

The validation of a revised version of the Job Insecurity Scale in South Africa

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COMMENTS

The reader is reminded of the following:

- The editorial style of this manuscript follows the guidelines of the South African Journal of Industrial Psychology (SAJIP). The referencing in this mini-dissertation follows the format prescribed by the Publication Manual (6th edition) of the American Psychological Association (APA). These practices are in line with the policy of the Programme in Industrial Psychology of the North-West University (Potchefstroom) to use the APA style of referencing in all scientific documents as from January 1999.
- The mini-dissertation is submitted in the form of a research article.

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DECLARATION

I, **Neil B. Barnard**, hereby declare that ‘The validation of a revised version of the Job Insecurity Scale in South Africa’ is my own work and that the views and opinions expressed in this work are those of the author and relevant literature references as shown in the references.

I further declare that the content of this research will not be submitted for any other qualification at any other tertiary institution.



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A handwritten signature in black ink, appearing to read "Hester van der Walt", on a light-colored background.

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SUMMARY

Title: The validation of a revised version of the Job Insecurity Scale in South Africa

Keywords: Job insecurity, psychometric properties, validation, measuring instrument, organisational commitment, job satisfaction, South Africa

The De Witte (2000) Job Insecurity Scale (JIS) claims to measure the cognitive and affective dimensionalities of job insecurity. However, there is a concern as to whether this is in fact a true reflection of the individual, owing to the possibility that the JIS may rather measure the negative and positive dimensionalities of job insecurity instead.

This research article aims to investigate whether a revised version of the JIS measures the cognitive and affective dimensionalities of job insecurity, or alternatively, other dimensionalities of the revised JIS after additional items have been added to the scale. Furthermore, it is aimed at determining whether the constructs of the revised JIS prove to be invariant across gender, age and educational level, and to determine whether the psychometric properties of a revised version of the JIS is a valid and reliable instrument. Furthermore, this research article aims at determining if the revised version of the JIS is a more accurate indicator of job insecurity and its relation with organisational outcomes (job satisfaction and organisational commitment), as well as its equivalence across various demographic variables (i.e. gender, age and educational level).

A quantitative research approach was used. This approach was utilised to statistically reflect the psychometric properties of the revised version of the JIS, using large amounts of data relating to job insecurity. A cross-sectional design was used for the purpose of this study. The sample consisted of employees working in the mining sector ($n = 262$) and manufacturing industries ($n = 208$), constituting a total sample of 470 ($n = 470$). Non-probability quota sampling was used to adequately divide the population according to its sector in the economy, and further according to the industry.

The results showed that the revised JIS consists of a two-factor model, namely job security and job insecurity. Furthermore, it was found that the revised JIS is valid in providing

relationships with organisational outcomes (job satisfaction and organisational commitment). The study indicated that job insecurity has a negative relationship with job satisfaction, as well as a predictive positive relationship with organisational commitment. The revised JIS proved to have discriminant validity in that it does not relate to an unrelated construct (physical tiredness during work). Lastly, the revised JIS can be deemed valid across different demographic groups (gender, age and educational level).

Recommendations are made to be applied in practice, as well as for future research.

OPSOMMING

Titel: Die validering van 'n hersiene weergawe van die Werksonsekerheidskaal in Suid-Afrika

Sleutelwoorde: Werksonsekerheid, psigometriese eienskappe, validering, maatstaf, organisasietoewyding, werkstevredenheid, Suid-Afrika

De Witte (2000) se Werksonsekerheidskaal (Job Insecurity Scale – JIS) beweer dat dit die kognitiewe en affektiewe dimensionaliteite van werksonsekerheid meet. Daar bestaan egter 'n voorbehoud oor of dit 'n ware weerspieëling is van die individu, weens die moontlikheid dat die JIS eerder die positiewe en negatiewe dimensionaliteit van werksonsekerheid meet.

Hierdie studie se doelwit was om te bepaal of 'n hersiene weergawe van die JIS wel die kognitiewe en affektiewe dimensionaliteite van werksonsekerheid meet, of alternatiewelik ander dimensionaliteite van die hersiene JIS nadat addisionele items by die skaal gevoeg is. Daarbenewens is die studie ook daarop gemik om te bepaal of die konstrakte van die hersiene JIS invariant is ten opsigte van geslag, ouderdom en vlak van opvoeding, asook om te bepaal of die psigometriese eienskappe van die hersiene JIS beide 'n geldige en betroubare maatstaf is. Hierdie navorsingsartikel is ook daarop gemik om te bepaal of die hersiene weergawe van die JIS 'n meer akkurate aanwyser is van werksonsekerheid en die verhouding met organisasie-uitkomst (werkstevredenheid en organisasietoewyding), asook om te bepaal of die JIS ekwivalent is tussen verskillende demografiese groepe (geslag, ouderdom en vlak van opvoeding).

'n Kwantitatiewe navorsingsbenadering is gevolg. Hierdie benadering is aangewend om 'n statistiese weerspieëling te gee van die psigometriese eienskappe van die hersiene JIS deur gebruik te maak van groot hoeveelhede data in verband met werksonsekerheid. 'n Kruisseksionele navorsingsbenadering is gebruik vir die doel van hierdie studie. Die steekproef het bestaan uit werknemers vanuit die mynsektor ($n = 262$) en die vervaardigingssektor ($n = 208$), wat in totaal 'n populasiegroep van 470 gelewer het ($n = 470$). Niewaarskynlikheidskwota-steekproeftrekking is gebruik om 'n akkurate skeiding te maak in die populasie volgens die sektor in die ekonomie, en verder volgens die industrie.

Die resultate het gewys dat die hersiene JIS uit 'n tweefaktormodel bestaan, naamlik werksonsekerheid en werksekerheid. Daar is verder bevind dat die hersiene JIS geldig is in die gebied van verhoudinge met organisasie-uitkomst (werkstevredenheid en organisasietoewyding). Die studie toon dat daar 'n negatiewe verhouding is tussen werksonsekerheid en werkstevredenheid, asook 'n voorspellende positiewe verhouding met organisasietoewyding. Die hersiene JIS toon diskriminantgeldigheid omdat dit nie 'n verwantskap toon met 'n onverwante konstruk (fisiese moegheid gedurende werk) nie. Laastens, kan die hersiene JIS beskou word as geldig oor verskillende demografiese groepe (geslag, ouderdom en vlak van opvoeding).

Aanbevelings word gemaak vir die praktyk, asook vir toekomstige navorsing.

CHAPTER 1

INTRODUCTION

Introduction

The De Witte (2000) Job Insecurity Scale (JIS) is arguably the most popular questionnaire to measure employee job insecurity. The De Witte (2000) JIS version aims at measuring an employee's cognitive and affective job insecurity. Pienaar, De Witte, Hellgren and Sverke (2013), however, stated that even though the De Witte (2000) JIS version has been validated within the South African context, it poses some conceptual limitations. The way in which the items are phrased within these sub dimensions (cognitive and affective) presents a concern. The items of the cognitive dimension are phrased in a positive manner, whereas the items within the affective dimension are phrased in a negative manner. This study proposes to provide a revised version of the De Witte (2000) JIS in that newly developed items will be added to sub dimensions of the De Witte (2000) JIS version – i.e., positively phrased items for the affective scale where there are only negative items, and negatively phrased items for the cognitive scale, where there are only positive items. The purpose of this mini-dissertation will therefore be to determine the psychometric properties of this revised version of the JIS. Specifically, it attempts to determine whether the revised JIS is valid and reliable within the South African context; the construct's dimensionality (i.e. number of factors and polarity possibilities); and the construct's relationship to organisational outcomes. It will be done by means of structural equation modelling methods: construct validity, convergent validity, discriminant and predictive validity will be investigated.

This chapter is comprised of a problem statement and an overview of previous research that was conducted. There is also an explanation of the research questions, research objectives and research hypotheses, as well as a discussion of the research methodology. The layout of the chapters and a summary of this chapter are also provided.

1.1 Problem statement

The world of work consists of a vigorous, constantly changing environment. This creates a great deal of strain on many companies, because it is crucial to implement strategies to remain competitive in the global market. Findings from Hitt, Keats, Harback and Nixon (1994) indicate that global competition has caused numerous companies in Europe, the

United States and South Africa to resort to strategies such as restructuring, mergers, downsizing and the closing down of some plants.

It is important to be aware that strain is still prevalent in the world of work of today, as economies, and therefore the organisations that function within these economies, are still struggling to recover from the global economic recession that started in 2008. Organisations continue to apply adaptive strategies, such as mergers, acquisitions and diversification, to remain competitive (Kriese, 2008). In turn, these strategies have an impact on the job insecurity levels of employees (Ashford, Lee & Bobko, 1989; Holm & Hovland, 1999).

Job insecurity is the phase preceding unemployment (Dooley, 2003). This phenomenon can be viewed in a multidimensional manner, and within this conceptualisation, different streams of thought and research exist. In one multidimensional conceptualisation, job insecurity consists of two sub dimensions: Firstly, it is seen as *quantitative*, in that it is described as a feeling of powerlessness to actually maintain continuity in a threatened job situation (De Witte, 2005; Erlinghagen, 2008; Greenhalgh & Rosenblatt, 1984). Secondly, it can be seen in a *qualitative* light, describing a sense of fear of losing certain valued job features (such as stability, positive performance appraisals and possible promotions) (De Witte, 2000; Jacobson, 1999; Greenhalgh & Rosenblatt, 1984). Another idea, and the focus of this dissertation, is that job insecurity can also be divided into sub dimensions of *cognitive* job insecurity and *affective* job insecurity (Greenhalgh & Rosenblatt, 1984). Cognitive job insecurity refers to an employee's thoughts and perceptions towards job insecurity, whereas affective job insecurity reflects an individual's feelings towards their job insecurity (Pienaar et al., 2013).

Job insecurity has previously been recognised as a long-lasting condition that has numerous negative consequences for the workforce (Roskies & Louis-Guerin, 1990, Sverke & Goslinga, 2003). Globally, job insecurity leads to an increase in negative organisational attitudes and behaviours (De Witte, 2005; Rocha, Crowel & McCarter, 2006; Sverke & Goslinga, 2003), a decrease in job satisfaction (De Witte, 2005; Sverke, Hellgren & Näswall, 2002; Van Wyk & Pienaar, 2008), an increase in employee burnout (Cascio, 1993; Van Wyk & Pienaar, 2008), a decrease in organisational commitment (Ito & Brotheridge, 2006; Van Wyk & Pienaar, 2008), and high levels of distress in general (Cascio, 1993; Van Wyk & Pienaar, 2008). In terms of employee health, job insecurity has a negative impact on the well-

being of an employee, resulting in depression, anxiousness, sleep disturbances and higher levels of serum cholesterol (De Witte, 2005; Heaney, Israel & House, 1994; Mattiasson, Lindgarde, Nilsson & Theorell, 1990; Rocha et al., 2006; Sverke & Goslinga, 2003). It becomes clear that the effects of job insecurity hold major negative consequences for organisations and employees. The negative consequences of job insecurity are affecting the workforce at all levels within organisations in South Africa (Elbert, 2000; Labuschagne, Buitendach & Bosman, 2005; Sverke, Hellgren, Näswall, Chirumbolo, De Witte & Goslinga, 2004).

Locally, job insecurity is seen as a burning issue in the South African workforce. Van Wyk and Pienaar (2008) revealed that participants perceived the job insecurity experienced in South Africa to be just as serious as in other countries. This includes contributing factors such as an unstable unsteady political, economic, and social environment leading to some employees' being faced with increasingly high levels of job insecurity. Viljoen (2004) stated that apart from being faced with the intense economic and political changes, South Africa is also becoming progressively more exposed to the worldwide economy, advances in technology and international competition, due to its emerging market status. This creates a perturbing reality for the South African workforce, exposing such feelings of job insecurity (Viljoen, 2004).

As job insecurity is a perturbing reality within the South African workforce, a measure is needed that can accurately portray an employee's true job insecurity. However, the literature provides little that contributes to a clear and in-depth understanding of job insecurity. To measure job insecurity, it becomes critical that a measure should be found that reflects a scale that is psychometrically valid and reliable (Probst, 2003; Sverke & Hellgren, 2002). Research should be done to determine whether the multicultural South African context affects the validity of all existing measures, with specific focus on the reliability, equivalence and item functioning of such measures (Van Wyk & Pienaar, 2008).

In taking into account the existing need to accurately portray South African's job insecurity in the workforce, it is important to consider the most highly regarded measure used in job insecurity in the country. One of the most used job insecurity measures in the South African context is the JIS, developed by De Witte (2000) (Van Wyk & Pienaar, 2008). The JIS is set out to measure an individual's cognitive and affective job insecurity levels (De Witte, 2000;

Jacobson, 1991; Pienaar et al., 2013). Pienaar et al. (2013) stated that cognitive appraisal refers to how the employee perceives their external environment, whereas affective appraisal refers to the employee's internal, psychological and individual reaction to the perceived cognitive appraisal. This indicates that the instrument measures two components, namely (a) the effect of an individual's environment on his or her job insecurity level, and (b) the effect of the individual's perception of these circumstances on his or her job insecurity level (cognitive level and affective level, respectively).

The items of the JIS are outlined in Table 1.

Table 1

The items of the South African validated version of the De Witte (2000) JIS

	Affective Dimension	Cognitive Dimension
Positive		<ul style="list-style-type: none"> • I am very sure that I will be able to keep my job. • There is only a small chance that I will become unemployed. • I am certain/sure of my job environment. • I think my future prospects within the organisation are good.
Negative	<ul style="list-style-type: none"> • I feel unsure about the future of my job. • I am worried over whether I will keep my job. • I am afraid that I will be dismissed/fired. • I fear that I might lose my job. 	

To understand the functioning of the JIS, important elements to take into account are the conceptual limitations that the measure poses (Pienaar, 2013). Buitendach, Rothmann and De Witte (2005) stated that the measure was confirmed to have factorial validity, internal consistency and construct equivalence, and that it possibly may be seen as a worthy measure in the South African context. However, they stated that they experienced difficulties with a certain number of items, and therefore recommended that a more in-depth and critical analysis should be conducted to determine the true validity of the JIS (Buitendach et al., 2005). Although the instrument has been proven to be valid and reliable within the South African context, there are questions that are left unanswered, such as a possibility that there may be wording problems between the items of the two sub dimensions (Buitendach et al., 2005; Pienaar et al., 2013).

A shortened version (8 items) of the De Witte (2000) job insecurity measure has been validated within the South African context, illustrating that all the items loaded on the expected factors had satisfactory magnitudes of factor loadings (Pienaar et al., 2013). It was confirmed that the sub dimensions illustrated satisfactory reliability across different groups of employees ($n = 1\,925$). It was recommended that further construct validity research was needed to establish in greater depth the factorial validity, reliability and construct equivalence of the JIS. An important outstanding issue is illustrated by the fact that the cognitive items are phrased in a positive manner, whereas the affective items are all phrased in a negative manner (Buitendach et al., 2005; Pienaar, 2013). Conceptually, the wording of these items may have a positive or negative influence on the manner in which the items are rated, and can consequently have an impact on their relationship with outcomes (Pienaar et al., 2013).

It can be argued that the items in the cognitive dimension may lead the test-taker to answer the questions with a more positive attitude, whereas items in the affective dimension may lead the test-taker in a more negative direction, due to the phrasing of the questions. As the JIS has been proven valid, it can merely be a case of incorrect wording instead of the item content's being conceptually insufficient (Pienaar et al., 2013). The JIS may simply reflect dimensions of positive and negative affect, rather than true cognitive and negative job insecurity, commonly referred to as method effects (Brown, 2003). The De Witte (2000) measure may therefore measure individuals' positive and negative perceptions of their job insecurity level, rather than their actual affective and cognitive job insecurity level. There exists a lack of clarity over whether the measure actually reflects an individual's cognitive and affective job insecurity, or if it in fact reports on the positive and negative dimensionalities of job insecurity that is experienced (Pienaar, 2013). This raises the further question of whether there is a lack of content validity in the scale, as it possibly does not measure what it is intended to measure. If both the dimensions (cognitive and affective) of the scale have items that are both positively and negatively phrased, it will most likely answer questions about content validity, and sustain the theoretical distinction between cognitive and affective job insecurity (Pienaar et al., 2013). The recommendations by Pienaar et al. (2013), that the cognitive and affective dimensions of the De Witte measure should be expanded with items that are both negatively phrased in the case of cognitive job insecurity, and positively phrased in the case of affective job insecurity, form the main objective of the current research project.

Pienaar et al. (2013) stated that the dimensions (affective and cognitive) of job insecurity are able to effectively portray valuable information, which can have an effect on both organisational and individual outcomes. The question remains whether this statement can be confirmed as being valid for the De Witte scale. Pienaar et al. (2013) raised a concern regarding the positive (cognitive) and negative (affective) wording of the two dimensions. They stated that this might explain why the cognitive dimension (positive wording) relates to positive work outcomes, and why the affective dimension (negative wording) relates to negative individual outcomes. In this case, positive work outcomes referred to job satisfaction and organisational commitment, whereas negative individual outcomes referred to emotional exhaustion. Buitendach et al. (2005) recommend that future research should incorporate both positively and negatively phrased items into the cognitive and affective dimensions respectively.

It is suggested to managers and organisations that interventions should be developed and implemented that might decrease the level of job insecurity and offset its negative consequences within the workforce (Van Wyk & Pienaar, 2008). It is important to have tools that will steer both managers and researchers toward conducting research in an effective and relevant manner, for this will contribute to the development of individuals and the organisation (Van Wyk & Pienaar, 2008).

Finally, there may be a difference between the levels of job insecurity experienced among different gender, age and educational groups, particularly in a country as culturally diverse as South Africa. Males and females tend to illustrate discrepancy regarding their job insecurity levels, as males within the bank and factory sectors reported that they experienced lower levels of job insecurity in comparison to females (Kinnunen, Mauno, Nätti & Happonen, 2000). However, in previous South African results, Buitendach et al. (2005) have shown that males experience higher levels of affective and cognitive job insecurity compared to females. Regarding age, employees older than 55 years of age tend to have higher levels of job insecurity than that of younger employees, as they may have a perception that their skillset is of lower importance, and that they may be asked to retire early (Buitendach et al., 2005). According to Van Vuuren, Klandermans, Jacobson and Hartley (1991), the higher an employee's level of education is, the lower his or her job insecurity level will be. It therefore also becomes necessary to have a job insecurity measure that is free from bias within the South African context. Having a valid, reliable and bias-free job insecurity measurement tool

will assist organisations and managers to determine their workforce's level of job insecurity and develop and implement interventions accordingly (Ito & Brotheridge, 2006).

In the context of the preceding discussion, the De Witte (2000) JIS will serve as the framework on which this study will be based. Newly developed items will be added to the De Witte (2000) JIS. Positive items will be developed and added to the affective dimension, whereas negative items will likewise be developed and added to the cognitive dimension. Results on this revised JIS should try to provide feedback on whether the items do in fact depict both affective and cognitive job insecurity. This will aim at determining whether the revised JIS is able to accurately distinguish between an employee's affective and cognitive job insecurity levels, and whether the items in the sub dimensions are free from bias and show equivalence. It will also indicate whether the sub dimensions prove to be practically and statistically significantly related to important organisational outcomes.

In summary, the concern is that the affective items lead the individual to answer with a more negatively framed mind-set, whereas the cognitive items lead the individual to answer in a more positively framed mind-set. This can most likely mean that the measure does not accurately measure affective and cognitive job insecurity, but rather reflects a positive/negative distinction more closely related to individual affect. Therefore, there is a need in the literature in terms of the conceptualisation and functioning of the job insecurity measure of De Witte (2000). This study will determine whether a revised JIS can reflect an individual's cognitive and affective job insecurity. Therefore, in this study, the necessary positive and negative items will be added to both components (affective and cognitive) to determine an answer to these specific questions. The study will furthermore aim at determining the relationship between job insecurity and specific organisational outcomes. The main organisational outcomes that will be focused on are job satisfaction, organisational commitment and physical tiredness during work. As mentioned previously, there is a difference in the level of job insecurity among the different ethnic and gender groups within the South African context. The study will therefore also aim at determining whether this is a viable statement when utilising a reviewed JIS.

Based on the aforementioned research problem, the following research questions have been formulated:

Q₁: How is job insecurity, job satisfaction, and organisational commitment conceptualised in the literature?

Q₂: What is the reliability and the validity of the revised JIS?

- What is the construct validity (factorial validity), i.e. does the revised JIS measure both a cognitive and affective aspect of job insecurity?
- What are the alpha and omega reliability coefficients of the revised scale?
- Does the revised job insecurity instrument still reflect a positive/negative dimensionality, or alternatively reflect true cognitive and affective dimensions?
- How do these job insecurity dimensions relate to expected organisational outcomes, i.e. job satisfaction (convergent validity)?
- Is the job insecurity measure unrelated to constructs from which it is supposed to differ (i.e. physical tiredness during work)?
- Does the job insecurity measure show predictive validity with regard to job insecurity outcomes (i.e. organisational commitment)?

Q₃: Do the items and dimensions of the adjusted job insecurity measure prove to be free from bias (measurement invariance)?

Q₄: What recommendations can be made for future research and practice?

1.2 Expected contribution of the study

This study will contribute to the individual, organisation and literature. Firstly, this study can be valuable for the individual; if the relevant personnel are made aware of the risks of high job insecurity levels within their company they can then identify, develop and provide interventions to address those levels. Secondly, this study may contribute to organisations in that it will provide feedback on a revised JIS that can be used to efficiently determine, i.e. measure, what the workforce's job insecurity levels are, provided the scale is proven to be free from bias and equivalence. This in turn may eventually lead to a more profitable organisation, as all the untoward effects of job insecurity can be managed more effectively by the relevant stakeholders. Lastly, it has been stated in the literature that the wording of the items are positive for the cognitive dimension and negative for the affective dimension of the De Witte JIS (Pienaar et al., 2013). Therefore, validating an adjusted measure will contribute

to the literature in that it will provide insights on whether the wording of the items has an effect on the outcomes of the results, after positive and negative phrased items have been added to the two sub dimensions (cognitive and affective), respectively.

1.3 Research objectives

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

1.3.1 **General objective**

To investigate the dimensionality and psychometric properties of this revised JIS within the South African context.

1.3.2 **Specific objectives**

The specific objectives of this research are:

- To conduct a literature review on job insecurity, related constructs, and its effects on employee and work-related outcomes.
- To determine whether the revised job insecurity measure is valid and reliable in a sample of working individuals, more specifically pertaining to the following:
 - Factorial and construct validity;
 - Convergent validity with other theoretically similar constructs (i.e. job satisfaction);
 - Discriminant validity with those constructs from which it is supposed to differ (i.e. physical tiredness at work);
 - Predictive validity with appropriate outcomes (organisational commitment); and
 - Measurement invariance between groups (gender, age and educational level).
- To present and discuss conclusions, limitations and recommendations of the findings and results of the present study.

1.4 Research hypotheses

The following formulated hypotheses are presented:

H₁: The revised JIS consists of a two-factor structure, i.e. cognitive and affective job insecurity.

H₂: The revised JIS's reliability is acceptable.

H₃: The revised JIS is negatively correlated with job satisfaction and organisational commitment.

H₄: The revised JIS is not correlated with an unrelated construct, i.e. physical tiredness during work.

H₅: The revised JIS shows predictive validity (i.e. a statistically significant regression coefficient) for organisational commitment.

H₆: The revised JIS is free of item bias and is equivalent across different groups (gender, age and educational level).

1.5 Research method

1.5.1 Literature Review

The literature review will focus on job insecurity and related constructs, and its effects on employee and work-related outcomes. The literature review will reflect how job insecurity is conceptualised in literature, with specific focus on how it is defined and what it consists of. It will also determine how job insecurity relates to different organisational factors, such as job satisfaction and organisational commitment. The De Witte (2000) version of the JIS will also be conceptualised to understand what it consists of, and what literature reports on this scale.

To this end, the following sources will be consulted to find applicable literature:

Examples of databases to be consulted:

- EbscoHost
- GoogleScholar
- SAePublications

Examples of journals to be consulted:

- *SAJIP (South African Journal of Industrial Psychology)*
- *The Journal of Organizational Behaviour*
- *The Southern African Business Review*
- *The Academy of Management Journal*
- *The Journal of Personality and Social Psychology*
- *The European Journal of Work and Organisational Psychology*
- *The Journal of Occupational and Organisational Psychology*

1.5.2 Research design

The study is aimed at determining the psychometric properties of a revised job insecurity measure. To ensure that reliable results are obtained to draw a conclusion, a sufficient amount of data needs to be collected. It can therefore be argued that a quantitative approach should be used. Struwig and Stead (2010, p. 4, 7) defined quantitative research as ‘a form of conclusive research involving large representative samples and fairly structured data collection procedures’ and that it ‘requires that the data collected can be expressed in numbers’.

A cross-sectional design will be implemented as the study will gather data from different sectors and job levels within the economy. If for some unforeseen reason the data collection process fails in the aforementioned, the proposed study will attempt to at least collect data from different organisations within a specific sector, or as a last option, different organisational departments within a specific organisation.

1.5.3 Research participants

The study is aimed at gathering data from different South African employees within the mining and manufacturing sectors. The population that will be invited to partake in the study will be selected by means of convenience sampling ($n = 400$). The minimum requirement of the population is that they should be employed in either the mining or the manufacturing sector, have at least a Grade 10/Standard 8 qualification, and must be competent in reading and writing in the English language.

1.5.4 Measuring instruments

Biographical information: The biographical questionnaire will be used to determine the biographical characteristics of the participants and will thus consist of questions of participants' age, gender, household status, educational level, employment and home language.

Job insecurity: An adjusted revised version of the De Witte (2000) JIS will be used for this study. Both positive and negative items were developed to add in the sub dimensions (affective and cognitive) respectively, i.e. additional positive and negative items that were lacking from the original scale, have been generated and added. The additional items have been developed in collaboration with De Witte himself. The items will be based on a 5-point Likert-type scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). New items were developed in consultation with the developer of the original scale, i.e. Prof Hans de Witte of Belgium, alongside Prof Jaco Pienaar and Dr Leon de Beer from the North-West University, Potchefstroom campus. The new items were developed by making use of the original Flemish version of the JIS. These items were translated into Afrikaans, and then into English. The final items were evaluated by all parties involved, and advised to add to the existing JIS to present a revised JIS.

The newly developed items were added to determine whether the sub dimensions of the revised JIS can more accurately reflect an employee's cognitive and affective dimension, or alternatively, reflect new dimensions all together. It includes the items of the De Witte (2000) JIS, as well as the newly developed items (Pienaar et al., 2013). The items displayed in bold and italic in Table 2 are the items that will be added to the existing questionnaire.

Table 2

Items of the Revised Job Insecurity Scale

	Affective Dimension	Cognitive Dimension
Positive	<ul style="list-style-type: none"> • <i>I am satisfied with my job security.</i> • <i>My job security gives me a feeling of safety.</i> • <i>I feel sure that I will keep my job.</i> • <i>I feel at ease in that I will keep my job in/for the near future.</i> • <i>The assurance/surety that I can keep working here makes me feel at ease.</i> 	<ul style="list-style-type: none"> • I am very sure that I will be able to keep my job. • There is only a small chance that I will become unemployed. • I am certain/sure of my job environment. • I think my future prospects within the organisation are good.
Negative	<ul style="list-style-type: none"> • I feel unsure about the future of my job. • I am worried over whether I will keep my job. • I am afraid that I will be dismissed/fired. • I fear that I might lose my job. 	<ul style="list-style-type: none"> • <i>There is a possibility that I might lose my job in the near future.</i> • <i>I think that I might be dismissed in the near future.</i> • <i>I think that I will be dismissed soon.</i> • <i>There is a strong possibility that I will be unemployed soon.</i>

Note: Items in bold italics are the new items of the proposed revised Job Insecurity Scale

Job satisfaction: The job satisfaction measure of Hellgren, Sjöberg and Sverke (1997) will be utilised to measure job satisfaction. The scale consists of three items on a five-point scale, ranging from 1 ('Strongly disagree') to 5 ('Strongly agree'). One example of the items states '*I am satisfied with my job*'. The Cronbach's alpha coefficients ranged from 0.80 to 0.95 in previous South African research (Pienaar, Sieberhagen & Mostert, 2007). This indicates that the measure has been reliably used in past studies.

Organisational commitment: The organisational commitment will be measured by making use of the Allen and Meyer (1990) scale. The scale consist of items on a 5-point scale, ranging from 1 ('Strongly disagree') to 5 ('Strongly agree'). One example of these items states '*I feel a strong sense of belonging to my organisation*'. Cronbach's alpha coefficients of above 0.70 have been reported for this scale (Allen & Meyer, 1990).

Physical tiredness during work: For discriminant validity, the items indicative of physical tiredness during work (Chalder et al., 1993) will be used. The scale consists of five items, each with two extreme statements on a semantic differential scale of five points. One example of the items states: '*During the last hours of work: I need to rest more or I can continue work without resting more*' with a rating between them from 1 to 5. The end-points of the scale allow the respondent to indicate '*I need to rest more*' or '*I can continue work without resting more*'.

1.5.5 Research procedure

A proposal will be made to the relevant management personnel about the purpose of the study. Management will also be informed on the procedure on which the data will be collected, to receive confirmation to conduct the study in the different organisations and departments. This study will make use of both electronic and paper-and-pencil-based questionnaires. Firstly, an email with a hyperlink to the online survey will be sent out to employees within the mining and manufacturing sector. In parallel, participants will be approached and asked whether they are willing to complete the paper-and-pencil questionnaire. The questionnaire will be distributed to the participants with an explanation on what the study entails and the voluntary nature of the study. All participants will be made aware that participation is voluntary, that their anonymity will be ensured, and that they are given the option of discontinuing participation in the research at any time.

1.5.6 Statistical analysis

In this study, latent variable modelling will be used with structural equation modelling (SEM) methods in Mplus 7.2 (Muthen & Muthen, 2014). Mplus uses the covariance matrix as the input type. Maximum likelihood analysis will be implemented to determine the difference in measurement models, i.e. the best-fitting models, namely: a four-factor, a two-factor (i.e. cognitive and affective job insecurity), another two-factor model (i.e. positive and negative factor) or a one-factor model.

Firstly, competing measurement models will be specified with confirmatory factor analysis (CFA) to investigate the best-fitting model and the accompanying factor loadings. Then regression paths will be added to the best fitting measurement model to ascertain predictive relationships, which will constitute the structural model to continue with the investigation of the hypotheses. The fit of the measurement and structural model will be judged by means of the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and RMSEA (Root Mean Square Error of Approximation). Additionally, for competing the measurement models, chi-square and Bentler's Information Criterion (BIC) values will also be considered. Acceptable fit criterion for the CFI is values ranging between 0.90 and 0.99; for the TLI, 0.90 and 0.99; and for the RMSEA between 0.05 and 0.08 (Van de Schoot, Lugtig & Hox, 2012). For chi-square and BIC, the model with the lowest value of each will be considered the best fitting.

A correlation matrix will be generated to provide information on the associations between the different variables. The level of statistical significance will be set at $p < 0.05$ and the effect sizes of correlation coefficients will be considered as follows: $r \geq 0.30$ (medium effect) and $r \geq 0.50$ (large effect). Furthermore, the standardised beta coefficients will be investigated to ascertain the predictive relationships in the specified paths of the structural model, specifically between the job insecurity constructs and specific outcome variables as hypothesised from the literature. Thus, correlations will be used to illustrate convergent and discriminant validity, while the regression paths to organisational commitment as outcome variable will be used to illustrate predictive validity

Both alpha and omega coefficients will be calculated for the constructs in all of the measurement models to determine the internal consistency of the measure (Raykov, 2012; Sijtsma, 2009). To establishing measurement invariance between different groups (gender, age and educational level), the following models will be investigated: Configural invariance, metric invariance, and scalar invariance. The configural model, also known as construct equivalence or structural equivalence, is used to determine what the similarities are of the factor structure across the groups (i.e. if the factor structure is the same in each group) (Milfont & Fischer, 2010; Van de Vijver & Leung, 1997). In comparing the differences in loadings among different population groups (metric invariance), the same unit of measurement is equally tested across the different groups (Van Herk, Poortinga & Verhallen, 2005). Therefore, the similarity of factor loadings will be tested for across groups (Milfont & Fischer, 2010). Lastly, a scalar model will be investigated to determine whether the measurement intercepts can be seen as equal across different groups (Van Herk, Poortinga & Verhallen, 2005). With the scalar invariance, it will be used to determine whether the same items are intercepting across the groups (i.e. that item difficulty are perceived to be similar) (Milfont & Fischer, 2010).

1.5.7 Ethical considerations

To make sure that the study is conducted in an ethically correct manner the following done:

- It will be clearly communicated that participation is voluntary and that participants should not feel forced to take part in the study.
- Informed consent will be provided by the participants themselves.

- All the data will be kept confidential in a safe place out of reach of the public.
- All the findings will be reviewed by the study leaders to ensure that the findings are accurate and correctly illustrated.
- Participants will be given the opportunity to read the research conclusions.
- In the case where an individual is faced with a language barrier, a translator will be of assistance.
- All participants will be treated fairly by ensuring that everyone has the same circumstances and environment.
- Clear instructions will be provided so that each participant understands what is expected of them.

1.6 Overview of the chapters

The mini-dissertation consists of three main chapters. Chapter 1 is the introductory chapter that highlights the purpose and objectives of the study, Chapter 2 is presented as a research article that discusses the research objectives and results, and Chapter 3 consists of the research conclusions, limitations and recommendations.

1.7 Chapter summary

Chapter 1 provided a discussion of the problem statement and research objectives. Furthermore, the research method and the measuring instruments were explained, followed by a brief overview of the chapters that follow.

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CHAPTER 2

RESEARCH ARTICLE

The validation of a revised version of the Job Insecurity Scale in South Africa

Abstract

Orientation: The De Witte (2000) Job Insecurity Scale (JIS) claims to measure the cognitive and affective components of job insecurity. However, there is a concern as to whether this is in fact a true reflection owing to the possibility that the JIS may rather measure negative and positive dimensions of job insecurity instead.

Research purpose: This research article aimed to investigate whether a revised version of the JIS can be validated to measure cognitive and affective dimensionalities of job insecurity, or alternatively, other dimensionalities after additional items have been added to the scale. Furthermore, it aimed to determine whether the constructs found in the revised JIS proves to be invariant across gender, age and education.

Motivation for the study: To determine whether the psychometric properties of a revised version of the JIS reveal the validity and reliability of the instrument. Furthermore, this research article discusses whether the revised version of the JIS is an accurate indicator of job insecurity and what its relation is to organisational outcomes (job satisfaction and organisational commitment).

Research design, approach and method: A quantitative research approach was used. This approach was utilised to statistically reflect the psychometric properties of the revised version of the JIS using data relating to job insecurity. A cross-sectional design was followed. The sample consisted of employees working in the mining sector ($n = 262$) and manufacturing industries ($n = 208$), constituting a total sample of 470 ($N = 470$).

Main findings: The results showed that the revised JIS consists of a two-factor model, namely positive (job security) and negative (job insecurity), and that it proves to have (item) content validity. Furthermore, it was found that the revised JIS is valid in indicating relationships with organisational outcomes (job satisfaction, organisational commitment). The study indicated that job insecurity has a negative relationship with job satisfaction, as well as a predictive positive relationship with organisational commitment. The revised JIS proved to have discriminant validity in that it does not relate to an unrelated construct (physical tiredness during work). Lastly, the revised JIS can be deemed valid across different demographic groups, in that it is unbiased and invariant across gender, age and educational level.

Practical/Managerial implications: Organisations may benefit from this, as this may provide organisations with a valid tool to determine the state of their employees' wellbeing and level of uncertainty, and the impact thereof. Organisations can therefore gain insight in the implication of job insecurity/job security on an employee's job satisfaction and organisational commitment.

Contribution/Value-add: This study provided insight into the psychometric properties of a revised version of the JIS. It furthermore explained the relationship between job insecurity and job security and organisational outcomes, as well as the equivalence thereof across gender, age and educational level variables.

Keywords: Job insecurity, psychometric properties, validation, measuring instrument, organisational commitment, job satisfaction, South Africa

Introduction

The job insecurity of employees remains an important phenomenon in the world of work. Organisations are making use of adaptive strategies (such as mergers, acquisitions and diversification) to remain competitive in the global market, and this is the main cause of the growing job insecurity among employees (Kriese, 2008). Locally, employees in South Africa are similarly faced with intense economic and political changes (Viljoen, 2004), for example strikes and transformation. Increased levels of job insecurity can have numerous negative organisational outcomes, such as low levels of job satisfaction (De Witte, 2005; Sverke, Hellgren & Näswall, 2002; Van Wyk & Pienaar, 2008) and low levels of organisational commitment (Ito & Brotheridge, 2006; Van Wyk & Pienaar, 2008). To this end, it is important for organisations to be able to identify the levels of job insecurity experienced within their organisation to address it.

De Witte (2000) developed the JIS, which aimed at measuring and determining an employee's cognitive and affective job insecurity. The JIS was validated by Pienaar, De Witte, Hellgren and Sverke (2013) for the South African context. However, Pienaar et al. (2013) still acknowledged possible limitations to this scale. Specifically, it was identified that the items that measure the employee's cognitive job insecurity are only phrased in a positive manner, whereas the affective items are only phrased in a negative manner. The construct validity of these two sub dimensions may therefore be contaminated by affective responses of those who complete the scale. Thus, employees may only answer the cognitive items with a positive mind set, and the affective items only with a negative mind set, since the events and experiences the scales describe are respectively positive and negative. This gives rise to the possibility that the relationship that exists between the current JIS construct(s) and the organisational outcomes may be somewhat distorted, as it may not accurately reflect an employee's cognitive and affective job insecurity, if at all.

This study proposes a revised version of the JIS. New items were developed and added to the sub dimensions to attempt to more accurately reflect the employees' cognitive and affective job insecurity, or alternatively reflect new dimensions altogether. Therefore, negatively phrased items will be added to the cognitive dimension, and positively phrased items will be added to the affective dimension, to create a balance of positive and negative items for the

components overall. The main objective of this study was to investigate the dimensionality and psychometric properties of this revised JIS within the South African context. In understanding the revised JIS, the importance of job insecurity and its outcomes, it is important to consider previous literature on the topic, to allow for a full understanding of constructs utilised in this study.

Literature review

Defining and operationalising job insecurity

De Witte (2000) defined job insecurity as ‘the perceived threat of job loss and the worries related to that threat’ (De Witte, 2005, p. 1). As a concept, job insecurity has a multidimensional nature, which considers an employee’s thoughts and feelings of losing certain valued aspects of their job (De Witte, 1999). However, another important multidimensional view of job insecurity that emerged, is that of Greenhalgh and Rosenblatt (1984), who conceptualised job insecurity as rather consisting of qualitative and quantitative components. The qualitative nature of job insecurity refers to an employee’s feelings towards the risk of losing some valued aspects of his or her job (such as occupational advances), while the quantitative nature refers to the fear of losing one’s job in its entirety (Pienaar et al., 2013). In contrast, job security can be referred to as an employee’s perception that their continuity in their job situation is secure (Davy, Kinicki & Scheck, 1997). As this study is focussed on a revised version of the JIS, there is no clarity on what outcomes may be revealed for job insecurity. This shows that for the purpose of this study, job insecurity is generally deemed an employee’s concern of possibly losing their job sometime in the future (Bosman, Buitendach & Laba, 2005; Davy, Kinicki & Scheck, 1997; De Witte, 1999; Greenhalgh and Rosenblatt, 1984).

Two main sub dimensions, namely the cognitive and the affective dimensions, of job insecurity have been distinguished (De Witte, 2000; Pienaar et al., 2013). Cognitive job insecurity refers to the probability of losing one’s job, while affective job insecurity refers to the employee’s fear of losing their job (Borg & Elizur, 1992). More recently, these sub dimensions are now also distinguished as one’s thoughts of job insecurity (cognitive), and one’s feelings towards job insecurity (affective) (Pienaar et al., 2013). Thus, taking cognitive

job insecurity in isolation, an understanding is created where a situation develops in which an employee may experience job insecurity (e.g. economic recession or political changes). Affective job insecurity in isolation refers to the extent to which an employee's internal reaction (emotions/feelings) towards these external factors affects their level of job insecurity. The intensity level and feeling of job insecurity will differ among different employees who are exposed to the same environment or situation (Sverke & Hellgren, 2002). Therefore, this study does not necessarily conceptualise job insecurity in terms of the employee's fear of losing job content or certain aspects thereof. Rather, it focusses on the sub dimensions loading onto job insecurity as consisting of an employee's perception of possibly losing their job (cognitive), and the feelings experienced in relation with that cognition (affective) (Pienaar et al., 2013; Stander & Rothmann, 2010).

Measuring job insecurity

In the South African context, Pienaar et al. (2013) have validated a shortened version of the JIS. The South African validated version of the De Witte (2000) JIS consists of eight items (four cognitive and four affective job insecurity items), as three of the original items were removed due to translation and application concerns. Pienaar et al. (2013) reported that the De Witte (2000) version of the JIS that was tailored to fit the South African context, sufficiently distinguishes between the affective and cognitive job insecurity dimensions of an employee within the South African workforce. The cognitive and affective dimensions illustrated Cronbach's alpha values of greater than 0.80. All the items of the shortened version of the JIS loaded on the intended sub dimensions, providing evidence that the items were measuring what they were intended to measure. The items of the JIS had no double loadings, and the two sub dimensions proved to be highly correlated ($r = 0.59$). Therefore, the cognitive and affective dimensions were also considered valid and reliable in measuring job insecurity across different sectors and groups within the South African workforce, and showed equivalence across various demographic groups. These demographics included gender, age, education, tenure and race.

However, it was noted by Pienaar et al. (2013) that the shortened version of the JIS provides some conceptual limitations, specifically concerning the (item) content validity, and the wording of the different items for the scale. As seen in Table 1 below, in terms of the wording, the items that are responsible for measuring the cognitive dimension are phrased

only in a positive manner (e.g. ‘I think that *I will be able to continue working here*’ (own italics)), whereas the items that are intended to measure the affective dimensions are phrased only in a negative manner (e.g. ‘I fear that *I might lose my job*’ (own italics)). This in turn may lead the participant to answer the cognitive items in a positive mind set and the affective items in a negative mind set. The shortened version of the JIS may consequently not measure an individual’s cognitive and affective job insecurity at all, but rather a positive and negative distinction of job insecurity that is more closely related to the individual’s affect, or job security vs. job insecurity.

Table 1

The items of the South African validated version of the De Witte (2000) JIS

	Affective Dimension	Cognitive Dimension
Positive		<ul style="list-style-type: none"> • I am very sure that I will be able to keep my job. • There is only a small chance that I will become unemployed. • I am certain/sure of my job environment. • I think my future prospects within the organisation are good.
Negative	<ul style="list-style-type: none"> • I feel unsure about the future of my job. • I am worried over whether I will keep my job. • I am afraid that I will be dismissed/fired. • I fear that I might lose my job. 	

An overview of Table 1 clearly reveals that positively framed items are missing from the affective dimension, while negatively framed items are missing from the cognitive dimension. The De Witte (2000) JIS measures an employee’s job insecurity by focusing on these sub dimensions (cognitive job insecurity and affective job insecurity). This study aimed to create an updated version of the JIS by adding nine newly developed items to the sub dimensions: four negative items to the cognitive dimension, and five positive items to the affective dimension. The first hypothesis of the study (H₁), therefore, is aimed at determining whether the newly added items have an effect on the dimensionality or construct validity of the JIS. That is, it could be expected that a two-factor model as reported by Pienaar et al. (2013), i.e. an affective dimension and a cognitive dimension, will be evident. However, there is also a possibility that a four-factor model could be found that consists of positive cognitive, negative cognitive, positive affective and negative affective. Additionally, the possibility exists that both a negative and positive factor could be identified, explaining a

two-factor model. Furthermore, this study aimed to determine if the scales for the 17-item revised version of the JIS will report satisfactory Cronbach alpha reliability scores ($\alpha \geq 0.70$) and omega coefficients, and H₂ is therefore that the revised JIS reports to be reliable.

Outcomes of job insecurity

Job insecurity is a stressor that generates stress reactions affecting numerous organisational outcomes (De Witte, 1999; Van Vuuren, 1990). Reactions to this stressor include increasingly negative organisational attitudes and behaviours (De Witte, 2005; Rocha, Crowel & McCarter, 2006; Sverke & Goslinga, 2003), decreasing job satisfaction (De Witte, 2005; Sverke, Hellgren & Näswall, 2002; Van Wyk & Pienaar, 2008), and decreasing organisational commitment (Ito & Brotheridge, 2006; Sverke, Hellgren, Näswall, Chirumbolo, De Witte & Goslinga, 2004; Van Wyk & Pienaar, 2008). Furthermore, feelings of distrust towards management (Ashford, Lee & Bobko, 1989), resistance to change (Greenhalg & Rosenblatt, 1984), decreasing performance (De Witte, 2000) and high levels of distress in general (Cascio, 1993; Van Wyk & Pienaar, 2008) have been found.

Thus, for the purpose of the current study, the effects of job insecurity on employees' job satisfaction and organisational commitment levels were considered. It was hypothesised that the job insecurity measure would also reveal evidence of a negative relation between job insecurity (including the sub dimensions) and the different organisational outcomes, namely job satisfaction and organisational commitment. This analysis will thus aim to illustrate and give proof to confirm the convergent validity of the new measure.

The relationship between job insecurity and job satisfaction

Within the working environment, it has consistently been found that employees that are experiencing job insecurity tend to demonstrate low levels of job satisfaction (Davy, Kinicki & Scheck, 1997; De Witte, 1999; Sverke & Hellgren, 2002). If an employee's levels of job satisfaction are high, they will demonstrate a positive affect towards various aspects of their job (De Jonge & Schaufeli, 1997). The meta-correlation in 72 studies indicated that the relationship between job insecurity and job satisfaction tends to be no less than -0.41 (Sverke, Hellgren & Näswall, 2002). This indicates that as the level of an employee's job insecurity increases, so his or her job satisfaction will decrease. Therefore, employees that

experience insecurity in terms of their future employment tend to have lower levels of job satisfaction when compared to that of employees that have a sense of security in their continued employment (Ashford, Lee & Bobko, 1989). Although job insecurity leads to low levels of job satisfaction, no implication exists that employees experiencing job security are satisfied in their job (De Witte, 2000). Overall, it can be seen that job insecurity has a negative effect on employees' job satisfaction, and furthermore has an impact on their life satisfaction (Lim, 1996). The study therefore hypothesises (H₃) that the revised JIS will prove to illustrate that job insecurity has a negative relationship with job satisfaction.

More recent research suggests that when viewing the organisational commitment of employees, job satisfaction should rather be noted for developmental purposes due to the high correlation between these constructs (Ladebo, 2008). However, the majority of researchers classify job satisfaction as either an outcome variable or an antecedent (Ladebo, Abubakar & Adamu, 2011). This article views job satisfaction as an outcome variable, in that it aims to determine whether the revised JIS proves to relate significantly to job satisfaction.

The relationship between job insecurity and organisational commitment

Chow (1994) stated that employees within the working domain exhibit organisational commitment when they are willing to continue employment with the organisation, illustrating a strong relationship between the parties. Such organisational commitment can be viewed according to the employee's adoption of the company's values and goals, and the willingness to provide the company with additional effort contributing to the company's wellbeing when required (Chow, 1994). This can be exhibited through the employee's level of connection with the organisation (Shahnawaz & Jafri, 2009), and is reflected in the employee's level of involvement within their organisation (Mowday, Porter & Steers, 1982). A lack of organisational commitment has been found to affect lower-level and higher-level employees similarly, resulting in a resignation from the organisation (De Witte, 2005).

Laba, Bosman and Buitendach (2005) indicated that if an employee experiences increased levels of job insecurity, this might lead to decreased levels of affective and normative commitment. This therefore illustrates that an employee experiencing job insecurity will be less inclined to commit themselves to the organisation and will not be willing to take part in the decision-making process or strive to improve the organisation. Employees with high

levels of job insecurity and low organisational commitment would rather resign from their current employment than be faced with the consequences of being unsure of their job (Greenhalgh & Rosenblatt, 1984; Selepe, 2004). Such lowered commitment levels of employees may have a serious negative impact on the survival of an organisation in the future (Greenhalgh & Rosenblatt, 1984). Employees that illustrate low levels of organisational commitment reveal lower levels of dedication towards the organisation, and may consequently attempt to sabotage the social atmosphere of the organisation (De Witte, 2005). This study provides insight in whether the revised version of the JIS proves to be valid with regard to job insecurity predicting low levels of organisational commitment (H₅).

The relationship between job insecurity and physical tiredness during work

In taking into account non-related organisational outcomes of job insecurity, a gap in research seems to exist. To date, no research has accounted for the relation between the De Witte (2000) version of the JIS and *physical tiredness during work*. Job insecurity is seen as a chronic stressor (Van Vuuren, 1990). Employees that are experiencing *prolonged* job insecurity will have increased physical symptomatology (Heaney, Israel & House, 1994), and will most likely start developing physical strains (De Witte, 1999). Furthermore, an employee with high levels of job insecurity can develop symptoms of ischaemic heart disease (Siegrist, Peter, Junge, Cremer & Siedel, 1990). As far back as 1990, it was noted by Roskies and Louis-Guerin that employees who are experiencing job insecurity make more use of medical services. Thus, it can be argued that employees experiencing high levels of job insecurity over time will illustrate a decrease in physical health (Nelson, Cooper & Jackson, 1995). However, it is unclear whether there is a relationship between physical tiredness during work and job insecurity in a cross-sectional sense as well. As physical tiredness during work is not known to be a stressor or a physical illness, and may have various non-work-related antecedents, it is unlikely that an employee currently experiencing job insecurity will be physically tired during work. This study therefore proposes that the revised version of the job insecurity will not be correlated with physical tiredness during work, and thus will establish discriminant validity (H₄).

Measurement invariance of the JIS across gender, age and educational level

Gender: It has been found that female employees within the bank and manufacturing sectors tend to experience higher levels of job insecurity than males (Kinnunen, Mauno, Nätti & Happonen, 2000). Sverke and Helgren (2002) support this statement, as it was reported that an employee's level of job insecurity is dependent on numerous different factors, such as gender. However, employees within the municipal, social and healthcare sectors indicated a similar level of job insecurity across gender (Kinnunen, Mauno, Nätti & Happonen, 2000). According to Buitendach, Rothmann and De Witte (2005), males experience higher levels of affective and cognitive job insecurity in comparison to females. Cheng and Chan (2008) do not support this statement, as they argue that job insecurity and its effects are no different when compared to gender. Traditionally, females have a lower concern of losing their job, when compared to men (Rosenblatt, Talmud & Ruvio, 1999). However, the effects and levels are nowadays similar across gender (Cheng & Chan, 2008). However, Buitendach, Rothmann and De Witte (2005) reported that males tend to have higher levels of both affective and cognitive job insecurity in comparison with that of females in a South African sample.

Age: The impact of feelings of insecurity in one's job is different across different age groups. Employees between the ages of 30 and 50 years' experience the highest levels of distress, in comparison with younger and older employees (Warr & Jackson, 1984). De Witte (1999) is of the opinion that the reason for this might be that employees between 30 and 50 years of age are faced with family responsibilities, and may feel that being unemployed at this age is frowned upon by society. However, Cheng and Chan (2008) reported that job insecurity and its relationship with job satisfaction and organisational commitment is the same for older and younger employees. However, in South African research again, Buitendach, Rothmann and De Witte (2005) have stated that employees older than 55 years of age tended to have higher levels of both cognitive and affective job insecurity than younger employees. They argued that this might be because these employees have a perception that their skillset is of lower importance, and that they may be asked to take early retirement.

Educational level: An employee's educational level has a minor effect on their level of affective job insecurity, but a moderate effect on their level of cognitive job insecurity (Buitendach, Rothmann & De Witte, 2005). However, according to Van Vuuren, Klandermans, Jacobson and Hartley (1991), the higher an employee's level of education is,

the lower their job insecurity level will be. Buitendach, Rothmann and De Witte (2005) stated that employees that have an educational level below Grade 12/Standard 10 are less inclined to experience job insecurity. However, they reported that the sample size from which these results were drawn was rather small.

Therefore, it can be argued that there is a difference in the level or effects of job insecurity across different biographical groups. The measurement tool used for determining the job insecurity of an employee needs to be free from bias and equivalent across different groups.

The South African version eight-item JIS model by Pienaar et al. (2013) proved to have a similar factor structure across gender, age and educational level. This study reported a measurement equivalence of above 0.95 for all three of these variables, proving that the De Witte (2000) JIS that was validated in the South African context can be deemed free from bias and equivalent across different groups.

This study will therefore provide some insight in whether the revised JIS with the newly added items also proves to be free from bias. Furthermore, equivalence across gender, age and educational level needs to be evident. This study introduces a revised version of the De Witte (2000) JIS, and it is hypothesised that similar results to what was reported on by Pienaar et al. (2013) will be found. Thus, this study aims to reveal that the construct(s) of the revised JIS is invariant across gender, age and educational level (H_6).

In summary, this study will investigate the following hypotheses:

- H₁: The revised JIS consists of a two-factor structure, i.e. cognitive and affective job insecurity with positive and negative items.
- H₂: The revised JIS constructs are reliable.
- H₃: Job insecurity has a negative relationship with job satisfaction.
- H₄: Job insecurity is not correlated with an unrelated construct, i.e. physical tiredness during work.
- H₅: Job insecurity shows a predictive relationship to organisational commitment.
- H₆: The constructs of the revised JIS are invariant across gender, age and educational level.

Research design

Research approach

The study followed the quantitative tradition by making use of a cross-sectional field survey to gather information from different sectors within the South African workforce. This allows for large amounts of data to be gathered, analysed and interpreted. Surveys were collected from the mining and manufacturing sectors. A cross-sectional design has been proven valuable when making use of descriptive and predictive functions (Shaughnessy & Zechmeister, 1997). This study used a cross-sectional design to gather data at one specific point in time, and allowed for variation in data to be identified.

Research method

Research participants

The study gathered data from different South African employees within the manufacturing and mining sectors. Convenience sampling was used to source participants from the mining sector ($n = 262$) and the manufacturing sector ($n = 208$), constituting a total sample of 470 participants ($N = 470$). The sample group consisted of employees that differed in age, gender, marital status, job function, qualifications and industry. The minimum requirements for the population was employment in either the manufacturing or the mining sector, a Grade 10/Standard 8 qualification or higher, and a competency in reading and writing English. The characteristics of the participants are displayed in Table 2.

Table 2

Characteristics of Participants (n = 470)

Item	Category	Frequency	Percentage (%)
Age (in years)	20 – 29	107	23.3
	30 – 39	183	39.9
	40 – 49	101	22.0
	50 – 59	58	12.6
	60 – 69	8	1.7
	70 +	2	4.0
	Missing values	11	-
Gender	Male	263	56.0
	Female	207	44.0
Household	Single (living alone)	92	19.7
	Married or living with a partner	295	63.0
	Living with parents	52	11.1
	Divorced or separated	15	3.2
	Remarried	14	3.0
	Missing values	2	-
Highest educational level	Grade 10/Standard 8	40	8.7
	Grade 11/Standard 9	42	9.1
	Grade 12/ Matric	158	34.2
	Technical College Diploma	69	14.9
	Technikon Diploma	44	9.5
	University Degree (BA, BComm, Bsc, Honours)	82	17.7
	Post Graduate Degree (Masters or Doctorate)	23	5.0
	Other	4	0.9
	Missing values	8	-

Table 2 continued

Characteristics of Participants (n = 470)

Item	Category	Frequency	Percentage (%)
Employment	Full-time	450	95.9
	Part-time	19	4.1
	Missing values	1	0.2
Home Language	Western Germanic	199	42.3
	African Languages	267	56.8
	Other	4	0.9

The participants ($N = 470$) comprised of 262 employees employed in the mining sector (55.74% of the sample), and 208 employees employed in the manufacturing sector (44.26% of the sample).

Regarding age, participants' ages ranged from 20 to 73 years, with a mean age of 37.92 and a standard deviation of 11.39. With reference to gender, 263 (56%) of the 263 participants indicated their gender as male and 207 (44%) as females. The majority of the participants stated that they were married or living with a partner (63%), whereas the minority indicated that they were remarried (3%). From the 470 participants that took part in the study, a total of 158 (34.2%) participants indicated that their highest educational level was matric (Grade 12), and only 23 participants (5%) stated that they had a Post Graduate degree (Masters and Doctorates). Almost all of the participants were employed on a full-time basis (95.9%), with 19 (4.1%) employed part-time. A total of 267 participants that contributed to the study indicating their home language as being an African-language (56.8%), whereas 199 participants' language was of Western Germanic origin (42.3%).

Measuring instruments

Biographical information: The biographical questionnaire was used to determine the biographical characteristics of the participants and thus consisted of questions investigating participants' age, gender, household, educational level, employment and home language.

Job insecurity: A revised version of the De Witte (2000) JIS was used for this study. The original eight items were included. Both positive and negative items were developed and added to the sub dimensions of affective and cognitive job insecurity respectively, so that additional positive and negative items that were lacking from the original scale were present. The items had been based on a 5-point Likert-type scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

New items were developed in consultation with the developer of the original scale, i.e. Prof Hans de Witte of Belgium, alongside Prof Jaco Pienaar and Dr Leon de Beer from the North-West University, Potchefstroom campus. The new items were developed by making use of the original Flemish version of the JIS. These items were redeveloped in Afrikaans, and then translated into English. The final items were evaluated by all parties involved, and advised to add to the existing JIS to present a revised JIS.

Table 3 presents the items that were used in the study. It included the items of the De Witte (2000) JIS as well as the newly developed items (Pienaar et al., 2013). The items displayed in bold and italic are the items that were added to the existing questionnaire.

Table 3

The Items of the Revised JIS

	Affective Dimension	Cognitive Dimension
Positive	<ul style="list-style-type: none"> • <i>I am satisfied with my job security.</i> • <i>My job security gives me a feeling of safety.</i> • <i>I feel sure that I will keep my job.</i> • <i>I feel at ease in that I will keep my job in/for the near future.</i> • <i>The assurance/surety that I can keep working here makes me feel at ease.</i> 	<ul style="list-style-type: none"> • I am very sure that I will be able to keep my job. • There is only a small chance that I will become unemployed. • I am certain/sure of my job environment. • I think my future prospects within the organisation are good.
Negative	<ul style="list-style-type: none"> • I feel unsure about the future of my job. • I am worried over whether I will keep my job. • I am afraid that I will be dismissed/fired. • I fear that I might lose my job. 	<ul style="list-style-type: none"> • <i>There is a possibility that I might lose my job in the near future.</i> • <i>I think that I might be dismissed in the near future.</i> • <i>I think that I will be dismissed soon.</i> • <i>There is a strong possibility that I will be unemployed soon.</i>

Note: Items in bold and italics are the new items of the revised version of the Job Insecurity Scale

Job satisfaction: The job satisfaction measure of Hellgren, Sjöberg and Sverke (1997) was used to measure job satisfaction. The scale consists of three items on a five-point scale,

ranging from 1 ('Strongly disagree') to 5 ('Strongly agree'). One example of the items states: '*I am satisfied with my job*'. The Cronbach's alpha coefficients ranged from 0.80 to 0.95 (Pienaar, Sieberhagen & Mostert, 2007). This indicates that the measure has been reliably used in past South African studies.

Organisational commitment: The participants' organisational commitment was measured by making use of the Allen and Meyer (1990) scale. The scale consisted of items on a 5-point scale, ranging from 1 ('Strongly disagree') to 5 ('Strongly agree'). One example of these items stated: '*I feel a strong sense of belonging to my organisation*'. Cronbach's alpha coefficients of above 0.70 have been reported for this scale (Allen & Meyer, 1990).

Physical tiredness during work: For discriminant validity, the physical tiredness during work scale (Chalder et al., 1993) was used. The scale consisted of five items, each with two extreme statements on a semantic differential scale of five points. One example of the items stated: '*During the last hours of work: I need to rest more or I can continue work without resting more*', with a rating between them from 1 to 5, with the words 'rest more' and 'without resting more' as anchors.

Research procedure

The relevant management personnel were informed about the purpose of the study and how the data was to be collected, to receive confirmation to conduct the study in the different organisations and departments. This study made use of both electronic and paper-and-pencil-based questionnaires. Firstly, an email with a hyperlink to the online survey was sent out to employees within the organisations in the mining and manufacturing sectors. In parallel, participants were approached and asked whether they were willing to complete the paper-and-pencil questionnaire. The questionnaire was distributed to the participants with an explanation of what the study entailed and the voluntarily nature of the study. All participants were aware that participation was voluntary, that their anonymity was ensured, and that they had the option of discontinuing participation in the research at any time.

Statistical analysis

In this study, latent variable modelling was used with structural equation modelling (SEM) methods in Mplus 7.2 (Muthen & Muthen, 2014). Mplus uses the covariance matrix as the input type. Maximum likelihood estimation was implemented to estimate the difference in measurement models, i.e. the best-fitting models, namely: a four-factor, a two-factor, or one-factor model.

Firstly, competing measurement models were specified with confirmatory factor analysis to investigate factor loadings and other descriptive statistics. Regression paths were then added, to ascertain predictive relationships in a structural model. The fit of the measurement and structural models was judged by means of the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and RMSEA (Root Mean Square Error of Approximation). Additionally, for competing the measurement models, chi-square and Bayesian Information Criterion (BIC) values were also considered. Acceptable fit criterion for the CFI were values ranging between 0.90 and 0.99; for the TLI, 0.90 and 0.99; and for the RMSEA between 0.05 and 0.08 (Van de Schoot, Lugtig & Hox, 2012). For chi-square and BIC, the model with the lowest value of each was considered the best fitting.

A correlation matrix was generated to provide information on the associations between the different variables. The level of statistical significance was set at $p < 0.05$ and the effect sizes of correlation coefficients were considered as follows: $r \geq 0.30$ (medium effect) and $r \geq 0.50$ (large effect). Furthermore, the standardised beta coefficients were investigated to ascertain the relationships between specified paths in the structural model, specifically between the job insecurity constructs and specific outcome variables. Thus, convergent and discriminant validity was illustrated by the correlations, while predictive validity was illustrated by the regression path to organisational commitment as outcome variable.

Both alpha and omega coefficients were calculated for the constructs in all the measurement models to determine the internal consistency of the measure (Raykov, 2012; Sijtsma, 2009). In establishing measurement invariance between gender, age and educational level groups the following models were investigated: Configural invariance, metric invariance, and scalar invariance. The configural model, also known as construct equivalence or structural equivalence, was used to determine what the similarities were of the factor structure across

the groups (i.e. if the factor structure was the same in each group) (Milfont & Fischer, 2010; Van de Vijver & Leung, 1997). In comparing the differences in loadings among different population groups (metric invariance), the same unit of measurement was equally tested across the different groups (Van Herk, Poortinga & Verhallen, 2005). Therefore, the similarity of factor loadings was tested for across groups (Milfont & Fischer, 2010). Lastly, a scalar model was investigated to determine whether the measurement intercepts could have been seen as equal across different groups (Van Herk, Poortinga & Verhallen, 2005). With the scalar invariance, it was determined whether the same items were intercepting across the groups (i.e. that item difficulty was perceived to be similar) (Milfont & Fischer, 2010).

Results

Measurement models

Four measurement models were competed with confirmatory factor analysis. Model 1 tested a one-factor model for job insecurity. Model 2 tested a two-factor model for cognitive and affective job insecurity, i.e. all the positive and negative items for cognitive job insecurity were loaded onto one factor, and all the positive and negative items for affective job insecurity were loaded onto the other factor. Model 3 was similar to the previous model, but considered a factor with all the positive items from both cognitive and affective job insecurity, and the other factor included all the negatively phrased items from both cognitive and affective job insecurity. Lastly, a four-factor model was tested, which included each job insecurity factor as an individual construct (i.e. positive cognitive, negative cognitive, positive affective, and negative affective).

Table 4 presents the results of the competing measurement models that were tested.

Table 4

Results of Competing the Measurement Models

Model	χ^2	df	CFI	TLI	RMSEA	SRMR	BIC
1: One-factor	1313.74	104	0.60	0.54	0.16	0.12	22318.35
2: Two-factor (Cognitive and affective)	1067.32	103	0.68	0.62	0.15	0.12	22080.68
3: Two-factor (Positive and negative)	383.30	103	0.92	0.91	0.07	0.06	21346.35
4: Four-factor	467.98	98	0.88	0.85	0.09	0.06	21490.08

Notes: χ^2 = chi-square; df = degrees of freedom; CFI = Comparative fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error of approximation; BIC = Bayesian Information Criterion

Results from the CFA revealed that the measurement model fit the data. As can be seen from Table 4, Model 3 reflected the best-fitting measurement model. It is important to note that Model 2 and Model 4 resulted in non-positive definite errors in the estimation; indicating correlations greater than 1.00. These model results thus reject H_1 ; a two-factor model was indeed the best-fitting model, but it was not for cognitive and affective job insecurity as hypothesised; but rather for a two-factor model loading onto a positive factor (job security) and negative factor (job insecurity). More specifically, the following values were generated for Model 3 as per the considered fit indices: CFI (0.92), TLI (0.91), and RMSEA (0.07).

In Table 5, the standardised factor loadings of model 3 are shown.

Table 5

Standardised Loadings for the Latent Factors

Factor	Item	Loading	S.E.	p	R ²
Positive (Job security)	I am very sure that I will be able to keep my job. (COGPOS1)	0.69	0.03	0.01**	0.48
	There is only a small chance that I will become unemployed. (COGPOS2)	0.16	0.05	0.01**	0.02*
	I am certain/sure of my job environment. (COGPOS3)	0.69	0.03	0.01**	0.47
	I think my future prospects within the organisation are good. (COGPOS4)	0.71	0.03	0.01**	0.51
	I am satisfied with my job security. (AFFPOS1)	0.60	0.03	0.01**	0.36
	My job security gives me a feeling of safety. (AFFPOS2)	0.71	0.03	0.01**	0.50
	I feel sure that I will keep my job. (AFFPOS3)	0.49	0.04	0.01**	0.24
	I feel at ease in that I will keep my job in/for the near future. (AFFPOS4)	0.77	0.03	0.01**	0.59
	The assurance/surety that I can keep working here makes me feel at ease. (AFFPOS5)	0.83	0.02	0.01**	0.68
	There is a possibility that I might lose my job in the near future. (COGNEG1)	0.67	0.03	0.01**	0.45
Negative (Job insecurity)	I think that I might be dismissed in the near future. (COGNEG2)	0.74	0.03	0.01**	0.55
	I think that I will be dismissed soon. (COGNEG3)	0.69	0.03	0.01**	0.47
	There is a strong possibility that I will be unemployed soon. (COGNEG4)	0.68	0.03	0.01**	0.46
	I feel unsure about the future of my job. (AFFNEG1)	0.39	0.04	0.01**	0.15
	I am worried over whether I will keep my job. (AFFNEG2)	0.48	0.04	0.01**	0.23
	I am afraid that I will be dismissed/fired. (AFFNEG3)	0.80	0.02	0.01**	0.64
	I fear that I might lose my job. (AFFNEG4)	0.81	0.02	0.01**	0.65

Notes: COGPOS = Cognitive positive; COGNEG = Cognitive negative; AFFPOS = Affective positive; AFFNEG = Affective negative;

* = Non-significant R-square value; ** = p < 0.01

As can be seen from Table 5, all the positive and negative items loaded onto the respective positive (job security) and negative (job insecurity) factors. The R^2 of the items revealed that one of the positively structured questions (COGPOS2) did not explain a statistically significant amount of variance ($p = 0.09$). The factor loading for this item was also low (0.16). Based on Model 3, the other study variables (job satisfaction, organisational commitment, physical tiredness at work) were then added to establish the measurement model for further investigation in the structural model. This final measurement model also had acceptable fit indices (CFI = 0.91; TLI = 0.90; RMSEA = 0.06). These results, therefore, do not support H₂ in that the constructs of the revised JIS did not show acceptable reliability in measuring cognitive and affective job insecurity. However, the alternate constructs did show an acceptable level of reliability, i.e. for positive (job security) and negative (job insecurity).

Table 6 presents the positive and negative constructs with their respective items, as confirmed by the standardised factor loadings of the CFA for Model 3:

Table 6

The items of the revised JIS that were confirmed in the CFA

Job insecurity	Job security
<ul style="list-style-type: none"> • There is a possibility that I might lose my job in the near future. 	<ul style="list-style-type: none"> • I am very sure that I will be able to keep my job.
<ul style="list-style-type: none"> • I think that I might be dismissed in the near future. 	<ul style="list-style-type: none"> • There is only a small chance that I will become unemployed.
<ul style="list-style-type: none"> • I think that I will be dismissed soon. 	<ul style="list-style-type: none"> • I am certain/sure of my job environment.
<ul style="list-style-type: none"> • There is a strong possibility that I will be unemployed soon. 	<ul style="list-style-type: none"> • I think my future prospects within the organisation are good.
<ul style="list-style-type: none"> • I feel unsure about the future of my job. 	<ul style="list-style-type: none"> • I am satisfied with my job security.
<ul style="list-style-type: none"> • I am worried over whether I will keep my job. 	<ul style="list-style-type: none"> • My job security gives me a feeling of safety.
<ul style="list-style-type: none"> • I am afraid that I will be dismissed/fired 	<ul style="list-style-type: none"> • I feel sure that I will keep my job.
<ul style="list-style-type: none"> • I fear that I might lose my job. 	<ul style="list-style-type: none"> • I feel at ease in that I will keep my job in/for the near future.
	<ul style="list-style-type: none"> • The assurance/surety that I can keep working here makes me feel at ease.

As seen in Table 6, the revised JIS consisted of two main constructs, namely job insecurity and job security. The job insecurity factor consisted of the eight negatively phrased items, whereas the job security construct consisted of the nine positively phrased items.

Correlation and reliability coefficients for the latent variables

Table 7 presents the correlation matrix for the latent variables of the research model.

Table 7

Correlation Matrix for the Latent Variables

Variables	Job security	Job insecurity	Job satisfaction	Commitment	Tiredness
Job security	(0.86 / 0.86)	-	-	-	-
Job insecurity	-0.44**	(0.86 / 0.86)	-	-	-
Job satisfaction	0.63***	-0.23*	(0.84 / 0.84)	-	-
Commitment	0.54***	-0.09	0.58***	(0.79 / 0.79)	-
Tiredness	0.10	-0.03	0.21*	0.18*	(0.83 / 0.84)

Notes: Alpha / Omega reliability coefficients in brackets on the diagonal; * = Statistically significant; ** = Medium practical significance; *** = Large practical significance

As can be seen from Table 7, all the correlations reported a significant Cronbach alpha and omega reliability score ($\alpha > 0.70$). The results indicate that there was a practically significant negative relationship between the level of job insecurity and job security among mining and manufacturing workers in South Africa (medium effect; $r = -0.44$). The results indicate a practically significant positive relation between the level of job satisfaction and job security (large effect; $r = 0.63$), as well as a statistically significant negative relationship between job satisfaction and job insecurity ($r = -0.23$). These results support H₃, in that job insecurity has a negative relationship with job satisfaction. Furthermore, there was a practically significant positive relationship between organisational commitment and job security (large effect; $r = 0.54$), and a practically significant positive relationship between organisational commitment and job satisfaction (large effect; $r = 0.58$). The results furthermore support H₄ in that the revised JIS is not correlated with an unrelated construct, as no significant relationship was found between job insecurity and physical tiredness during work ($r = -0.03$; $p > 0.05$). Similarly, no significant relationship was found between job security and physical tiredness during work ($r = 0.10$; $p > 0.05$). However, there was a statistically significant positive

relationship between physical tiredness during work and job satisfaction ($r = 0.21$; $p < 0.05$), and a statistical practical significant positive relationship between physical tiredness during work and organisational commitment ($r = 0.18$; $p < 0.05$).

In Table 8 regression results for the three structural models that were competed are presented: In the first model both regression paths for job insecurity and job security were left free; in the second, all the job insecurity paths were constrained to zero and all the job security paths left free; and in the third and final structural model the job security paths are constrained to zero and job insecurity were left free.

Table 8
Regression Results for the Competed Structural Models

Description of model	Regression path	β	S.E.	p	Result
1: Structural Model 1	Positive \rightarrow Job satisfaction	0.65	0.05	0.001	Significant
	Positive \rightarrow Commitment	0.62	0.05	0.001	Significant
	Negative \rightarrow Job satisfaction	0.06	0.05	0.313	Not Significant
	Negative \rightarrow Commitment	0.18	0.06	0.002	Significant
2: Structural Model 2	Positive \rightarrow Job satisfaction	0.64	0.03	0.001	Significant
	Positive \rightarrow Commitment	0.51	0.04	0.001	Significant
	Negative \rightarrow Job satisfaction	0.00*	0.00	0.999	n/a
	Negative \rightarrow Commitment	0.00*	0.00	0.999	n/a
3: Structural Model 3	Positive \rightarrow Job satisfaction	0.00*	0.00	0.999	n/a
	Positive \rightarrow Commitment	0.00*	0.00	0.999	n/a
	Negative \rightarrow Job satisfaction	-0.30	0.06	0.001	Significant
	Negative \rightarrow Commitment	-0.15	0.07	0.032	Significant

Notes: β = Beta coefficient; S.E. = Standard error; p = Two-tailed statistical significance; * = Path constrained to zero

Table 8 reveals that the regression of the structural model (model 1; no constrained paths) indicates that job security has a significant predictive relationship with job satisfaction ($\beta = 0.65$; $p = 0.001$), as well as with organisational commitment ($\beta = 0.62$; $p = 0.001$). No statistically significant prediction was found between job insecurity and job satisfaction ($\beta = 0.06$; $p = 0.313$). However, job insecurity had a statistically significant prediction with organisational commitment ($\beta = 0.18$; $p = 0.002$), which provided evidence against H_5 , which expected a negative result. However, as can be seen from structural Model 3 when the

positive factor is constrained to zero, the effect from the negative factor to commitment is indeed negative (confirming H₅). This indicates that once the positive factor is brought into the model and its variance is introduced, the sign of the regression changes, indicating the potential of a confounding or third factor that is still unknown.

Competing structural models and regression results

Regression paths were added to the final measurement model to constitute the structural model; both job satisfaction and organisational commitment were regressed on both job security and job insecurity.

Table 9 presents the standardised regression paths in the research model.

Table 9

Results of the Competed Structural Models

Structural models	χ^2	df	CFI	TLI	RMSEA	SRMR	BIC
1: Structural Model 1	1002.10	367	0.90	0.89	0.06	0.06	40100.86
2: Structural Model 2	1016.13	369	0.90	0.89	0.06	0.07	40108.94
3: Structural Model 3	1165.99	369	0.88	0.87	0.07	0.12	40258.80

Notes: χ^2 = chi-square; df = degrees of freedom; CFI = Comparative fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error of approximation; BIC = Bayesian Information Criterion

The results from Table 9 show that structural Model 1 reflected the best fit. This is evident from the lowest chi-square and BIC values, which indicate the best fit for structural Model 1 [$\chi^2(367) = 1002.10$, $p < 0.05$]. More specifically, the following values were generated for Structural Model 1: χ^2 (1002.10) and BIC (40100.86). As confirmed above, the results indicate that the best fitting model is Structural Model 1.

Measurement invariance testing based on gender, age and educational level

Table 10 reports on the invariance testing to determine whether the revised JIS is valid across gender.

Table 10

Results of the Invariance testing based on Gender for Model 3

Structural models	$\Delta\chi^2$	df	p
Metric against Configural	18.221	15	0.251
Scalar against Configural	39.328	30	0.119
Scalar against Metric	21.107	15	0.133

Notes: χ^2 = change in chi-square; df = degrees of freedom.

Results from Table 10 indicate that the revised JIS showed strong measurement invariance for both males and females, as there were no significant differences for metric against configural ($p = 0.251$), scalar against configural ($p = 0.119$) or scalar against metric ($p = 0.133$). This indicates that the constructs of the revised JIS are invariant across gender.

Table 11 reports on the invariance testing to determine whether the revised JIS is valid across different age groups.

Table 11

Results of the Invariance testing based on Age group

Structural models	$\Delta\chi^2$	df	p
Metric against Configural	13.800	14	0.465
Scalar against Configural	34.825	28	0.175
Scalar against Metric	21.025	14	0.101

Notes: χ^2 = change in chi-square; df = degrees of freedom.

Results from Table 11 indicate that the revised JIS showed strong measurement invariance for both younger employees (20 - 35 years of age) and older employees (36 + years of age), as there were no significant differences for metric against configural ($p = 0.465$), scalar against configural ($p = 0.175$) or scalar against metric ($p = 0.101$). This indicates that the constructs of the revised JIS are invariant across age groups.

Table 12 reports on the invariance testing to determine whether the revised JIS is valid across different educational level groups.

Table 12

Results of the Invariance testing based on Educational level.

Structural models	$\Delta\chi^2$	<i>df</i>	<i>p</i>
Metric against Configural	16.834	14	0.265
Scalar against Configural	37.409	28	0.110
Scalar against Metric	20.575	14	0.113

Notes: χ^2 = change in chi-square; *df* = degrees of freedom.

Results from Table 12 indicate that the revised JIS showed strong measurement invariance for both employees with no tertiary education and employees with a tertiary education, as there were no significant differences for metric against configural ($p = 0.265$), scalar against configural ($p = 0.110$) or scalar against metric ($p = 0.113$). This indicates that the constructs of the revised JIS are invariant across educational level groups.

The aforementioned results confirm H₆, in that the revised JIS is invariant across gender, age and educational level groups.

Discussion

The main aim of this study was to validate a revised JIS scale for the South African context. More specifically, the study sought to determine if the scale is valid and reliable for future use by investigating its psychometric properties.

The first objective of this study was to determine if a revised version of the JIS had a two-factor structure, i.e. cognitive and affective job insecurity. The study revealed that the revised JIS did indeed consist of a two-factor model (Model 3), which was deemed to be the best-fitting measurement model for the purpose of the scale. However, this two-factor model did not reflect the expected sub dimensions (cognitive and affective) as found by De Witte (2000), but rather revealed factor loadings onto a positive (job security) and a negative factor (job insecurity). Results showed that all the positive items loaded onto a positive dimension (job security) and all the negative items loaded onto a negative (job insecurity) factor. This finding is contradictory to the findings of Pienaar et al. (2013), who distinguished and validated the De Witte version of the JIS according to the cognitive and affective domains for the South African context. The findings of the current study may suggest that the job

insecurity construct could indeed function in a more dichotomous nature, indicating 'secure' to 'insecure' instead of cognitive and affective. H_1 is thus rejected; although there is a confirmation of a two-factor model as found by De Witte (2000) and Pienaar et al. (2013), it was not found for cognitive and affective domains as hypothesised, but rather a dimensionality of secure (job security) versus insecure (job insecurity).

The second objective of this study was to determine the reliability of the revised version of the JIS. Pienaar et al. (2013), who distinguished and validated the original De Witte version of the JIS according to the cognitive and affective domains for the South African context, found acceptable reliability for those dimensions. However, in this study the reliability of the positive (job security) and negative (job insecurity) constructs had to be considered. Thus, by adding the positively and negatively phrased items to the cognitive and affective dimension respectively, and finding this model to be the best fit, a change in the consideration of the reliability of the construct was also necessitated. Both the job security and job insecurity constructs had acceptable reliability (α & $\omega > 0.70$), confirming H_2 .

The third objective was to investigate the relationship of the revised JIS constructs with job satisfaction. Both the positive (job security) and negative (job insecurity) constructs showed acceptable regression paths for job satisfaction. This means that as the level of job security changes, so will the level of job satisfaction alter in relation. This is in line with past research, for example that of Ashford, Lee and Bobko (1989), De Witte (2005), Sverke, Hellgren and Näswall (2002) and Van Wyk and Pienaar (2008), who found that employees experiencing job insecurity has lower levels of job satisfaction than employees feeling secure in their future employment. H_3 was therefore confirmed, as there is a negative relationship between job insecurity and job satisfaction, although only to a minor extent.

In terms of discriminant validity, the results showed that there was no significant association between job insecurity and physical tiredness during work. H_4 was thus supported.

In investigating the ability of the constructs of the revised JIS to reflect accurate predictions, the regressions in the structural model were used to determine the relationship of job insecurity with organisational commitment. Similar to recent research (Ito & Brotheridge, 2006; Laba, Bosman & Buitendach, 2005; Sverke et al., 2004; Van Wyk & Pienaar, 2008), the investigation showed that there is a negative predictive relationship between job

insecurity and organisational commitment. This indicates that if an employee is exposed to job insecurity for prolonged periods, their level of organisational commitment should decrease. The results therefore confirm H_5 , in that there is a significant negative predictive relationship between job insecurity and organisational commitment. Additionally, the predictive relationship from job security to organisational commitment was also positive.

The final objective of the study was to investigate the measurement invariance of the revised JIS. The results explained that the positive and negative constructs of the revised JIS are invariant across males and females. This indicates that the revised JIS is able to provide an accurate and true reflection of an employee's level of job security and job insecurity, regardless of their gender. The revised JIS is therefore valid across gender groups within the South African context, and the results of the scale will thus not be affected by the gender of the employee responding to the items of the revised JIS. Pienaar et al. (2013) reported similar results in that the cognitive/affective dimensions of the JIS were found to be invariant across gender.

Similarly, the revised JIS proved to be valid across different age groups. In investigating the revised JIS's validity across age, the sample was divided into two subgroups, namely 'younger' employees and 'older' employees. As in the study by Cheng and Chan (2008), the younger age group consisted of employees ranging from 20 to 35 years of age, whereas the older age group consisted of employees that were 36 years of age and older. The results indicated that the constructs of the revised JIS are invariant across these age groups, implying that regardless of the age of the employee responding to the items of the revised JIS, it should provide an accurate and true reflection of the employee's job insecurity and job security levels. These results are also in line with the findings of Pienaar et al. (2013), as they reported in their study that the cognitive/affective dimensions of the JIS was valid across different age groups.

Lastly, it was important that the revised JIS should prove invariant across different educational levels, as it would reflect similar results to that of Pienaar et al. (2013), who found that the cognitive/affective dimensions of the JIS are valid regardless of educational level. The sample was divided into two subgroups, namely employees that do not have a tertiary education and employees that have a tertiary education. The test for measurement invariance across these groups showed that the constructs of the revised JIS were invariant

across the educational groups, supporting the similar findings of Pienaar et al. (2013). H_6 is therefore confirmed in that the revised JIS is valid regardless of the gender, age and educational level of the employee.

Taking the aforementioned into consideration, it can be concluded that the revised JIS is unbiased and strongly invariant across the different set groups (age, gender and educational level) in terms of the job security/insecurity conceptualisation derived from the current investigation. Although the dimensionality of this scale still remains somewhat unclear, these results jointly still indicate that the items developed originally (De Witte, 2000) and for the purpose of this study, offer promise for the equivalent and unbiased measurement of job insecurity in South African populations – regardless of the dimensionality of the construct.

Practical implications

This study contributed to the understanding of the measurement of job security and job insecurity in employees. As found by the study, the revised version of the JIS revealed that employees have both job security and job insecurity. This reveals that by adding differently phrased items to a previously validated JIS, a new factor structure became apparent. The altered factors differ from previous findings of cognitive job insecurity and affective job insecurity, in that two factors, that of job security (positive items) and job insecurity (negative items), emerged. The way in which the items are phrased therefore has an effect on what the participant reports on, raising the question of whether the validated version of the De Witte (2000) JIS did in fact report on an employee's cognitive and affective job insecurity. This thereby provides a new finding to the academic world of a scale that possibly more accurately measures the job insecurity and security of employees. This also allows management to more accurately diagnose the level of job insecurity in their organisation to customise interventions that would reduce job insecurity and lead to desired organisational outcomes

Limitations and recommendations

In this study, certain limitations can be identified. Discussing these limitations is vital, as they might affect the accuracy of the results established. The researcher seeks to be transparent by

fully disclosing possible shortcomings of the research. In the process, further recommendations are suggested to counteract these downfalls in future research.

One of the limitations identified in the study is the narrow range of participants utilised to collect data for validation. Because only employees from the mining and manufacturing sectors were used, data may have been warped due to the nature of those sectors. There is a possibility that such a sample may not be an accurate representation of the working population.

Secondly, the study made use of a cross-sectional research approach in collecting data. This approach can have a limiting effect on the results, as no causal effect could definitively be proven.

A final limitation pertains to the fact that the study made use of a self-reporting questionnaire. This might have skewed the results, since employees may not have reported a true reflection of their job satisfaction, organisational commitment and physical tiredness during work in relation to their job security and job insecurity. The reporting from the employees is therefore subject to the mind set in which the participants answered the questionnaire, in terms of the time of day as well as their mood at the given time. Employees may furthermore have attempted to exhibit themselves in a positive light, possibly reducing the probability of identifying a stronger relation of job insecurity to outcomes.

In taking the findings of this study regarding the revised JIS into consideration, some recommendations can be made for practice. Job security has a major positive effect on an employee's job satisfaction and organisational commitment. It is important to note that employees with high levels of job security will be more inclined to reveal satisfaction in their job and a higher level of commitment to the organisation. It is very important for management to be aware of their workforce's level of job security and job insecurity. This will allow organisations to be aware of the overall health of their human capital, and indicate any interventions needed to increase employees' job satisfaction and organisational commitment.

It is recommended that future research select a larger sample size from different industries in an attempt to replicate the results. This may also allow for comparison between multiple

industries of the job insecurity experienced, and the effect thereof. It was found that once the positive factor (job security) is brought into the model, and its variance introduced, that the direction of the regression changes, indicating the potential of a confounding or third factor variable as yet unknown. This leads to the introduction of a second recommendation for future research, namely to determine whether a possible third factor variable does exist; other statistical investigations should also be attempted with new samples to assist in solving this predicament, i.e. confirmatory or exploratory bi-factor analyses. This can possibly control for the variance of the positive and negative items and show any additional factors that may be at play.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

Conclusions, limitations and recommendations

In this chapter, the conclusions pertaining to this study are presented, aligned to the general and specific objectives specified. The limitations that the study was faced with, as well as the recommendations for organisations, are also discussed. Lastly, this chapter presents recommendations and suggestions for future research.

3.1 Conclusions

The Job Insecurity Scale (JIS), developed by De Witte (2000), aims at measuring and determining an employee's cognitive and affective job insecurity. The JIS with the cognitive and affective dimensions was validated by Pienaar et al. (2013) for the South African context to present a valid and reliable tool to measure the job insecurity levels of employees. Pienaar et al. (2013) also acknowledged possible limitations to the original JIS scale which they validated. Specifically, it was identified that the items that measure the employee's cognitive job insecurity are phrased in a positive manner only; similarly, the affective items were phrased only in a negative manner. The construct validity of these two sub dimensions may therefore have been contaminated by affectivity of those who completed the scale. Thus, employees may only answer the cognitive items with a positive mind set, and the affective items only with a negative mind set, since the events and experiences the scales describe are respectively positive and negative. This gives rise to the possibility that the relationship that exists between the current JIS constructs (i.e. cognitive and affective job insecurity) and individual and organisational outcomes may be somewhat distorted.

This study added newly developed positive and negative items to the cognitive and affective dimensions of the JIS, respectively. This was done in collaboration with the original developer (De Witte, 2000) and validators of the JIS in most recent South African research (Pienaar et al., 2013). The general objective of the study was to investigate the dimensionality and psychometric properties of this revised JIS within the South African context.

The first specific objective of this study was to conduct a literature review on job insecurity, related constructs, and its effects on employees and work-related outcomes. This was achieved by conducting a literature study in the preceding chapter (Chapter 2).

The second objective of the study was to determine whether the revised job insecurity measure is valid and reliable in a sample of working individuals. This objective was more specifically aimed at the following aspects:

3.1.1 Construct validity

To investigate the construct validity of the revised JIS, a confirmatory factor analysis approach was undertaken. The results of this study showed that the revised JIS consisted of a two-factor structure, namely positive (job security) and negative (job insecurity). All the positive items sufficiently loaded onto the positive factor, whereas all the negative items loaded onto the negative factor. These findings were contrary to expectations and to previous literature that found that the De Witte (2000) JIS that was validated in the South African context, confirmed the cognitive/affective distinction of job insecurity (Pienaar et al., 2013).

Both of the constructs found to fit best in the CFA (job security and job insecurity) showed acceptable reliability ($\alpha \geq 0.70$), and the revised scale can therefore be seen as a scale with acceptable internal consistency.

3.1.2 Convergent validity

In terms of convergent validity, it was decided to investigate the relationship of the revised JIS constructs with job satisfaction. This gives insight into whether the scale is competent in identifying relationships between the scale and other theoretically similar constructs. The JIS was able to illustrate an acceptable correlation between both job security and job insecurity with job satisfaction. The result is in line with previous literature as it showed that as the level of job insecurity increases, the level of job satisfaction decreases (De Witte, 2005; Sverke, Hellgren & Näswall, 2002; Van Wyk & Pienaar, 2008).

3.1.3 Discriminant validity

Although it is important that the revised JIS is able to sufficiently determine relationships with similar constructs, it must be able to report on constructs that should not be associated with job insecurity. Consequently, to determine the discriminant validity it was expected that

there would not be a significant correlation between physical tiredness and job insecurity. The results did indeed indicate that there was no significant association between job insecurity and physical tiredness during work (unrelated construct), and the scale was therefore deemed to have discriminant validity.

3.1.4 Predictive validity

The constructs should furthermore show significant regression coefficients to other constructs of interest, i.e. the predictive relationship between job insecurity and appropriate organisational outcomes. For this, the regression in the structural model was used to determine the relationship of job insecurity towards organisational commitment. The results showed that if an employee experiences job insecurity, their level of organisational commitment is lower. This result is in line with other studies, which found similar results (Ito & Brotheridge, 2006; Laba, Bosman & Buitendach, 2005; Van Wyk & Pienaar, 2008).

3.1.5 Measurement invariance

In order for a scale to be sufficient in determining the level of job (in)security that is experienced by different employees, it must also be invariant across different demographical groups. To determine whether the revised JIS can be considered free from bias, the study tested measurement invariance across gender, age and educational level groups. According to the results of the study, the revised JIS showed acceptable configural invariance, metric invariance and scalar invariance (strong measurement invariance), and is therefore unbiased and strongly invariant across age, gender and educational level groups in terms of job security and job insecurity in the current sample.

In summary, this research aimed to report on the psychometric properties and dimensionality of a revised Job Insecurity Scale (JIS). The study made use of employees from the mining and manufacturing sectors. The results revealed a positive and negative factor for job insecurity and not a cognitive and affective factor, as expected. The revised JIS was found to be reliable and valid (construct, convergent, predictive, and discriminant) for use as a scale in measuring an employee's job insecurity, and to investigate its relationship with different organisational outcomes of interest (e.g. job satisfaction and organisational commitment). The scale also proved to be invariant across gender, age and educational level groups in the sample.

3.2 Limitations of the research

In this study, certain limitations were identified. The reader should be made aware of these limitations as it could have affected the accuracy of the results found. In revealing these limitations, the researcher remains transparent regarding possible shortcomings of this research.

The study only targeted employees within the mining and manufacturing sectors. Consequently, the study presented a narrow range of participants utilised to collect data for validation. Furthermore, as only two sectors within the South African working environment were used for the data collection, there is a possibility that such a sample may not be an accurate representation of the entire working population. Thus, care should be taken when generalising the findings.

Secondly, the study made use of a cross-sectional research approach in collecting data. This approach can have a limiting effect on the results, as no causal effect could definitively be proven. According to Price and Murnan (2004), a study that collects data at only one point in time may possibly be insufficient in determining the cause or effect of certain relationships between different constructs. Furthermore, Spector (2006) stated that self-reporting measures can have a limiting effect on the results received from the population, but that concern surrounding common method bias (e.g. a single survey) can basically be classified as an urban myth (Meade, Watson & Kroustalis, 2007; Spector, 2006). Furthermore, the mind set in which the participants answered the questionnaire, in terms of the time of day as well as their mood at the given time, may have played an influence. Employees may also have attempted to exhibit themselves in a more positive light, thus artificially masking their real level of job insecurity.

3.3 Recommendations

Regardless of the limitations of this study, the findings present some important considerations and implications for both the practice and future research.

3.3.1 Recommendations for practice

As this study focussed on the psychometric properties and dimensionality of a revised JIS, and its relation to specific organisational outcomes, organisations can benefit from it in that managers can determine the level of job insecurity among the workforce. Regarding the literature review and the findings of this study, it becomes evident that job insecurity indicates negative consequences for both the employee and the organisation, whereas job security has major positive effects on employee job satisfaction and organisational commitment. Thus, the results indicate that employees with high levels of job security will be more inclined to reveal satisfaction in their job and a higher level of commitment to the organisation. It is therefore recommended that managers in organisations be made aware of the level of job security and job insecurity within the workforce. In becoming aware of the level of job security and job insecurity in the workforce, organisations could devise future interventions that should address undue levels of job insecurity, in turn promoting job security, and should have desired organisational outcomes as reward.

3.3.2 Recommendations for future research

It is recommended that future studies consider a larger sample size that includes additional sectors from the South African economy. By making use of a wider range of sectors, comparisons can be drawn between multiple industries of the job insecurity experienced, and the effect thereof on different organisational outcomes – this will provide support for generalising the findings.

Future research should also include longitudinal studies to determine whether the construct relationships are consistent and valid over time. This could present evidence for the causal relationship of the constructs with organisational outcomes, over time.

It was found that once the positive factor (job security) was brought into the model, and its variance introduced, the direction of the regression result for job insecurity changes, indicating the potential of a confounding or third factor variable as yet unknown. Future research should therefore aim at determining whether a possible third confounding factor variable does exist. This can be achieved by utilising other statistical applications in new samples to assist in solving this predicament, i.e. confirmatory and/or exploratory bi-factor

analyses. This will control for the variance of the positive and negative items in a general latent factor and show any additional latent factors that may be at play for further investigation.

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