources instigate a motivational process and build enthusiasm for the employee to invest in their job and organisation (Breevaart & Bakker, 2018). Breevaart and Bakker (2018) point out that it is known that job resources contribute to higher levels of work engagement.

Bakker et al. (2008) defines work engagement as “a positive, fulfilling, affective-motivational state of work-related well-being that can be seen as the antipode of job burnout” (p. 187-188) - employees with high levels of work engagement will have high energy levels, are absorbed in their job and will come across as being passionate about their job. Therefore, work engagement involves *energy*, *involvement*, and *efficacy* (Bakker et al., 2008). Work engagement has most often been used as a construct in studies on burnout (Bakker et al., 2008), but has also been used in a wide variety of other studies due to the fact that this construct creates the ability for employees of an organisation to create their own resources due to the motivational process of the JD-R model (Caesens et al., 2016). Caesens et al. (2016) found that work engagement was connected to several positive outcomes for both the employee and the organisation, one of these positive outcomes being lower levels of turnover

intention amongst engaged employees. Engaged employees were proven to harbour more positive sentiments towards their job (Bakker & Demerouti, 2008) giving the understanding that work engagement has shown to have a positive relationship with job embeddedness. This finding supports the evidence that higher work engagement lowers employees' turnover intention because higher job embeddedness also lowers turnover intention.

Turnover intention is the subjective likelihood that an employee will make a change in his or her current employment situation (Sousa-Poza & Henneberger, 2004), i.e. the intention to leave their organisation. High turnover in an organisation can be detrimental to the organisations' productivity as employees with turnover intentions tend to display reduced service and reduce organisational effectivity (Karatepe & Ngeche, 2012). Other than affecting an organisation's productivity, turnover intention can cost the organisation a huge amount of money as new employees need to be recruited and selected, trained in their new job and whilst these things are taking place the organisation experiences an operational disturbance (Staw, 1980). Therefore, organisations should focus on keeping turnover intention levels as low as possible to avoid unnecessary losses in productivity and to keep the cost of additional recruiting and training low (Abellson & Baysinger, 1984; Yang et al., 2019). Coetzee and Schreuder (2010) proposed that turnover intention is also largely influenced by external factors such as the competition for talent, the global economy and with that the availability of alternative job opportunities. However, Halbesleben and Wheeler (2008) noted that job embeddedness and work engagement has become popular concepts that promote lower turnover intention.

According to Mitchell et al. (2001) employees that experience low levels of job embeddedness and work engagement will be much more likely to have a higher intention to leave the organisation and follow through with their decision. Supporting this finding, Takawira et al. (2014) found that a significant relationship exists between job embeddedness, work engagement and turnover intention and that high levels of embeddedness and engagement significantly lower employees' turnover intention. However, Takawira et al.'s (2014) results indicated that job embeddedness was the stronger indicator of lowered turnover intention compared to work engagement. Although several studies have been conducted indicating that a lack of job security promotes turnover intention (Lee & Jeong, 2017; Laine & Van Der Heijden, 2009), limited research has been done on the effects of job security on turnover intention, also limited research on the relation between job security, job

embeddedness, work engagement and turnover intent; thus creating an opportunity for this study.

Summarily, based on this problem statement above, it can be seen that this study endeavours to fill two gaps in research. Firstly, to investigate the relation between job security, job embeddedness, work engagement and turnover intention, since limited research has been conducted on these constructs combined. Secondly, to determine whether an indirect relation exists between job security, job embeddedness and turnover intention, through work engagement as a potential mediator.

1.2. Research questions

- How is job security, job embeddedness, work engagement and turnover intention conceptualised in the literature?
- What is the relation between job security, job embeddedness, work engagement, and turnover intention?
- What are the possible indirect relations between job security, job embeddedness and turnover intention, through work engagement?
- Does work engagement mediate the relationship between job security, job embeddedness and turnover intention?
- What possible recommendations can be made for future research and practice?

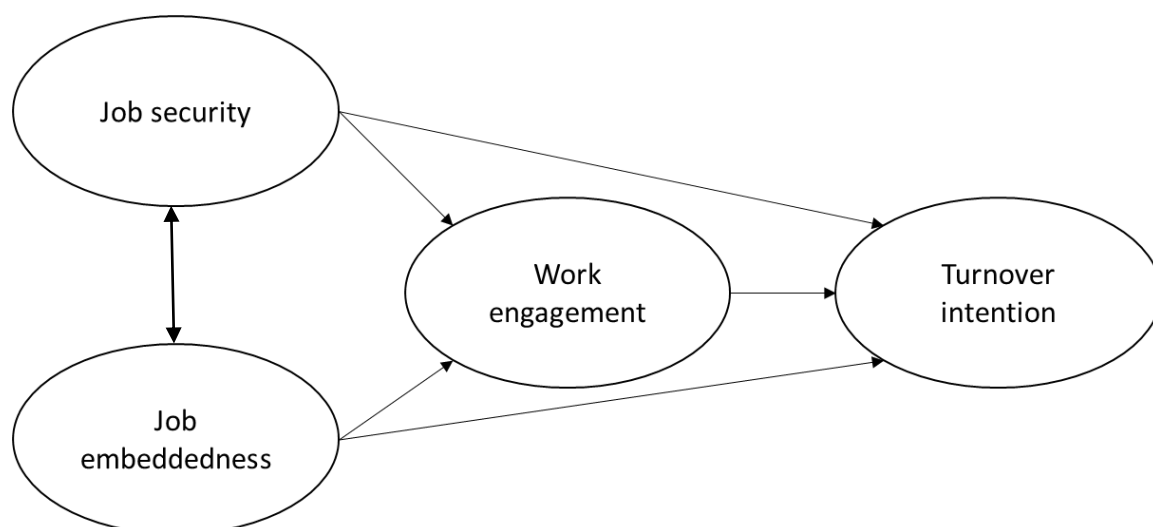


Figure 1: The Conceptual Research Model

1.3. Expected contributions of the study

Limited to no research has been conducted on the relation between job security, job embeddedness, work engagement and turnover intention. This research study could contribute to the organisation and the industrial organisational literature.

1.3.2. Contribution to the organisation

Organisations will benefit from the knowledge concerning employees' experiences of job security, job embeddedness and work engagement and the subsequent impact this has on the chances of them leaving the organisation. For management, the driving factors of these positive factors can shed light on how to facilitate the strengthening of these factors. Furthermore, the organisation can investigate these aspects in the organisation and create interventions to assist these employees with improving those aspects of their jobs, if necessary. This holds the potential of providing the organisation with cost-savings but also assist employees, impacting the triple bottom line.

1.3.3. Contribution to the literature

This study will contribute to the limited research conducted on the relation between job security, job embeddedness, work engagement and turnover intention within the mining industry. Industrial psychology focuses on people's behaviour and emotions at work and how certain factors, such as the economic, social and political state, impacts those behaviours and emotions (Bisen & Priya, 2010). Hence it becomes the industrial psychologist's role to understand these institutions' work environment along with its stakeholders, and what could cause employees to experience or lack positive emotions at work.

1.4. Research objectives

The research objectives are divided into a general objective and specific objectives.

1.4.1. General objective

The general objective of this research is to investigate the relations between job security, job embeddedness, work engagement and turnover intention of employees of the mining sector.

1.4.2 Specific objectives

The specific objectives of the current study are:

- To conceptualise job security, job embeddedness, work engagement, and turnover intention according to the literature.
- To determine the relation between job security, job embeddedness, work engagement, and turnover intention.
- To determine what the indirect relations between job security, job embeddedness and turnover intention are, through work engagement.
- To determine whether work engagement mediates the relation between job security, job embeddedness and turnover intention?
- To make recommendations for future research and practice.

1.5. Research hypotheses

H1a: A positive relation exists between job security and job embeddedness.

H1b: A positive relation exists between job security and work engagement.

H1c: A positive relation exists between job embeddedness and work engagement.

H2: A negative relation exists between job security and turnover intention.

H3: A negative relation exists between job embeddedness and turnover intention.

H4: A negative relation exists between work engagement and turnover intention.

H5a: Work engagement mediates the relation between job security and turnover intention.

H5b: Work engagement mediates the relation between job embeddedness and turnover intention.

1.6. Research design

1.6.1. Research approach

A quantitative research approach is implemented in this study. Quantitative research is described by Struwig and Stead (2013) as a conclusive research method where the specified hypotheses are tested in a large representative sample. Quantitative research is suitable for this current study as it contains structured data collection methods that can objectively

generalise the results obtained from this study (Struwig & Stead, 2013). The study made use of a cross-sectional design in order to meet the objectives of the study. A cross-sectional design obtains data from the participants on only one single occasion (De Vos et al., 2011). This research design is simple and inexpensive to conduct (De Vos et al., 2011).

1.6.2. Research method

The research method for this study consists of two phases, namely a literature review and an empirical study. The results obtained from the study will be presented in the form of a research article.

1.6.3. Literature review

A thorough and scientific literature review regarding job security, job embeddedness, work engagement, and turnover intention was conducted. Several research engines were used, namely Google Scholar, EbscoHost, SAePublications, Emerald, Science Direct, PsycArticles, and JSTOR. As part of the literature review, the following journals were used: *South African Journal of Economic and Management Sciences*, *South African Journal of Industrial Psychology*, *South African Journal of Human Resources Management*, *Journal of Applied Psychology*, *Journal of Management*, *Journal of Managerial Psychology*, *Journal of Occupational Health Psychology*, *Research in Organizational Behavior*, *Journal of Southern African Studies*, *Academy of Management Journal*, *Personnel Psychology*, *The International Journal of Human Resource Management*, *Journal of Organizational Behaviour*, *Journal of Vocational Behavior*, *Journal of Psychology in Africa*, *Psychological Bulletin*, *Journal of Organizational Behavior*, *Current Directions in Psychological Science*, *Work and Stress*, *Public Personnel Management*, *The Academy of Management Review*, *Growth Traps and Opportunities for Six African Economies*, *Journal of Business Ethics*, *Horizons of Psychology*, *Journal of Hospitality Marketing & Management*, *Business Ethics Quarterly*, *An International Journal* etc.

1.6.4. Research participants

A convenience sampling method is followed to gather the data for this study among the participants (approximately $n=300$), participants included above-ground employees within

the mining industry (Özdemir et al., 2011). Participation in this study is voluntary; hence participation is not mandatory for any participant. For the sample, this study selected to include above-ground employees within the mining sector that vary in terms of demographics such as gender, age, and ethnicity. However, participants are required to be at least 18 years old or above and have an English proficiency of grade 12 or higher to participate.

1.6.5. Measuring instrument(s)

A **biographical questionnaire** is included to determine each participant's biographical information such as gender, ethnicity, age, language, level of education and organisational tenure (duration of employment) in the organisation. The biographical information is collected to present the basic sample composition.

Job security is measured with the Barnard (2014) Job Insecurity Scale (JIS) in this study. Positive and negative items were developed to add in the sub-dimensions (affective and cognitive) separately (Barnard, 2014). However, to measure job security, only the positive items are incorporated into this study, in order to only measure job security. The scale includes nine positively phrased items (e.g. "I am very sure that I will be able to keep my job") that are assessed on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Barnard's (2014) JIS has a Cronbach's alpha coefficient of 0.86 for job security (Barnard, 2014).

Job embeddedness consists of two embeddedness components, namely on-the-job embeddedness and off-the-job embeddedness (Mitchell et al., 2001). However, in this study the focus is on on-the-job embeddedness only. By using The Job Embeddedness Scale (JES), the 23-item self-report inventory was adjusted to only reflect the three on-the-job embeddedness dimensions. These dimensions are organisational *fit* (e.g. "My job utilizes my skills and talents well") organisational *links* (e.g. "My closest friends are in the organization") and organisational *sacrifices* (e.g. "I would sacrifice a lot if I left this job"). The items on this scale are assessed on a 6-point Likert-type scale. This scale has a Cronbach's alpha coefficient of 0.91 for job embeddedness (Van Dyk et al., 2013).

Work engagement is measured by applying The Utrecht Work Engagement scale (UWES-9) (Schaufeli & Bakker, 2004). This scale measures the three dimensions of work engagement

(*vigour*, *dedication*, and *absorption*) and consists of 9 items. The three dimensions of work engagement are measured as follows: vigour – 3 items (e.g. “When I get up in the morning, I feel like going to class/work”); dedication – 3 items (e.g. “I’m enthusiastic about my study/job”) and absorption – 3 items (e.g. “When I’m studying/working, I forget everything around me”). The items on this scale are assessed on a 7-point Likert-type scale that ranges from 0 (never) to 7 (every day). The UWES obtained a Cronbach’s alpha coefficient of 0.89 for vigour, 0.89 for the dedication and 0.83 for absorption and can thus be seen as reliable (Huhtala et al., 2015).

Turnover intention is measured using the Sjöberg and Sverke (2000) Turnover Intention Scale which is a Likert-type scale that consists of three items (Sjöberg & Sverke, 2000). This scale measures the likeliness of the respondents to leave the organisation (e.g. “I feel that I could leave this job”). The items on this scale are assessed on a 5-point Likert-type scale that ranges from 1 (strongly disagree) to 5 (strongly agree). According to Sjöberg and Sverke (2000) the Cronbach’s alpha coefficient for turnover intention is 0.83.

1.6.6. Research procedure

Firstly, ethical approval is sought from North-West University’s Faculty of Economic and Management Sciences’ Ethics Committee. Once the committee proved the application, permission for data collection is obtained from the target mining organisations. This is done by arranging virtual appointments with the HR executives which was subsequently followed by appointments with the relevant executive committee members of the organisations. During these appointments, the overall objective of the study as well as the procedure that would be followed is explained. An internal research facilitator is also identified and the entire research process and overall objective of the study is explained to these individuals separately. The internal research facilitators are required to be someone who has access to most employees but will be impartial. The assistant of the HR executive is ideal, based on his or her willingness to assist. Following this is the informed consent process that specifically focused on explaining to the participants the overall objective of the study and also that participation is entirely voluntary. This is done by sharing all relevant information and the informed consent information via emails along with the link to the survey. The first page of the online survey also contains all the relevant information, which included informed consent as well. The researcher requests that the internal research facilitator will send the above-mentioned

email to all employees who work above ground. Participants have approximately two weeks from delivery to then complete the survey. Only the researcher has access to the submitted online surveys, and all surveys are kept confidential. The researcher does not know who completed the survey and who did not, which ensured that participation was completely voluntary. The internal research facilitator in the organisation then receives an email one week before the closing date of the online survey, which serves as a reminder of the closing date for the survey of the research project to be submitted. The internal research facilitator is requested to communicate the reminder email to all possible participants. The data collected for this study is captured in a spreadsheet after which it is statistically analysed.

1.6.7. Statistical analysis

The statistical analysis for the study is conducted using Mplus 8.6 (Muthén & Muthén, 2021). Firstly, structural equation modelling (SEM) with confirmatory factor analysis is used with a view to test the measurement model (Brown, 2015). SEM is used to assess several relations simultaneously and provided various fit indices to determine how accurately the model describes the proposed relations between the constructs (Weston & Gore, 2006). The following fit indices are considered: the comparative fit index (CFI; ≥ 0.90), Tucker-Lewis index (TLI; ≥ 0.90) and the root mean square error of approximation (RMSEA; ≤ 0.08) (Van de Schoot, Lugtig & Hox, 2012). The confirmatory factor analysis is estimated to determine the factor structure of the examined variables from the different measuring instruments (Blunch, 2008). To determine whether the internal consistency of different constructs is considered acceptable, Cronbach's alpha reliability coefficient (α) is calculated and each construct should have a value of 0.70 and above. Furthermore, the relationships between variables are explored by using the Pearson Product-moment correlation matrix. This is interpreted based on Cohen's (1992) guidelines, which state that values of 0.30 and above can be considered to have a medium practical effect, and values of 0.50 and above can be considered to have a large practical effect.

Hereinafter, structural paths are added to the measurement model so that the structural model is created; by doing this the anticipated relationships between the constructs as stated in the hypothesis are specified among the constructs as regressions. To support or reject the hypotheses the statistical significance ($p < 0.05$), size and direction of the standardised estimates are considered. Lastly, to test the possible indirect effects in the proposed model

bootstrap resampling is utilised with the resampling option (10 000 replications in this study) to allow the consideration of the significance of the indirect effects by also taking into account the 95% confidence intervals of the parameters (Hayes, 2017).

1.6.8. Ethical considerations

For a research study to be appropriate, fair, ethical and professional, certain ethical considerations need to be followed (Foxcroft & Roodt, 2013). Therefore, the first step to ensure that the research is done ethically correct, informed consent is obtained from all participants (De Vos et al., 2011). Informed consent stipulates that all the participants agree to participate in the study and that all participants are aware that participation is voluntary and that they can withdraw from the study at any point in time (De Vos et al., 2011). The informed consent form also explained that the data collected is used for research purposes only. Furthermore, the researcher ensured that the study would by no means cause any harm to any participant and that all participants are treated with respect at all times during the research (De Vos et al., 2011). Lastly, the participant's information is kept strictly confidential at all times (De Vos et al., 2011). To ensure the confidentiality of the participants, names are not required in the online survey. Once the data is collected, it is securely stored on the NWU Potchefstroom campus in the custody of the supervisor. The research proceedings only commenced after the research ethics committee of North West University's faculty of economic and management sciences had reviewed and approved the research proposal.

1.7. Chapter division

The chapters in this mini dissertation are presented as follows:

Chapter 1: Introduction.

Chapter 2: Research article.

Chapter 3: Conclusions, limitations and recommendations.

1.8. Chapter Summary

This chapter presented the problem statement, research questions and research objectives. This chapter also explained the research design, measuring instruments and statistical analysis that were used, followed by a brief overview of the following chapters that outline the mini dissertation.

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CHAPTER 2
RESEARCH ARTICLE

The relationship between job security, job embeddedness, work engagement and turnover intention within the mining sector

ABSTRACT

Orientation: Job security within mining has become an increasingly popular topic of study over the past decade as the mining sector in South Africa has faced countless challenges. However, this study combines job security with job embeddedness and work engagement to establish what effect it has on turnover intention.

Research Purpose: The purpose of this research is to investigate the relations between job security, job embeddedness, work engagement and turnover intention within the mining sector by applying a structural model.

Motivation for the study: To assist individuals and organisations in gaining insight into how secure, embedded and engaged employees in the mining sector are and what the effects of job security, job embeddedness and work engagement are on one another and on the turnover intention that the individual may experience.

Research design, approach and method: A quantitative research approach with a cross-sectional design was implemented in this study. The sample consisted of ($N=203$) office-bound employees in the South African mining sector. Structural equation modelling was applied to test the proposed model, and product-moment correlation was applied to establish the relation between variables.

Main findings: The results indicate that job security and job embeddedness had a positive relation with work engagement. Job security did not indicate a positive relation with turnover intention and job embeddedness did not have a significant relation with turnover intention. Furthermore, work engagement indicated a negative relation to turnover intention. The results also indicated that work engagement mediates the relation between both job security and turnover intention, and job embeddedness and turnover intention. Lastly, the results indicated a serial mediation effect between job security and turnover intention, through both job embeddedness and work engagement.

Practical implications: Evidence suggests that when organisations understand what leads to employees demonstrating high levels of turnover intention (such as low levels of job security, job embeddedness and work engagement) they can put strategies in place to mitigate the risk.

Turnover intention can affect an organisation's profitability, recruitment strategies and training costs negatively, as it ultimately leads to a higher turnover of employees.

Contribution of the study: This study contributed to a deeper insight into how positive emotions at and towards work (job security and job embeddedness) contribute towards employees' productivity and performance (work engagement) and their inclination towards turnover intention; thus assisting organisations in making strategic decisions to improve the positive emotions with a view to help employees flourish and minimise the risk of turnover.

Keywords: Job security, job embeddedness, work engagement, turnover intention, mining sector

Introduction

A large part of the South African economic activity has focussed on mining activities and supplies since the late 1800s (Minerals Council SA, 2021). Mining had a huge impact on the country, so much so that its stock exchange in Johannesburg was established in 1887, merely a few years after the first diamonds were discovered (Minerals Council SA, 2021). South Africa's political, social, and economic practices have been highly influenced by mining (Minerals Council SA, 2021). This is because, for more than a century, this sector has been one of the pillars of the South African economy (Minerals Council SA, 2021).

The mining industry has always contributed to the country's Gross Domestic Production (GDP) (Arnoldi, 2019), with the highest contribution being 21% in the 1980s (StatsSA, 2017) dropping since to a low of about 4% in 2020 (Trading Economics, 2020). Furthermore, the industry's contribution has seen a gradual decline for several years (Casey, 2019a). This could be explained by the production levels declining annually with 2019's production being 1,3% less than 2018's, which in turn was 2,1% lower than 2017's (African Development Bank Group, 2020; Stats SA, 2020a). The decline in production levels within the mining sector originated from numerous factors, including the decline in the global demand for platinum and other minerals, how the mining industry is structured in South Africa and the repercussions of the disruption of labour relations at the Marikana mine (Turok, 2013). Moreover, the rise in electricity prices has also become a threat within the mining sector and the Minerals Council SA has warned that further increases in the prices could have a detrimental impact on the mining industry (African Development Bank Group, 2020; Seccombe, 2020). In the end, it is the employees that will suffer as South Africa's Minerals Council has stated that more than 200 000 employees in the mining industry could be threatened (Casey, 2019b).

The outbreak of the COVID-19 epidemic has led to the loss of more than 600 thousand jobs in South Africa (StatsSA, 2020b). President Ramaphosa imposed a lockdown in South Africa in 2020, due to the COVID-19 pandemic and the lockdown measures, businesses were forced to implement numerous strategies to comply with the lockdown restrictions and lower their costs (Kamer, 2020). Kamer (2020) explains that these measures included laying off employees and decreasing employees' working hours. South Africa's mining industry might

be facing major job losses shortly as a result of the extended lockdown measures in an effort to curb the spread of the coronavirus (Bloomberg, 2020). The extended lockdown forced mines to largely scale down on specifically deep-level mining, production of gold, platinum, chrome and manganese. Consequently, mines have mainly had to focus on maintenance operations for the duration of the lockdown period (Fasken, 2020). With the mining industry being less profitable than before, due to numerous economic factors, including the latest being the nationwide lockdown regulations, retrenchments are often being implemented to deal with these constraints in South Africa (Naki, 2018). Hence it can be expected that employees in this industry could experience lower levels of job security. However, the mining industry has remained resilient throughout this time. This can be ascribed to the commodity prices that have remained high for the most part specifically the platinum and ore prices (Khumalo, 2021; Zwane, 2021). The mining industry has surprisingly shown to be one of the most resilient sectors in South Africa during the COVID-19 pandemic and has delivered record financial results during this period (Khumalo, 2021; Zwane, 2021). The industry's record performance has also contributed to the strengthening of the rand and thus led to record rand prices for gold, platinum and ore, which led to outstanding financial performance in this sector (Khumalo, 2021; Zwane, 2021).

During times of high economic constraint, due to a global financial crisis, employees experience changes in their level of job security (Galvin & Young, 2017). Employees feel less secure in their jobs when the experience of losing jobs is perceived as being a common phenomenon (Galvin & Young, 2017). Clark et al. (2010) point out that this can be caused by the notion that bad news for other people makes people feel more afraid for themselves. This currently is relevant in South Africa as the global pandemic has increased the national unemployment rate and has led to more employees feeling less secure in their current jobs (Alwani, 2020). Many businesses had to close their doors due to the impact of COVID-19, and others – such as in the mining sector – have had to reduce their daily headcount and restructure to meet healthcare restrictions (Alwani, 2020). This ultimately can lead to employees fearing the loss of their jobs or job benefits; thus linking to lower levels of job security (Alwani, 2020).

Moreover, when employees feel less secure in their jobs, they may engage in more proactive behaviours to show their worth to the organisation and through that be more embedded and engaged within their organisations and jobs (Bedi et al., 2016; Shoss, 2017). However, all

employees react differently to unpredictable times, and some employees can also experience turnover intention during less secure times within their job (Yang et al., 2019). For this reason organisations need to understand what their employees are feeling so that they can respond appropriately to each situation (Yang et al, 2019).

Literature review

Job demands-resources (JD-R) theory

Both job security and job embeddedness are job resources within the job demands-resources (JD-R) model (Bakker, 2019). More specifically all occupational factors can be divided into two categories, namely job demands and job resources (Bakker & Demerouti, 2007; Breevaart & Bakker, 2018). Job resources include organisational, physical, psychological, and social aspects of a job that may decrease job demands (Schaufeli & Bakker, 2004a). Job resources lead to higher work engagement in employees and lower fatigue. Job resources can thus be seen as motivational antecedents (Bakker, 2019). Alternatively, significant life events such as the COVID-19 pandemic or family changes could disrupt the positive effect of job resources and compromise the employee's functioning at work (Bakker et al., 2019).

The supporting theory of this study is based on the JD-R model as it combines two opposite research customs; research based on stress and motivational research (Demerouti & Bakker, 2011). Job security is quite rare within the mining sector; therefore several studies have been conducted on this phenomenon, indicating that low levels of job security can pose the risk of leading to employees experiencing high levels of turnover intention (De Cuyper et al., 2012; Jiang, & Probst, 2017). Furthermore, the absence of job security has more adverse effects on employees who are highly embedded within their jobs or organisations than those that are not, this leads to these employees experiencing heightened levels of emotional exhaustion during insecure times, which leads to higher levels of turnover intention (Lawrence & Kacmar, 2017).

Job security

The construct *job security* can be and has been used in a variety of ways (Wyrwa, 2019). This can pose a challenge for research to be conducted on this topic, since research requires a clear conceptualisation of the construct (Wyrwa, 2019). Job security moves on a fluent continuum, on which employees move from feeling very secure in their job to not feeling secure at all when their jobs may become threatened (Wyrwa, 2019).

Job security is defined as the perceived state in which an employee is secure within their job and does not fear to lose their job or any anticipated job features (Lixin, 2017; Valletta, 1999; Greenhalg & Rosenblatt, 1984). A very important aspect of the definition is that job security is subjective (De Witte, 1999). Due to the subjective nature of job security two employees in the same situation may experience vastly different levels of job security. Another aspect of job security is that it is future-focused, which highlights the prediction of an anticipated loss (Boswell et al., 2014). Job security is only one aspect of a job. However, it is one of the most important aspects and is highly influenced by what happens to other employees (Clark et al., 2010). Other aspects of perceived job security include feelings of guilt that employees who “survived” recent layoffs experience and intention to leave their current job; had the labour market conditions been more favourable (Clark et al., 2010). Various studies have also indicated that the lack of job security can negatively affect employees’ wellbeing, physical health, attitude towards work and ultimately their productivity (De Witte et al., 2016; Niessen & Jimmieon, 2016). Shoss (2017) maintains that job security and the lack thereof has become an increasingly popular research and discussion topic due to the changes in technology, politics, and the economy over recent years. Job security is an extremely complex phenomenon and does not only affect employees at work but can also leak into the employee’s personal life, as it relates to the employee’s subjective inability to keep their job when it is under possible threat (De Cuyper et al., 2008). Moreover, job security does not only affect the employee, but also the employer, as employees who are experiencing lower levels of job security are more likely to have turnover intention, and as a result feel less embedded in their current jobs (Staufenbiel & König, 2010; De Witte et al, 2016).

Job embeddedness

Job embeddedness is a combined construct consisting of different employment components that represent a type of pressure that prevents the employee from leaving or intending to leave their current job (Yao et al., 2004). Job embeddedness comprises three components, namely: (1) the *links* people have to activities and other people in their organisation; (2) the *fit* between people's jobs and communities with the other facets of their lives; and (3) how easily the link between these components can be broken or the *sacrifice* that would have to be made should the employee chooses to leave their current employment (Mitchell et al., 2001). Mitchell et al. (2001) dubbed these aspects *links*, *fit* and *sacrifice* and stated that all three these aspects are important both at work and in employees' personal lives. More specifically links are characterised by the connections individuals have to their colleagues. The fit of an individual's experiences is measured by the extent to which the employee feels that they are compatible with or "belong" in the organisation. Lastly, the sacrifices refer to what the individual stands to lose should they choose to leave the organisation (Mitchell et al., 2001). Job embeddedness consists of both "on-the-job embeddedness" and "off-the-job embeddedness". However, this study will only focus on "on-the-job embeddedness" as it has shown to be a more accurate predictor of an employee's attitude and actions towards their job (Jiang et al., 2012; Allen, 2006).

Work engagement

Work engagement is the positive mental state of well-being concerning the work that an employee is performing and the psychological attachment to their performance in their job (Christian et al., 2011; Bakker et al., 2008; Schaufeli et al., 2002). Work engagement is specified by vigour, dedication and absorption (Bakker, et al., 2008). Vigour is the energy that the employee possesses to be able to do their work; dedication refers to how involved the employee is in their work; and lastly, absorption means being fully engrossed in their work (Bakker, et al., 2008). According to research, it is highly important for employees to re-energise with off-job activities after a day of engaging work, to remain energised and engaged on a day-to-day basis (Breevart et al., 2020). Research has shown that employees who are engaged in their work, will naturally be more embedded in their jobs and as a result, feel more secure in their current employment as well (Burrows et al., 2021; Yilmaz et al., 2015). However, with the "New Normal" the world of work is facing, office-bound

employees are requested to work remotely where possible, which could complicate employees' ability to re-energise with off-job activities as work and non-work life has become very intertwined (Offer, 2014). Moreover, research has found that employees who feel that their family-work life is intertwined are more likely to transmit family stressors to their work-life, distracting these employees, causing them to be less engaged in their work (Offer, 2014).

Research has indicated that employees who are committed to or embedded in their job or organisation, will be more proactive in their jobs when facing challenging situations such as low job security (Sonnetag, 2003). Proactive work behaviour is strongly linked to work engagement (Sonnetag, 2003), and “negative” events such as feeling less secure in one's job, will provide more energy to perform in the job when employees are embedded (Lebel, 2017; Sonnetag and Starzyk, 2015). Moreover, when embedded employees feel less secure in their job, they may show more dedication towards their job to perform better so as to improve the situation (Fay & Sonnetag, 2002; Sonnetag & Starzyk, 2015; Strauss & Parker, 2018).

The lack of job security can lead to employees feeling that they are powerless and have no control over their work situation (Vander Elst et al., 2011). Feeling out of control and powerless both lowered employees' level of work engagement (De Spiegelaere et al., 2014). Lastly, job security has been found to have a positive relation with the three aspects of work engagement, namely vigour, dedication, and absorption (Mauno et al., 2007).

Work engagement links with an employees' attitude and their intentions (Saks, 2006), this leads to the belief that the likelihood of employees engaged in their jobs being more embedded as well, and consequently harbour lower turnover intentions (Schaufeli & Bakker, 2004a). Furthermore, research has found that work engagement has a positive effect on overall employee health and satisfaction and stands a lower chance of developing turnover intention (Van den Berg et al., 2013; Schaufeli & Bakker, 2004a).

Turnover intention

Turnover intention is defined as the subjective possibility that an employee may intend to leave their current employment situation. This can be for another job or simply non-

employment (Al-Jabari & Ghazawi, 2019; Sousa-Poza & Henneberger, 2004). Turnover intention can lead to employees displaying counterproductive work behaviour, which is destructive actions that are harmful to the organisation's productivity (Wang et al., 2017). Discussions on the topic *turnover intention* have grown substantially in the literature and turnover intention has shown to be an accurate predictor of actual behaviours (Fishbein & Ajzen, 1977). Having knowledge of turnover intention within organisations can help them to proactively manage and possibly stop the sequential actions of these employees (Cohen, Blake, & Goodman, 2016). Furthermore, high levels of turnover in organisations make it difficult to be competitive and optimally profitable, as it increases the costs associated with turnover, such as recruitment and training costs (Craig, 2015; Grzenda & Buczyński, 2015; Adkins, 2015). Job security, job embeddedness and work engagement are all linked, and when present, it leads to positive work outcomes for both the employee and employer. However, as mentioned earlier, during uncertain and volatile times, such as these that we currently experience, employees may feel less of these positive emotions towards their work and have a higher intention to leave their current job (Baas, 2018).

The relation between job security and job embeddedness, and work engagement and turnover intention

De Spiegelaere et al. (2014) found that the lack of job security affects work engagement negatively. The lack of job security can thus be seen as a job stressor, that can hinder an employee's performance and with that their work engagement as well (Asfaw & Chang, 2019). This is because job security is a job resource, whereas the lack of job security (job insecurity) is a job demand (Asfaw & Chang, 2019). Research has also found that embedded employees will be less likely to be emotionally affected negatively by the lack of job security than less embedded employees (Rafiq et al., 2019). Moreover, job security can lead to employees experiencing higher levels of work engagement as they receive energy to perform at their job from this job resource (Breevaart & Bakker, 2018). Research indicated that job embeddedness has a strong link with employee retention, and it can also increase an employee's level of work engagement (Nielsen & Daniels, 2012). Job embeddedness improves employee relationships with their co-workers and managers (De Waal & Pienaar, 2013). Embedded employees are more involved with and invested in the people and the work that the organisation does; they fit in well with their co-workers and the job that they are appointed to do, they also believe that they will sacrifice a lot by leaving the organisation

(Zhao & Liu, 2010). On the other hand, less embedded employees may spend a large amount of time having turnover intention and pursuing possible job alternatives. This can lead to lower concentration and dedication, leading to low levels of job embeddedness (Kilburn & Kilburn, 2008).

Based on the findings reported above, *Hypotheses 1a, 1b and 1c* can be formulated as follows:

H1a: A positive relation exists between job security and job embeddedness.

H1b: A positive relation exists between job security and work engagement.

H1c: A negative relation exists between job security and turnover intention.

The relation between job embeddedness and work engagement and turnover intention

Employees that are highly embedded have been shown to be less affected by negative events (Burton et al., 2010). This leads to the assumption that embedded employees will therefore most likely maintain their level of job security, also during times of uncertainty . Furthermore, the presence of job embeddedness during times when employees experience low levels of job security has been shown to motivate employees to “show their worth” to preserve their job; thus also increasing their work engagement since they are more innovative at work (Staufenbiel & König, 2010). Several research studies have also shown that embedded employees are less likely to harbour turnover intention (Eberly et al., 2009; Lee et al., 2004; Mitchell et al, 2001). A recent study in the South African logistics industry has also indicated that job embeddedness and work engagement have a positive correlation and that job embeddedness correlates negatively with turnover intention (Engelbrecht et al., 2021).

Based on the findings reported above, *Hypotheses 2 and 3* can be formulated as follows:

H2: A positive relation exists between job embeddedness and work engagement.

H3: A negative relation exists between job embeddedness and turnover intention.

The relation between work engagement and turnover intention

Research has indicated that employees who feel strongly connected to their job or organisation (job embeddedness) will experience more positive work outcomes such as work

engagement (Dobrow Riza et al., 2019; Engelbrecht, 2021). Furthermore, work engagement in turn decreases an employee's likeliness of experiencing turnover intention (Rose & Raja, 2016; Smith & Macko, 2014). This is important as turnover intention can lead to employees displaying counterproductive work behaviour, which is a destructive action that is harmful to the organisation's productivity (Wang et al., 2017). Moreover, high levels of turnover in organisations make it difficult for them to be competitive and optimally profitable as it increases the costs associated with turnover, such as recruitment and training costs (Adkins, 2015; Craig, 2015; Grzenda & Buczyński, 2015).

Based on the findings reported above, *Hypothesis 4* can be formulated as follows:

H4: A negative relation exists between work engagement and turnover intention.

The mediating role of work engagement between job security and job embeddedness and turnover intention

The JD-R model is built on the two mediating mechanisms of burnout and work engagement between the job demands and resources that an employee perceives and individual and organisational outcomes (Bakker & Demerouti, 2007). This model theorises that job resources, such as job security, motivate employees (work engagement) and this process impacts their commitment (and turnover intention) to the work they are completing and their performance through work engagement (Bakker & Demerouti, 2007). When employees have job resources they will ultimately most likely perform much better at their jobs due to feeling energised and motivated (work engagement) and experience lower levels of negative work outcomes such as turnover intention (Bakker & Sanz-Vergel, 2013).

H5a: Work engagement mediates the relation between job security and turnover intention.

The definition of work engagement indicates that it represents a positive job-related emotional state that motivates an employee to stay in their current job (Schaufeli et al., 2002), whereas job embeddedness consists of several factors (on-the-job and/or off-the-job), which keep an employee from leaving or intending to leave their job (Mitchell et al., 2001). Research has shown that high levels of turnover intention can develop from a lack of job embeddedness and work engagement (Schaufeli & Bakker, 2004a; Mitchell et al., 2001).

H5b: Work engagement mediates the relation between job embeddedness and turnover intention.

Figure 2 below indicates the proposed research model with the numbering of the hypothesis' mentioned above to visually indicate the model and hypothesis.

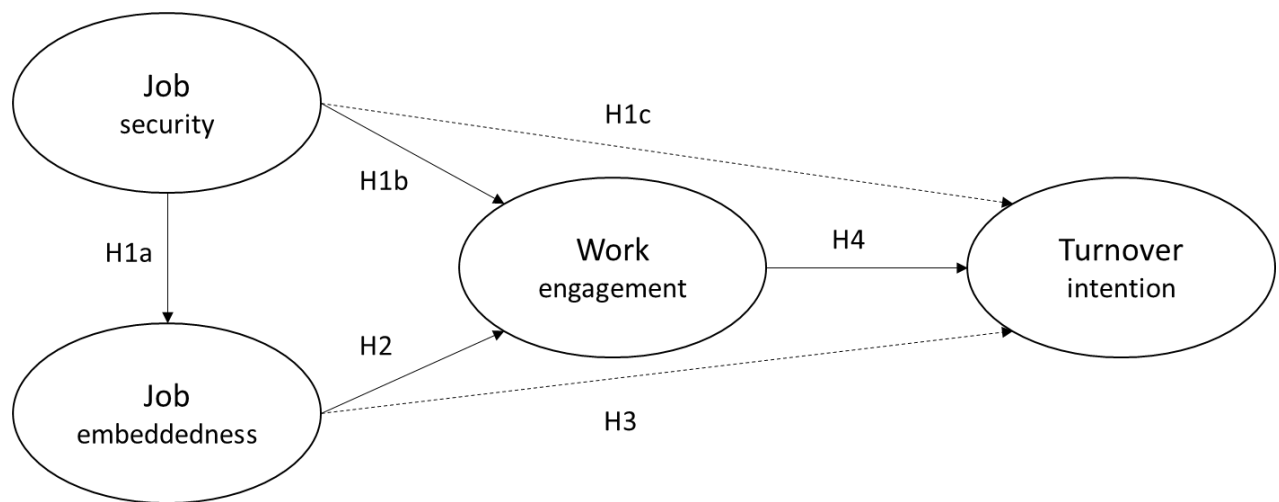


Figure 2: The Proposed Research Model

Research Design

Research Approach

The nature of this study was quantitative. Quantitative research is described by Struwig and Stead (2013) as a conclusive research method by means of which the specified hypotheses are tested in a large representative sample. Quantitative research is suitable for this current study as it contains structured data collection methods that can objectively generalise the results obtained from this study (Struwig & Stead, 2013). The study employed a cross-sectional design in order to meet the objectives of the study. A cross-sectional design implies that a large group of participants are included in an objective research process at a specific point in time (De Vos et al., 2011). This research design was simple and inexpensive to conduct (De Vos et al., 2011).

Research Method

Two phases were applied for the purpose of this study; firstly a literature review was given, thereafter an empirical study was conducted. The results obtained are presented in this research article.

Research Participants

For this study, a sample was taken comprising administrative, professional and management-level employees working on-surface within the mining industry ($n=203$). Participation in this study was voluntary. Specifically, a convenience sampling method was used. The inclusion criteria were that participants should be surface employees within the mining sector that vary in terms of demographics such as gender, age, and ethnicity. Participants also had to be at least 18 years old or above and have an English proficiency of grade 12 or higher to participate. The characteristics of the participants are summarised in table 1 below.

Table 1

Characteristics of the Participants (n=203)

Item	Category	Frequency	Percentage (%)
Gender			
	Male	107	53%
	Female	91	45%
	Missing	5	2%
Ethnic Group			
	African	77	38%
	Asian	4	2%
	Coloured	12	6%
	Indian	17	8%
	White	92	45%
	Missing	1	1%
Education			
	Postgraduate Degree	77	38%
	Degree (Graduate)	69	34%
	Diploma	31	15%
	Grade 12	25	12%

	Lower than Grade 12	1	1%
Tenure			
	Less than 3 months	8	4%
	3 to 6 months	35	17%
	6 to 12 months	20	10%
	1 to 2 years	34	17%
	2 years or more	105	52%

As is evident from Table 1 above, the sample consisted of 203 participants of whom 107 (53%) were male and 91 (45%) female. Most participants were White (45%), followed by African (38%). Furthermore, most participants had a Postgraduate Degree (38%), closely followed by a Degree (34%). Most participants had an organisational tenure of 2 years or more (52%), followed by 3 to 6 months (17%) and 1 to 2 years (17%). 3 to 6 months (17%) and 1 to 2 years (17%).

Measuring Instruments

The following measuring instruments were utilised in the study:

A *biographical questionnaire* was included to determine each participants' biographical characteristics such as gender, ethnicity, age, language, level of education, and organisational tenure (duration of employment) in the organisation. The biographical information was collected to present the basic sample composition.

Job security was measured using the applicable item from the Barnard (2014) Job Insecurity Scale (JIS) in this study. Positive and negative items were developed to add in the sub-dimensions (affective and cognitive) separately (Barnard, 2014). However, to measure job security, only the positive items were incorporated with this study, to only measure job security. The scale includes nine positively phrased items (e.g., "I am very sure that I will be able to keep my job") that are assessed on a 5-point Likert-type scale that ranges from 1 (strongly disagree) to 5 (strongly agree). This scale has a Cronbach's alpha coefficient of 0.86 for job security (Barnard, 2014).

Job embeddedness consists of two embeddedness components, namely on-the-job embeddedness and off-the-job embeddedness (Mitchell et al., 2001). However, in this study

the focus was only on on-the-job embeddedness by making use of The Job Embeddedness Scale (JES). The 23-item self-report inventory was used to only reflect the three on-the-job embeddedness dimensions. These dimensions are organisational *fit* (e.g., “My job utilizes my skills and talents well”) organisational *links* (e.g., “My closest friends are in the organization”) and organisational *sacrifices* (e.g., “I would sacrifice a lot if I left this job”). The items on this scale are assessed on a 6-point Likert-type scale, ranging from 0 (Never) to 6 (Always). This scale has a Cronbach’s alpha coefficient of 0.91 for job embeddedness (Van Dyk et al., 2013).

Work engagement was measured using the Utrecht Work Engagement scale (UWES-9) (Schaufeli & Bakker, 2004b). This scale measures the three dimensions of work engagement (*vigour*, *dedication*, and *absorption*) and consists of 9 items. The three dimensions of work engagement are measured as follows: vigour – 3 items (e.g., “When I get up in the morning, I feel like going to class/work”); dedication – 3 items (e.g., “I’m enthusiastic about my study/job”) and absorption – 3 items (e.g., “When I’m studying/working, I forget everything around me”). The items on this scale are assessed on a 7-point Likert-type scale that ranges from 0 (never) to 7 (every day). The UWES obtained a Cronbach’s alpha coefficient of 0.89 for vigour, 0.89 for the dedication and 0.83 for absorption and can thus be seen as reliable (Huhtala et al., 2015). Research in South Africa has indicated that the UWES-9 is best operationalised as a one-factor model (De Bruin & Henn, 2013).

Turnover intention was measured by means of the Sjöberg & Sverke (2000) Turnover Intention Scale (TIS) which is a Likert-type scale that consists of three items (Sjöberg & Sverke, 2000). This scale measures the likeliness of the respondents to leave the organisation (e.g., “I feel that I could leave this job”). The items on this scale are assessed on a 5-point Likert-type scale that ranges from 1 (strongly disagree) to 5 (strongly agree). Sjöberg and Sverke (2000) reported the Cronbach’s alpha coefficient for turnover intention to be 0.83.

Research procedure

Firstly, ethical approval was sought from North-West University’s Faculty of Economic and Management Sciences’ Ethics Committee (NWU-EMS-REC). Once the committee had approved the application (Reference number: NWU-01454-19-A4), permission was gained from the target mining organisations for data collection. This was done by making a virtual

appointment with the HR executives and then followed up by an appointment with the relevant executive committee members of each of the organisations. During these appointments, the overall objective of the study as well as the procedure was explained. An internal research facilitator was identified and the entire research process and overall objective of the study were explained. The internal research facilitator had to be someone who has access to most employees but will be impartial. The assistant of the HR executive was an ideal candidate for this task, would they be willing to assist. Following this was the informed consent process that specifically focused on explaining the overall objective of the study to the participants and indicating that participation was completely voluntary. All relevant information and informed consent information were included in emails along with the link of the survey, this email was sent to the internal research facilitator. The researcher requested the internal research facilitator to send the above-mentioned email to all employees who worked above-ground. On the first page of the online survey, the study was also explained as well as the informed consent information. Only the researcher had access to the submitted online surveys – which was completed on Google Forms, and all surveys were kept confidential. This ensured that participation was completely voluntary as no one, including the researcher knew who had completed the survey and who had not. The data for this study were captured in a spreadsheet after which it was statistically analysed.

Statistical analysis

The statistical analysis for the study was conducted using Mplus 8.6 (Muthén & Muthén, 2021). Firstly, structural equation modelling (SEM) with confirmatory factor analysis was used in order to test the measurement model (Brown, 2015). SEM was used to assess several relations simultaneously and provided various fit indices to determine how accurately the model described the proposed relations between the constructs in the data (Weston & Gore, 2006). The following fit indices were considered: the comparative fit index (CFI; ≥ 0.90), Tucker-Lewis index (TLI; ≥ 0.90), the root mean square error of approximation (RMSEA; ≤ 0.08) (Van de Schoot et al., 2012) and the standardised root mean residual (SRMR; ≤ 0.08). The confirmatory factor analysis was estimated to determine the factor structure of the examined variables from the different measuring instruments (Blunch, 2008). To determine whether the different constructs were reliable, composite reliability coefficients (ρ) were calculated, and each construct should ideally have a value of 0.70 and above. Furthermore, the relations between variables were explored by using the Pearson product-moment

correlation matrix. This was interpreted based on Cohen's (1992) guidelines, which states that values of 0.30 and above can be considered to have a medium practical effect, and that values of 0.50 and above can be considered to have a large practical effect.

Structural paths were added to the measurement model so that the structural model could be created. By doing this the anticipated relations between the constructs as stated in the hypothesis will be specified among the constructs as regressions. To support or reject the hypotheses the statistical significance ($p < 0.05$), size and direction of the standardised estimates were considered. Lastly, to test the possible indirect effects in the proposed model, bootstrap resampling was utilised with the resampling option (10 000 replications in this study) to allow the consideration of the significance of the indirect effects by also considering the 95% confidence intervals of the parameters (Hayes, 2017).

Ethical considerations

For this research study to be appropriate, fair, ethical and professional, certain ethical considerations were followed (Foxcroft & Roodt, 2013). Therefore, the first step to ensure that the research was done in an ethically correct manner, informed consent was obtained from all participants (De Vos et al., 2011). *Informed consent* stipulates that all the participants agree to participate in the study and that all participants were aware that participation was voluntary and that they could withdraw participation at any point in time (De Vos et al., 2011). In the informed consent form it was also explained that the data collected would be used for research purposes only. Furthermore, the researcher ensured that the study would not cause any harm to any participant and that all participants would always be treated with respect during the research process (De Vos et al., 2011). Lastly, the participant's information was always kept strictly confidential (De Vos et al., 2011). To ensure confidentiality the participants' names were not required in the survey. Once the data had been collected, it was securely stored in the custody of the supervisor. The research proceedings only commenced after the research ethics committee of North-West University's faculty of economic and management sciences had reviewed and approved the research proposal.

Results

Measurement model

The measurement model of this study was tested by creating four latent variables, including job security, job embeddedness, work engagement, and turnover intention. This model proved to be an excellent fit to the data: $\chi^2 = 776.35$; $df = 318$; CFI = 0.97; TLI = 0.97; RMSEA = 0.08; SRMR = 0.05). Table 2 below presents the standardised factor loadings for the latent factors of this study.

Table 2

Standardised Loadings for the Latent Factors

Item	Item Name	Loading	SE	<i>p</i>
Job Security				
	JSQ1	0.83	0.03	0.001
	JSQ2	0.36	0.08	0.001
	JSQ3	0.88	0.04	0.001
	JSQ4	0.87	0.03	0.001
	JSQ5	0.85	0.03	0.001
	JSQ6	0.91	0.02	0.001
	JSQ7	0.90	0.02	0.001
	JSQ8	0.97	0.01	0.001
	JSQ9	0.91	0.02	0.001
Job Embeddedness				
	JEFIT1	0.80	0.04	0.001
	JEFIT2	0.89	0.03	0.001
	JELINKS1	0.47	0.08	0.001
	JELINKS2	0.72	0.05	0.001
	JESAC1	0.95	0.02	0.001
	JESAC2	0.86	0.03	0.001
Work Engagement				
	WEQ1	0.76	0.04	0.001
	WEQ2	0.90	0.02	0.001
	WEQ3	0.80	0.04	0.001
	WEQ4	0.84	0.03	0.001

	WEQ5	0.88	0.02	0,001
	WEQ6	0.93	0.02	0,001
	WEQ7	0.90	0.02	0,001
Turnover Intention				
	TIQ1	0.71	0.06	0,001
	TIQ2	0.91	0.06	0,001
	TIQ3	0.90	0.05	0,001

Notes: SE = Standard Error; All p -values ≤ 0.001 .

As is evident from Table 2 above, most items loaded significantly on their respective factors. For example, the highest factor loading for job security was 0.97 (Item 8: “I feel sure that I will keep my job.”) followed by 0.91 (Item 6: “I am satisfied with my job security.”) and 0.91 (Item 9: “I feel at ease in that I will keep my job in/for the near future.”), while the lowest factor loading was 0.36 (Item 2: “There is only a small chance that I will become unemployed.”). The highest factor loading for job embeddedness was 0.95 (Item 5: “Are you confronted in your work with things that affect you personally?”), while the lowest was 0.47 (Item 3: “I would be very happy spending the rest of my career with this organisation.”). Furthermore, the highest factor loading for work engagement was 0.93 (Item 6: “My job inspires me.”) and the lowest was 0.76 (Item 1: “At work, I feel bursting with energy.”). Finally, the highest factor loading for turnover intention was 0.91 (Item 2: “I am actively looking for other jobs.”), with the lowest 0.71 (Item 1: “I feel that I could leave this job.”).

The correlations and reliability coefficients are presented in Table 3 below.

Table 3

Reliability Coefficients and Correlation Matrix

	ρ	1	2	3	4
1. Job Security	0.96	1.00			
2. Job Embeddedness	0.91	0.66	1.00		
3. Work Engagement	0.96	0.67	0.73	1.00	
4. Turnover Intention	0.88	-0.43	-0.41	-0.46	1.00

Notes: All correlations are statistically significant $p \leq 0.01$; $r \geq 0.30$ is practically significant (medium effect); $r \geq 0.50$ is practically significant (large effect); ρ = Composite reliability coefficient

Table 3 above indicates that all composite reliability coefficients of the variables were acceptable ($\rho \geq 0.70$), which indicates good internal consistency. Job security correlated positively with job embeddedness ($r = 0.66$; large effect) and work engagement ($r = 0.67$; large effect). Job security had a negative correlation and a practically significant relation with turnover intention with a medium effect ($r = -0.43$). Job embeddedness showed a positive correlation with work engagement with a large effect ($r = 0.73$) and a negative practically significant relation with turnover intention with a medium effect ($r = -0.41$). Furthermore, work engagement showed a negative practically significant correlation with turnover intention, with a medium effect ($r = -0.46$).

Structural paths

Table 4 and Figure 2 below display the results of the structural model.

Table 4

Structural path results

Path	Estimate	SE	<i>p</i>	Result
Job Security → Job embeddedness	0.66	0.06	0.001	Significant
Job Security → Work Engagement	0.34	0.08	0.001	Significant
Job Security → Turnover Intention	-0.20	0.12	0.112	Not significant
Job Embeddedness → Work Engagement	0.50	0.08	0.001	Significant
Job Embeddedness → Turnover Intention	-0.08	0.14	0.551	Not significant
Work Engagement → Turnover Intention	-0.27	0.13	0.035	Significant

Notes: Estimate = Standardised beta coefficient; SE = standard error

As can be seen, job security had significant, positive, structural paths to job embeddedness ($\beta = 0.66$, $SE = 0.06$, H_{1a} supported) and work engagement ($\beta = 0.46$, $SE = 0.06$, H_{1b} supported), but not to turnover intention ($\beta = -0.20$, $SE = 0.12$, $p = 0.112$, H_{1c} rejected). Job embeddedness had a significant positive structural path to work engagement ($\beta = 0.50$, $SE = 0.08$, H_2 supported), but no significant path to turnover intention ($\beta = -0.08$, $SE = 0.14$, $p = 0.551$, H_3 rejected). Lastly, work engagement indicated a negative structural path to turnover intention ($\beta = -0.27$, $SE = 0.13$, H_4 supported), as expected.

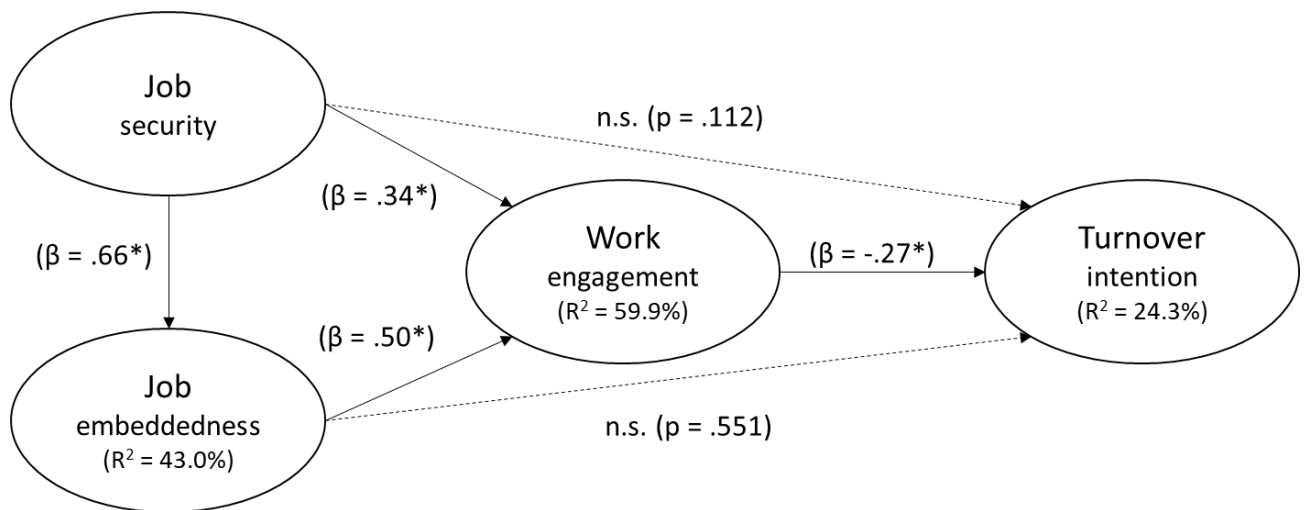


Figure 3: The final structural model with standardised results.

Indirect effects with 95% confidence intervals

The results of the indirect effects and confidence intervals of the structural paths are reported in Table 5 below.

Table 5

Indirect paths for the structural model

Indirect Effects	Estimate	SE	95% CI	
			Lower	Upper
Job Security → WE → Turnover Intention	-0.09	0.08	-0.23	-0.02
Job Embeddedness → WE → Turnover Intention	-0.14	0.08	-0.30	-0.03
Job Security → Job Embeddedness → WE → Turnover Intention	-0.09	0.05	-0.20	-0.01

Note: WE = Work engagement

Table 5 depicts the results in relation to the indirect effects that were both statistically meaningful as both effects' confidence intervals did not include zero – supporting H_{5a} and H_{5b}. Work engagement mediated between job security and turnover intention as well as between job embeddedness and turnover intention. Lastly, although not explicitly hypothesised, a serial mediation effect was also present in the results, which indicates that job security had a meaningful indirect effect on turnover intention through both job embeddedness and work engagement.

Discussion

Outline of the results

This current research study investigated the relation between job security, job embeddedness, work engagement and turnover intention in the mining sector. This study is unique as it is the only study that includes all the above-mentioned constructs within one study. The results of this study could assist organisations in knowing what the effects of these constructs on their employees are and could add to the body of literature by contributing towards creating empirical data and discuss the relations that exist between the constructs of the study, namely job security, job embeddedness, work engagement and turnover intention.

As concluded from the results job security did have a statistically significant positive relation to job embeddedness (supporting H_{1a}) – this finding is similar to that of Rafiq et al. (2019) who found that the more embedded an employee is, the less effect the lack of job security has on the individual. The results also indicated that job security and work engagement show a statistically significant positive relation (supporting H_{1b}). This supports the notion of Breevaart and Bakker (2018) that job security can lead to employees experiencing higher levels of work engagement due to having more energy to do their job. Other research studies have also indicated similar findings, namely that the lack of job security decreased the chances of employees feeling engaged (Asfaw & Chang, 2019; De Witte et al., 2016). Furthermore, according to the results obtained, job security did not indicate a direct statistically significant relation to turnover intention (rejecting H_{1c}). This differs from other research that has been done that indicated that job security has a strong significant relationship to turnover intention (Obeng et al., 2020; Heryanda, 2019).

Job embeddedness indicated a significant positive relation to work engagement according to the results (supporting H₂). Research has indicated that when employees are embedded in their jobs, they are more motivated and innovative, which increases their work engagement (Staufenbiel & König, 2010). Employees who are embedded in their jobs will likely experience more positive emotions at work, and in line with broaden-and-build theory, positive emotions can lead to positive outcomes such as work engagement (Dobrow Riza et al., 2019; Fredrickson, 2004). Furthermore, job embeddedness did not indicate a significant

relation with turnover intention (rejecting H₃). This result contrasts with previous research, which indicated that employees who are committed and embedded in their jobs will be less likely to experience turnover intention (Eberly et al., 2009; Lee et al., 2004; Mitchell et al., 2001). The contradiction could be ascribed to the combination of variables in the model and also diverse nature of the South African work context which can cause inconsistency in research conducted in this context (Heitmeyer et al., 2019) as the previous research that supported H₃ was not done in the complex South African context.

Lastly, as was initially expected work engagement showing a negative structural path to turnover intention (supporting H₄). According to previous research by Rose and Raja (2016) and Smith and Macko (2014), employees who are engaged at work will be less likely to experience turnover intention. This can be because work engagement is an antipode for counterproductive work behaviour caused by turnover intention (Wang et al., 2017).

The indirect relations were also studied, to create a more holistic and detailed picture of the research constructs, through bootstrapping. The results showed that work engagement did have a mediating role between job security and turnover intention as well as between job embeddedness and turnover intention (supporting H_{5a} and H_{5b}) – highlighting the importance of work engagement. Job resources, such as job security motivate employees to work harder and be more dedicated to the work that they are doing through feeling engaged in their work (Bakker & Demerouti, 2007). When employees experience job resources they are more likely to be higher performers (due to working harder and being more dedicated) as they will be engaged and in turn lower their chances of developing negative work emotions, such as turnover intention (Bakker & Sanz-Vergel, 2013).

Moreover, a serial mediation effect was also present in the results, which was not initially hypothesised, this showed that job security had a meaningful indirect effect on turnover intention through both job embeddedness and work engagement. This is supported through various other research studies showing that job embeddedness is strongly linked to employee retention, it has also been shown to increase employee engagement levels (Engelbrecht et al., 2021; Nielsen & Daniels, 2012). Employees who are secure in their jobs also experience higher levels of work engagement due to job security energising them from a job resources perspective (Breevaart & Bakker, 2018). Employees who are embedded or invested in their job, are also likely to be involved with and invested in their colleagues and the work that the

organisation does (Zhao & Liu, 2010). These employees usually fit in well with their colleagues and the organisational culture and believe that they will make huge sacrifices if they should leave their job, therefore they will be less likely to harbour turnover intention (Zhao & Liu, 2010).

Managerial implications

The study results have important implications for the motivation and performance of employees, as well as the retention and profitability for the organisation. Organisations should view job security and job embeddedness as components that improve work engagement for their employees and mitigate turnover intention and other undesired workplace behaviours that go with it (Bakker & Sanz-Vergel, 2013; Bakker & Demerouti, 2007). Organisations might consider implementing plans or strategies to improve employees' perceived job security and job embeddedness, as this can in turn improve levels of work engagement and ultimately decrease their chances of experiencing turnover (Asfaw & Chang, 2019; De Spiegelaere et al., 2014). Previous research has shown that employees who are not embedded in their job may be less productive as they spend a lot of time having turnover intention and pursuing possible job alternatives (Kilburn & Kilburn, 2008). Furthermore, employees who are more embedded may show more resilience during less secure and more uncertain times, as this resource can motivate employees to work harder so as to improve the situation, leading to more engaged employees (Staufenbiel & König, 2010). Therefore, organisations should address job embeddedness (fit, links, sacrifice) as a starting point for possible interventions. This will not only improve employee wellbeing during more insecure employment times, but also improve their work engagement and through this, lower their turnover intention (Burton et al., 2010; Mitchell et al., 2001; Schaufeli & Bakker, 2004a).

Limitations of the study and recommendations for future research

The first limitation of this study that should be discussed is that the sample size was relatively small, a suggestion for future research is that a larger number of participants be included in the study. This could improve the biographical diversity of the data and possibly provide richer and more diverse findings. Secondly, a cross-sectional design limits the researcher to make any associative and causal interpretations without longitudinal data (Taris & Kompier,

2006). This makes it difficult to draw predictive conclusions based on the research data (Taris & Kompier, 2006). A cross-sectional design was decided on because these constructs have not been researched together, to the researcher's knowledge, and this design provides proof of the relations among the four different constructs (Spector, 2019).

The data collection was limited to a single instrument in the form of a survey, which was emailed to employees in the mining sector. This survey also was a self-report survey, which could consciously or unconsciously be biased as this is a subjective survey that is completed without any assistance or supervision. Future researchers could possibly have a combined research study and use both a survey tool and interview questions to further explore the results or topics. This will aid the researchers in obtaining more detailed data and a better understand of the employees and their work situations.

This research study only focussed on office-bound employees in the mining sector. This excludes most of the employees within the mining sector, which makes it difficult to use this study to generalise within the mining sector. A suggestion for future research would be to create a survey that will be suited for and accessible to blue-collar workers as well, or to possibly explore these constructs through semi-structured interviews, in which the questions and constructs can be clearly explained. Including the blue-collar workers in the data collection process could possibly change the final results of the study as their experiences might differ vastly from those of the office-bound employees. Lastly, the study only included participants from the mining sector. This limits the research findings to be generalised for the general working population or for any other sector. A suggestion would be to replicate this study in a general working population within South Africa, or to replicate it within another sector. This will give more data that can be used in a more generalised manner or give more insights into these constructs within other sectors as well, which can then also be compared with the findings of this study

Conclusion

This study investigated the relations between job security, job embeddedness, work engagement and turnover intention within the mining sector. The results showed that significant relations existed between all of the constructs except between job security and

turnover intention, and job embeddedness and turnover intention. Various relations were found in the study as well, such as how work engagement mediates the relation between job security and turnover intention, and the relation between job embeddedness and turnover intention. The study also found a significant indirect relation between job security and turnover intention through both work engagement and job embeddedness. Organisations should be aware of the relation between these constructs and how it could impact their employee retention due to the presence or absence of turnover intention, and how organisations can strategically aim to mitigate turnover intention through job embeddedness and work engagement in more uncertain and less secure times.

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CHAPTER 3
CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

Conclusions, Limitations and Recommendations

This final chapter is aimed at outlining the conclusions, pointing out the limitations and making recommendations regarding the results of the study. The conclusions drawn from this study are aligned to the specific and general objectives of the study outlined in Chapter 1. Furthermore, the limitations of the study served to point out factors that may have impacted the results of the study. Lastly, the recommendations are provided to help expand on the literature within the industry and for future research both for universities and individuals in the field.

3.1. Conclusions

Job security, job embeddedness, work engagement and turnover intention are all popular research topics, and a large amount of research has been done on these constructs. Some examples include: (Breevaart et al., 2020; Al-Jabari & Ghazawi, 2019; Wyrwa, 2019; Lixin, 2017; Christian et al., 2011; Bakker et al., 2008; Sousa-Poza & Henneberger, 2004; Yao et al., 2004; Schaufeli et al., 2002; Mitchell et al., 2001; Valletta, 1999; Greenhalg & Rosenblatt, 1984). This is especially true when looking at research done on relations between job embeddedness and turnover intention, job embeddedness and work engagement and lastly work engagement and turnover intention (Burton et al., 2010; Staufienbiel & König, 2010; Eberly et al., 2009; Lee et al., 2004; Mitchell et al., 2001; Engelbrecht et al., 2021). These are all very important factors as they directly impact the productivity and bottom line of an organisation (Adkins, 2015; Craig, 2015; Grzenda & Buczyński, 2015). In previous research, it has been indicated that those employees that are more secure in their jobs feel embedded and subsequently feel engaged, and eventually were less likely to develop turnover intention (Zhao & Liu, 2010; Kilburn & Kilburn, 2008). With this knowledge, the current study aimed to add all four of these constructs in one research study to determine what each construct's relation is with the others and what the outcome would be of all the constructs combined. This was done by focussing on both the specific objectives of the study and the hypotheses.

The first objective was to conceptualise job security, job embeddedness, work engagement, and turnover intention according to the literature. *Job security* is the perceived state in which an employee is secure within their job and does not fear losing their job or any anticipated job

features (Greenhalg & Rosenblatt, 1984; Lixin, 2017; Valletta, 1999). Job security therefore is entirely subjective, and different individuals may experience the same situation very differently and experience different levels of job security in the same situation (De Witte, 1999). Job security is also a future-focussed aspect of a job, and this highlights the employee's own anticipation or prediction (Boswell et al., 2014). *Job embeddedness* is a combination of three different constructs, namely fit, links and sacrifices. These constructs represent three types of pressure that prevent an employee from leaving their job (Yao et al., 2004; Mitchell et al., 2001). These three constructs can all be used in both “on-the-job embeddedness” and “off-the-job-embeddedness”. However, for purposes of this study, only “on-the-job embeddedness” was used as this is the most accurate predictor of an employee's actions within their job (Jiang et al., 2012; Allen, 2006). The three constructs are more specifically defined as the fit of an employee within the organisation and how much they feel they “belong” there. The links refer to the connection employees have with their colleagues and lastly, the sacrifices refer to what the employee stands to lose should they choose to leave (Mitchell et al., 2001).

Work engagement is a mental state of well-being that an employee feels regarding the work they are doing as well as their commitment to performing well at their job (Christian et al., 2011; Bakker et al., 2008; Schaufeli et al., 2002). Work engagement consists of three components, namely vigour (the energy an employee puts into their job); dedication (the involvement an employee has in their job) and absorption (how engrossed they are in the work they do) (Bakker, et al., 2008). Lastly, *turnover intention* is the subjective probability of an employee of intending to leave their job for another job (Al-Jabari & Ghazawi, 2019; Sousa-Poza & Henneberger, 2004). Turnover intention is a negative state of mind in employees and can lead to them displaying counterproductive behaviours at work and eventually leaving their job (Wang et al., 2017). The first objective, namely to conceptualise job security, job embeddedness, work engagement, and turnover intention according to the literature was achieved by means of a comprehensive literature study and outlining the findings in the second chapter of the manuscript.

The second objective of the study was to determine the relation between job security, job embeddedness, work engagement and turnover intention. The findings of the study were somewhat in line with what the literature has stated, with a few discrepancies. Job security is positively related to job embeddedness (H_{1a}) and work engagement (H_{1b}) (Asfaw & Chang,

2019; Breevaart & Bakker, 2018; De Spiegelaere et al., 2014; Rafiq et al., 2019). However, opposed to what the limited literature on this suggests, job security is not positively related to turnover (H_{1c}). Job embeddedness is positively related to work engagement (H_2) but has no positive relation to turnover intention (H_3) (Nielsen & Daniels, 2012; Zhao & Liu, 2010; Kilburn & Kilburn, 2008). Lastly, in line with the research, work engagement is negatively related to turnover intention (H_4) (Schaufeli & Bakker, 2004).

The third objective was to determine what the indirect relations between job security, job embeddedness and turnover intention is, through work engagement. From previous research conducted (Burrows et al., 2021; Engelbrecht, 2021; Dobrow Riza et al., 2019; Saks, 2006; Schaufeli & Bakker, 2004; Yilmaz et al., 2015) as well as from the findings of this study, work engagement mediated the relationship between job security and turnover intention (H_{5a}) as well as between job embeddedness and turnover intention (H_{5b}). This objective also links with the fourth objective, which was to determine whether work engagement mediates the relationship between job security, job embeddedness and turnover intention. As can be seen in the findings below, this has been shown to be true, and the current study also found a serial mediation effect in the results, which indicated that job security was indirectly related to turnover intention through both job embeddedness and work engagement. This is not surprising, as research has shown that employees who are highly embedded and subsequently more engaged in their work, are less likely to be affected by negative events in the workplace, such as job security (Burton et al., 2010). This also leads to employees being less likely to experience turnover intention during times when they feel less secure in their job (Engelbrecht et al., 2021).

The fifth, and final objective was to make recommendations for future research and practice. This objective was reached and is presented in this third and final chapter of this manuscript.

3.2 Limitations

Although this study did contribute to the theory on job security, job embeddedness, work engagement and turnover intention, the study also has limitations. The first limitation is the cross-sectional design that was used and gathered in a single time period which limits causal inference (Levin, 2006). The research constructs were also all measured simultaneously,

which does allow for the associations to be investigated; it makes it difficult to deduce root causes. The research population was restricted to only office-bound employees within the mining sector in South Africa. Future research should be conducted with a more inclusive population within the mining sector, a generalised population or another specific population within another industry to make the results more generalisable (Leroy et al., 2012). Due to the specific nature of the population of this study, the generalisation of the results should be approached with caution. Furthermore, the research study relied entirely on previously reviewed literature to form the hypotheses; therefore the design limitation will remain inconclusive without longitudinal data. Additional longitudinal research could support the relations that were established between the constructs (Leroy et al., 2012).

The research study employed self-report questionnaires, which are completely subjective and open to interpretation; this can largely impact the study's results. This can also cause error within the measurement due to common method bias resulting from the subjective nature of the questionnaire (Podsakoff et al., 2003). The cross-sectional design with a self-report questionnaire that was employed is still appropriate for the objectives of this study as it is used to provide evidence for relations that exist among different constructs and can elucidate some explanations for the relations found (Spector, 2019).

3.3 Recommendations

3.3.1 Recommendations for practice

The main objectives of this study were to investigate the relations between job security, job embeddedness, work engagement and turnover intention; to determine what the indirect relations between job security, job embeddedness and turnover intention is, through work engagement; and to determine whether work engagement mediates the relation between job security, job embeddedness and turnover intention. Previous studies have shown the importance of minimising the negative effect low job security can have on employees and their work- and personal life as well as on their mental well-being (De Wit et al., 2012; Sverke et al., 2002). This will also result in employees being more embedded and engaged in their jobs, which in turn will improve the organisation's overall productivity and performance (Lebel, 2017; De Witte et al., 2016; Niessen & Jimmieon, 2016; Sonnentag & Starzyk, 2015; Staufenbiel & König, 2010; Sonnentag, 2003).

Work engagement has a very strong link to the attitudes of employees and their intentions at work, and employees who feel more secure at work, are more likely to experience higher levels of work engagement (Mauno et al., 2007; Saks, 2006). Furthermore, employees who are more engaged in their jobs will naturally be more embedded as well, and consequently feel more secure within their job, even during more unstable times (Burrows et al., 2021; Yilmaz et al., 2015). When embedded employees are in volatile environments at work, and their job may be less secure, they will be more likely to show more dedication towards their job and perform better to improve the organisation's situation (Fay & Sonnentag, 2002; Sonnentag & Starzyk, 2015; Strauss & Parker, 2018). From the findings of this current study, it can also be concluded that job security and job embeddedness have a negative effect on turnover intention, through work engagement. Hence it is suggested that organisations start with interventions with a view to improve their employees' work engagement, as this can invertedly improve their perceived job security and their job embeddedness, and ultimately lower the chances of them developing turnover intentions (Burton et al., 2010; Schaufeli & Bakker, 2004; Mitchell et al., 2001).

When referring to the JD-R model for recommendations on how organisations can improve their employees' level of work engagement, the elimination of job demands has shown to not be the most effective call of action (Schaufeli et al., 2009). Instead, research suggests that the motivational potential of job resources should be utilised to the fullest (Schaufeli et al., 2009). Job resources not only improve employees' ability to deal with job demands (such as the lack of job security), but it also motivates them to work harder and perform better, and increases their level of work engagement (Schaufeli et al., 2009). Identifying the job resources and demands in the workplace, can assist organisations in targeting high-risk areas, and designing effective interventions (i.e., clear job descriptions, management communication, and provide a psychologically safe environment) as a priority. Organisations can also implement different interventions to alleviate the impact of job insecurity, creating an environment in which employees can feel secure, i.e. open communication strategies regarding the financial status of the organisation, facilitate support structures to assist with the mental health of employees and provide training opportunities.

3.3.2 Recommendations for future research

The limited amount of literature that could be found on some of the constructs and especially the constructs combined in a study indicates that the current study is unique in its nature and does add to the literature. For future research, it is therefore advised to consider making use of a longitudinal design that can possibly shed more light on the causal relation between the variables (Taris & Kompier, 2006). Future studies can also possibly make use of a mixed-method design and make use of both a survey and an interview to explore the constructs in more detail.

Another recommendation is that this study be replicated across other industries or within a general working population in South Africa. Such research should also include a more diverse worker population as this study was limited to office-bound workers and excluded blue-collar workers. This would lead to richer data and results, which can more accurately be generalised to the South African population.

Lastly, the study had a relatively small sample size. Future research could be conducted with a larger population, which could lead to a more diverse group. This could improve the validity and reliability of the study for the extremely diverse workforce in South Africa.

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