The validation of a workplace boredom scale within the South African context

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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, **Sumarie M. van Wyk**, hereby declare that "The validation of workplace boredom scale within the South Africa context" is my own work and that the views and opinions expressed in this work are those of the author, and relevant literature references as cited in the manuscript.

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

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Title of mini-dissertation:
The validation of a workplace boredom scale within the South African context

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TABLE OF CONTENTS

LIST OF TABLES

SUMMARY

Title: The validation of a workplace boredom scale within the South African context

Keywords: Workplace boredom, boredom, psychometric properties, validation, reliability, work engagement, organisational commitment, job satisfaction, South Africa

Boredom at work is a concern, as both employees and organisations are affected by the negative effects that this phenomenon holds. Workplace boredom is becoming an increasingly common occurrence within organisations and most employees are susceptible to it. To date, no reliable and valid scale for workplace boredom is available in South Africa. This study aimed to validate the Dutch Boredom Scale (DUBS) within the South African context in an attempt to provide a scale suitable for South African employees.

The general objective of the study was to determine the reliability and validity of the workplace boredom scale (DUBS) within the South African context by means of investigating the reliability, factorial validity, convergent validity, predictive validity and discriminant validity. A cross-sectional research approach was utilised by means of a random convenience sample (N = 490) from organisations within the manufacturing and logistics sectors. The reliability of the workplace boredom scale was established by investigating the alpha and omega values. Confirmatory factor analysis (CFA) was used to determine the factor structure of the DUBS and to ascertain factorial validity. In order to prove convergent and discriminant validity, the relationship between workplace boredom and similar theoretical constructs (work engagement, workload, job satisfaction and organisational commitment) as well as constructs assumed to differ from work place boredom (i.e. gender) was investigated. Finally, regression with regard to one-directional relationships was examined between workplace boredom and appropriate outcomes (work engagement, organisational commitment and job satisfaction) in order to establish predictive validity.

The results indicate that the DUBS consists of a one-factor structure, and that this factor has acceptable reliability. Relationships between workplace boredom and work engagement, workload, job satisfaction, organisational commitment and turnover intention were negatively and practically significantly correlated. No significant relationship existed between workplace boredom and gender. Workplace boredom had significant negative regressions to work engagement, job satisfaction and organisational commitment.

Recommendations are made for use in practice and additionally for future research.

OPSOMMING

Titel: Die validering van ’n maatstaf vir werksplekverveeldheid in Suid-Afrikaanse verband

Sleutelwoorde: Werksplekverveeldheid, verveeldheid, psigometriese eienskappe, validering, betroubaarheid, werksbetrokkenheid, organisatoriese verbintenis, werksbevrediging, werkslading, Suid-Afrika

Verveeldheid in die werksplek word gesien as n fenomeen wat n negatiewe uitwerking op beide die organisasie en die werknemer kan hê. Die verskynsel word al hoe meer gereeld in die werksplek aangetref, aangesien die meeste werknemers vatbaar is vir verveeldheid. Daar is tans geen betroubare of geldige maatstaf vir werksplekverveeldheid in Suid-Afrika beskikbaar nie. Hierdie studie was daarop gerig om ’n maatstaf vir werksplekverveeldheid, naamlik die Dutch Boredom Scale (DUBS), in Suid-Afrikaanse verband te valideer en sodoende ’n maatstaf te lewer wat geskik is vir Suid-Afrikaanse werknemers.

Die oorhoofse doel van hierdie studie was om die betroubaarheid en geldigheid van die maatstaf vir werksplekverveeldheid in Suid-Afrikaanse verband te bepaal. Dit is gedoen deur bestudering van betroubaarheidswaardes, bevestigende faktorontleding, konvergerende, diskriminante asook voorspellingsgeldigheid.

’n Dwarssnitnavorsingsbenadering en ’n beskikbaarheidsteekproef van werknemers in die vervaardiging- en logistieke sektore (N = 490) is gebruik om die data in te samel. Die betroubaarheid van die maatstaf vir werksplekverveeldheid is bepaal deur die alfa- en omega-waardes te ondersoek. Bevestigende faktorontleding is aangewend om die faktoriale geldigheid van die DUBS vas te stel. Om konvergerende geldigheid te bewys, is die verhoudings tussen werksplekverveeldheid, en soortgelyke teoretiese konstrukte (werksbetrokkenheid, werklading, werksbevrediging en organisatoriese verbintenis bepaal, asook die konstrukte waarvan werksplekverveeldheid verskil (bv. geslag). Laastens is regressie met betrekking tot eenrigtingverhoudinge tussen werksplekverveeldheid en gepaste uitkomstes (werksbetrokkenheid, werksbevrediging en organisatoriese verbintenis) ondersoek om die voorspellingsgeldigheid te bepaal.

Die resultate het bevestig dat die DUBS uit ’n eenfaktorstruktuur bestaan, en dat die faktor oor geskikte betroubaarheid beskik. Die verhouding tussen werksplekverveeldheid en

soortgelyke konstrukte – werksbetrokkenheid, werklading, werksbevrediging, organisatoriese verbintenis en werknemeromset – was beduidend negatief en prakties verwant. Daar is geen merkwaardige verhouding tussen werksplekverveeldheid en geslag bevind nie. Laastens is bevind dat werksplekverveeldheid ŉ beduidend negatiewe verwantskap het tot werksbetrokkenheid, werksbevrediging en organisatoriese verbintenis.

Die aanbevelinge wat in hierdie tesis studie gemaak word, kan in die praktyk asook in toekomstige navorsing toegepas word.

CHAPTER 1

INTRODUCTION

Introduction

In the ever-changing world of work, organisations attempt various strategies in order to achieve a competitive advantage (Kreitner & Kinicki, 2010). However, many organisations may have overlooked a potentially hazardous concept known as *workplace boredom*. Workplace boredom is a response to a passive and unchallenging job (Loukidou, Loan-Clarke & Daniels, 2009). Researchers have also described workplace boredom as an unpleasant emotional state that results from low levels of stimulation (i.e. under-stimulation) or underuse of a person's physical or cognitive capacity at work, indicating being under-challenged in one's job (Game, 2007; Loukidou et al., 2009; Kass, Vodanovich & Callneder, 2001). According to Loukidou et al. (2009), the lack of stimulation in the employee's occupation results in a search for variety, and if unfulfilled, the individual experiences boredom at work. Thus, workplace boredom is boredom in the context of the work domain, and this seemingly innocuous phenomenon has been identified as an antecedent to negative outcomes and performance discrepancies in organisations (Fisher, 1993; Wallace, Vodanovich & Restino, 2003).

1.1 Problem statement

Workplace boredom negatively affects both the organisation and the individual. Firstly, economic implications are evident as companies are losing money, attributable to workplace boredom that interferes with the employee's ability to conduct work-related tasks (Loukidou et al., 2009). This influences the organisation's competitive advantage as the employee's performance, productivity, organisational commitment, work engagement, job satisfaction and turnover intention are affected. This has seen and unseen costs to the organisation (Kass et al., 2001; Meyer, 2012; Reijseger et al., 2012).

Furthermore, employees who experience workplace boredom are more inclined to partake in non-work-related activities (Bruursema, Kessler & Spector, 2011). These activities are performed in order to occupy the individual or relieve the feeling of boredom. When workplace boredom is experienced, employees spend their time on engaging in unrelated tasks such as daydreaming or perusing non-work related discussions (Baker, 1992; Reijseger et al., 2012), affecting other employees and keeping them from performing optimally at work. Workplace boredom can also cause serious accidents, as safety measures are often neglected

or overlooked (Drory, 1982). Additionally, Bruursema et al. (2011) established that employees who are bored are more inclined to misbehave. These potentially destructive behaviours include partaking in abusive and harmful activities, purposefully avoiding work, increasing absenteeism or sabotaging the environment by physically destroying resources. It seems that work-related boredom results in negative emotions such as anger and hostility, which fester damaging and destructive behaviour among employees (Schaufeli & Salanova, 2014). To this end, a validated workplace boredom questionnaire is necessitated in order to pursue quality local research.

Little is known about workplace boredom and its effects in South Africa, presenting a substantial gap in the literature. Greater understanding of workplace boredom is warranted due to the negative individual and organisational outcomes that this phenomenon suggests (Loukidou et al., 2009; Reijseger et al., 2012). Boredom at work can manifest at all levels of an organisation and the prevalence thereof seems to have become more widespread (Bruursema et al., 2011; Fisher, 1993).

Generally, workplace boredom has been reported across various cultures (Watt & Vodanovich, 1992). Guest, Williams, and Dewe (1978) conducted a study on British workers, where three samples from all organisational levels were obtained. The results showed that more than half of the sample (56%) experienced their job as boring; a further 79% to 87% indicated that they often felt bored at work. A study conducted in the United States found similar results, as one-third of the 10 000 employees surveyed spent two hours each working day on private matters due to boredom (Malachowski, 2005). These results indicate that workplace boredom is a global problem. Within South Africa, studies on leisure boredom have been conducted; however, no studies have been done on workplace boredom (Wegner, Flisher, Muller & Lombard, 2006). Workplace boredom is an international phenomenon that manifests in all organisations. It may therefore reasonably be expected that employees in South Africa also manifest the workplace boredom phenomenon.

To date, no workplace boredom measure has been validated within the South African context. South Africa is a unique multicultural nation where different cultural backgrounds, ethnicities and values can be found across most groups (Foxcroft & Roodt, 2009). The historic context of this nation and the various adversaries faced might affect the manner in which a phenomenon is perceived (Rodrik, 2008). When considering the South African workforce,

their values, norms and assumptions would differ vastly from those in other countries (Foxcroft & Roodt, 2009) and could thus influence their experience of a phenomenon such as workplace boredom. The suitability of utilising a measuring instrument from another country could be considered questionable, as such measuring instrument has not been validated in the specific country, thus rendering the results untrustworthy (Foxcroft & Roodt, 2009). Therefore, it is important to validate a workplace boredom measure for use within South Africa, and to investigate its equivalence, as the first step to assist further research on the topic.

Various scales have been developed to measure boredom; however, few specifically measure boredom in the context of the work domain (Lee, 1986; Mikulas & Vodanovich, 1993). A standardised valid measure is required to continue research on this topic and to explore the phenomenon within the South African context (Foxcroft & Roodt, 2009). The Dutch Boredom Scale (DUBS) developed by Reijseger et al. (2012) was used in this study. The DUBS was developed in accordance with Mikulas and Vodanovich's (1993)'s conceptualisation of workplace boredom, which states that workplace boredom is a negative motivational state resulting from inadequate stimulation at work. The items used in the DUBS have been adapted from two general boredom scales known as the Job Boredom Scale (JBS) (Lee, 1986) and the Boredom Proneness Scale (BPS) (Farmer & Sundberg, 1986). Reijseger et al. (2012) developed a theoretically interpretable one-factor scale that originally consisted of eight items. However, two problematic items have since been removed. The remaining six items refer to common emotions, thoughts or behaviours that seem to be prevalent when workplace boredom occurs. The focus of the DUBS is aimed at expressing the experience and manifestation of workplace boredom itself. The study by Reijseger et al. (2012) revealed that the DUBS had a high internal consistency, as shown by the Cronbach's alpha (0.80), and a mean item-total correlation of 0.55.

Previous research has linked workplace boredom to various organisational outcomes, including work engagement (Reijseger et al., 2012), job satisfaction (Kass et al., 2001), workload (Reijseger et al., 2012) and organisational commitment (Watt & Hargis, 2010), all of which are essential to the success of any organisation. However, the relationships of boredom to these constructs have not yet been investigated within the South African context. It is essential to investigate these relationships to assess the convergent, discriminant and predictive validity which will serve as a second step in the validation of a local measure.

Schaufeli (2012) states that workplace boredom has an un-pleasurable-deactivating affect, contrary to work engagement, which is linked to a pleasurable-activating affect. Work engagement can be described as a positive and fulfilling work-related state of mind, which is characterised by the components vigour, absorption and dedication (Schaufeli, Bakker & Salanova, 2006). Supporting the former notion, Reijseger et al. (2012) found that workplace boredom was negatively related to work engagement. Thus, when employees experience boredom at work they are more likely to be disengaged, resulting in lower performance and productivity (Eastwood, Frischen, Fenske & Smilek, 2012). The premise is therefore that workplace boredom is opposed to work engagement, and workplace boredom will be negatively related to work engagement.

Disengagement is only one of the many destructive consequences of workplace boredom (Reijseger et al., 2012). However, the causes of workplace boredom are less apparent (Loukidou et al., 2009). Research indicates that workplace boredom is caused by various factors of which one is the monotonous nature of the job, and another, low workload (Loukidou et al., 2009; Reijseger et al., 2012). Research studies have considered low workload as one of the most significant antecedents of workplace boredom, for example: Karasek (1979) states that those employees who work in unvarying and repetitive jobs, with little demands (low workload) may be at risk of experiencing boredom. This has also been confirmed by Reijseger et al. (2012) who found that work demands, such as workload, are negatively related to boredom at work.

When an employee's job is routinized and repetitive, it is highly likely for the employee to experience workplace boredom due to the unchallenging nature of the occupation (Karasek, 1979). Workplace boredom has been described as a negative state of dissatisfaction, consistent with various research findings (Farmer & Sundberg, 1986; Kass et al., 2001; Mikulas & Vodanovich, 1993). Job satisfaction is considered the opposite of dissatisfaction and refers to the positive emotional state which results from certain aspects in one's job, as opposed to dissatisfaction, which refers to the negative emotional state (Locke, 1976; Rothmann, 2008). According to Lee (1986), high scores that were found on the Job Boredom Scale were significantly related to lower job satisfaction. Supporting this notion, Macdonald and MacIntyre (1997) found negative correlations between scores on the Job Satisfaction Scale and boredom. Therefore, workplace boredom is negatively related to job satisfaction.

When workplace boredom is experienced, the employee may feel the need to alleviate this negative dissatisfying feeling, which often results in outcomes such as lower organisational commitment. Mowday, Porter and Steers (1982) refer to organisational commitment as the degree to which an individual identifies with the organisation and the employee's involvement in the organisation which is also referred to as affective commitment. Research indicates that, when an employee experiences less organisational commitment, turnover intention will increase, as the employee feels less loyalty towards the organisation (Schwepker, 2001; Tett & Meyer, 1993). Tett and Meyer (1993) describe turnover intention as the conscious and deliberate intention to leave the organisation by exiting the job permanently. Employees opt to leave their jobs when experiencing continuous workplace boredom as this presents relief from the unstimulating and unchallenging nature of the job (Reijseger et al., 2012; Van Tilburg & Igou, 2012). This seems consistent with the findings by Watt and Hargis (2010), who indicate a direct relationship between boredom proneness and job attitudes such as organisational commitment. These results concur with the findings by Reijseger et al. (2012), namely that employees felt more organisational commitment when they experienced less boredom. Therefore, workplace boredom can be classified as a state of dissatisfaction and low arousal as a result of an understimulating work environment (Reijseger et al., 2012), resulting in low organisational commitment and high turnover intention. Moreover, it has been found that the relationship between gender and boredom proneness is not statistically significant (Watt & Vodanovich, 1992), and this was also expected to be the case in this study.

The primary objective of the current study was therefore to determine the reliability and validity of the DUBS within a sample of South African employees. The reliability of a measuring instrument refers to the consistency with which that instrument or scale measures what it is supposed to measure (Foxcroft & Roodt, 2009). When referring to validity, one refers to the extent to which a measuring instrument or a test can measure what it was designed to do (Foxcroft & Roodt, 2009; Gregory, 1992). Validating a measuring instrument is of greatest importance, as a lack of validity may lead to inaccurate and imprecise results when interpreting the scores of the measure. This study focused on factorial validity, convergent validity, discriminant validity and predictive validity. The reliability of the scales by means of alpha and omega coefficients was also determined within this sample.

1.2 Research questions

The study was guided by the following research questions:

- How are workplace boredom, work engagement, organisational commitment, job satisfaction, and workload conceptualised in the literature?
- Is the workplace boredom scale valid and reliable? More specifically, can the following be established:
    - Acceptable alpha and omega reliability values;
    - Factorial validity (the one-factor structure);
    - Convergent validity with other theoretical constructs (i.e. work engagement, workload, job satisfaction and organisational commitment);
    - Predictive validity with appropriate outcomes, i.e. the relationship between workplace boredom, work engagement, organisational commitment, and job satisfaction; and
    - Discriminant validity with those constructs from which workplace boredom is supposed to differ (i.e. gender).
- Which recommendations can be made for future research and practice?

1.3 Expected contribution

The current study will contribute to the individual, the organisation and literature.

1.3.1 Contribution for the individual

Workplace boredom affects both the employee and the organisation negatively. This phenomenon has been known to impact the individual's performance and attitude regarding his or her work in terms of job dissatisfaction and work engagement (Kass et al., 2001; Reijseger et al., 2012; Wallace et al., 2003). Numerous employees are affected to such an extent that they cannot work optimally, impairing their performance (Kass et al., 2003). The current research will contribute by establishing a valid measure of workplace boredom which could assist to provide insight for organisations into workplace boredom of their employees. This could potentially lead to creating awareness regarding workplace boredom in organisations to ensure that the individuals are engaged and performing optimally, reducing

negative effects of boredom on employee outcomes. The current research could assist in ensuring that employees are satisfied with their jobs and foster a greater degree of loyalty and commitment towards the organisation.

1.3.2 Contribution for the organisation

Little is known regarding the relationship between workplace boredom and organisational outcomes such as engagement, job satisfaction and organisational commitment in South Africa. However, the above-mentioned factors are all essential to the success of any organisation, as they can influence the employees' performance, productivity and intention to leave, all of which influence competitive advantage and potential cost to the organisation (Fisher, 1993; Meyer, 2012; Wallace et al., 2003). When these factors are not sustained, profitability might decrease, and competitive advantage will not be achieved (Markos & Sridevi, 2010). If the hypotheses are confirmed, the organisation can actively focus on addressing boredom, and improve their competitive advantage.

1.3.3 Contribution towards the literature

Workplace boredom is currently considered a neglected domain on which little research has been conducted (Game, 2007; Harris, 2000; Reijseger et al., 2012). The current study aimed to fill the gap regarding workplace boredom and to assist future researchers on the topic within the South African context. Limited research has been done on the association of workplace boredom with organisational commitment and job satisfaction, and seemingly none in the South African context; thus, rendering a substantial gap to be filled. Furthermore, no boredom scale has been validated within the South African context for research.

1.4 Research objectives

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

1.4.1 General objective

The general objective of the current study was to determine the reliability and validity of a workplace boredom scale within the South African context.

1.4.2 Specific objectives

The specific objectives of this research are to:

- Determine how workplace boredom, work engagement, organisational commitment, job satisfaction, turnover intention and workload are conceptualised in the literature;
- Determine whether the workplace boredom scale is reliable and valid in the sample pertaining to the following:
    - Acceptable alpha and omega reliability values (α & $\omega \geq 0.70$);
    - Factorial validity (the one-factor structure);
    - Convergent validity with other theoretical constructs (i.e. work engagement, workload, job satisfaction and organisational commitment);
    - Predictive validity with appropriate outcomes, i.e. the relationship between workplace boredom, work engagement, organisational commitment and job satisfaction; and
    - Discriminant validity with those constructs from which workplace boredom is supposed to differ (i.e. gender), and;
- Provide recommendations for future research and practice.

1.5 Research hypotheses

The following hypotheses are presented to assist in answering the research questions and to reach the objectives of the study:

H_1: Workplace boredom presents a one-factor structure as found in the literature.
H_2: The workplace boredom scale is reliable (α & $\omega \geq 0.70$).
H_3: Workplace boredom has a negative relationship to work engagement.
H_4: Workplace boredom has a negative relationship to organisational commitment.
H_5: Workplace boredom has a negative relationship to job satisfaction.
H_6: Workplace boredom has a negative relationship to workload.
H_7: There is no significant relationship between workplace boredom and gender.

1.6 Research method

The research method consists of an empirical investigation and a literature review

1.6.1 Research approach

A quantitative approach was utilised for this research, as quantitative research relies on the measurement of variables in order to analyse and compare results (Bless, Higson-Smith & Kagee, 2006). A cross-sectional survey design was used, which implied that the data was collected at one single point in time and could be used to describe differences among the population at that particular moment (De Vos, Strydom, Fouché & Delport, 2012). A cross-sectional design is also appropriate for the validation of measuring instruments (De Vos et al., 2012).

1.6.2 Literature review

A comprehensive review was conducted regarding workplace boredom. As research on this topic is limited, all articles that are relevant to the study were utilised. Therefore, any relevant articles published between 1979 and 2014 were obtained by utilising databases such as Business Source Premier, EBSCOhost, Google Scholar, Emerald, PsycArticles, Nexus, PsycInfo, ProQuest, SACat, SAePublications and Science Direct. The keywords were used to guide the search and attain relevant articles from these databases.

1.6.3 Participants

For the purpose of this study, a convenience sampling method was used (N = 490), specifically in the manufacturing and logistics sectors. Random convenience sampling refers to a sampling technique where participants are selected due to their convenient accessibility and proximity to the researcher (De Vos et al., 2012). The sample group consisted of participants from different ages, genders and language groups.

1.6.4 Measuring instruments

Biographical questionnaire: A standard biographical survey was used to determine the biographical characteristics of the participants, such as year of birth, gender, home language, and level of education.

Workplace boredom: This aspect was measured with the Dutch Boredom Scale (DUBS), developed by Reijseger et al. (2012). This one-dimensional scale uses a five-point rating scale ranging from 1 (Never) to 5 (Always). Workplace boredom is measured by six items (e.g. 'I feel bored at my job' and 'I tend to do other things during my work'). This scale has a reported Cronbach's alpha coefficient of 0.80 (Reijseger et al., 2012).

Work engagement was measured with the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006). This measure consists of 17 items which are all scored on a 7-point frequency-rating scale ranging from 0 (Never) to 6 (Always). The Cronbach's alpha coefficients range between 0.75 and 0.86 (Schaufeli et al., 2006). According to Schaufeli, Salanova, Gonzalez-Romá and Bakker (2002) work engagement is characterised by vigour, dedication, and absorption however, for the purpose of this study, only the two core components of work engagement (i.e. vigour and dedication) were used. Langelaan, Bakker, Van Doornen and Schaufeli (2006) state that absorption is considered a consequence of work engagement and was therefore not included. The current study used 11 items to measure the two dimensions of work engagement – vigour (e.g. 'I can continue working for very long periods at a time') anddedication (e.g. 'I find the work that I do full of meaning and purpose'). The UWES has been used in South Africa with good reliability (Storm &Rothmann, 2003).

Organisational commitment The focus in this study was on the affective component of organisational commitment, which relates to the employee's identification and emotional connection with the organisation as well as participation in the organisation. This aspect was measured using a five-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). This scale is based on items by Allen and Meyer (1990) and consists of five items (e.g. 'I would be very happy spending the rest of my career with this organisation'). Cronbach's alpha coefficients of above 0.70 have been reported for this scale (Allen & Meyer, 1990).

Job satisfaction was measured with the scale developed by Hellgren, Sjöberg, and Sverke (1997). This three-item measure uses a 5-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree), to measure the individual's satisfaction with his or her job (e.g. 'I enjoy being at my job'). According to Hellgren et al. (1997), this scale reported a Cronbach's alpha coefficient of 0.86, and in South Africa, a Cronbach alpha of 0.80 has been shown (Pienaar, Sieberhagen & Mostert, 2007).

Work overload: A five-point rating scale was used which ranged from 1 (Strongly disagree) to 5 (Strongly agree) (Spector & Jex, 1998). This scale consists of five items measuring quantity of work, amount of workload, and time pressure (e.g. 'I have to do things in my work that I do not really have the time for'). Cronbach's alpha values for this scale have been shown to be above 0.80 (Idris, 2011).

1.6.5 Research procedure

Permission was obtained from various organisations in order to conduct the research in their work environment. Hardcopies of the surveys were printed and distributed to the employees. Each survey comprised of a cover letter explaining the purpose of the research. After two weeks the surveys were collected. Participation in the study was voluntary, and the confidentiality of information and anonymity of the participants were ensured as no personal identifying information of any participant was collected.

1.6.6 Statistical analysis

Latent variable modelling with structural equation modelling (SEM) methods was implemented with Mplus 7.2 (Muthén & Muthén, 2014). To investigate the reliability of the constructs, both alpha and omega coefficients were calculated. Acceptable values for the reliability coefficients would have a lower-bound cut-off value of 0.70 (Bland & Altman, 1997). To answer the research questions three steps were followed. The first step was to ascertain the factorial validity of the constructs with confirmatory factor analysis (CFA) in a measurement model. This indicated whether the observed indicators (items) loaded sufficiently onto the proposed factor and also provided the variance explained in each of the items. Configural and metric measurement invariance was also investigated (i.e. whether the factor structure, loadings and intercepts were comparable for different groups). Model fit was investigated with the Comparative Fit Index (CFI) with acceptable values of 0.90–0.99, the Tucker–Lewis Index (TLI) with acceptable values of 0.90–0.99) and the root mean square error of approximation (RMSEA) with acceptable values of < 0.08) (Van de Schoot, Lugtig & Hox, 2012). The second step investigated how the study variables related to one another by way of convergent and discriminant validity via correlational relationships (Brown, 2015). The cut-off points for correlation coefficients were set according to the guidelines of Cohen

(1988), which indicate correlations between 0.30 and 0.49 as having medium practical effect; whilst correlations equal to and greater than 0.50 have large practical effect. Furthermore, structural regression paths were added to the measurement model (CFA) in order to ascertain the relationships between the variables as has been found in the literature, and if significant, addresses the issue of predictive validity. Statistical significance for this study was set at the 95% level ($p \leq 0.05$).

1.6.7 Ethical considerations

The research proposal has been reviewed and approved by the research committee of the North-West University's Faculty of Economic and Management Sciences. The research was conducted in a fair and ethical manner, protecting the participants from harm. All participants partook voluntarily, and had the right to end participation at any time. Confidentiality and anonymity was ensured throughout this process.

1.7 Overview of the chapters

This mini-dissertation consists of three chapters:
Chapter 1: Introduction
Chapter 2: Research article
Chapter 3: Conclusion, limitations and recommendations

1.8 Chapter summary

The following were presented in this chapter: the problem statement, research objectives and the research hypotheses. The measuring instruments that were used and the research method were explained, followed by a brief overview of the chapters.

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CHAPTER 2

RESEARCH ARTICLE

The validation of a workplace boredom scale within the South African context

Abstract

Orientation: Boredom at work has been shown to be a concern for individuals and organisations. At the time of this research, no validated scale was available to measure and investigate workplace boredom within the South African context.

Research purpose: To determine whether the Dutch Boredom scale (DUBS) is valid and reliable for use within the South African context.

Motivation for the study: No reliable and valid scale for workplace boredom was available in South Africa at the time of the current research. Boredom at work has been found to affect organisations negatively in other countries. Insight into workplace boredom and how it affects the performance of organisations needed to be gained.

Research design, approach and method: A cross-sectional research approach was utilised. A random convenience sample (N = 490) was used from organisations within the manufacturing and logistics sector. In order to validate the DUBS, the reliability, factorial validity, convergent validity, predictive validity and discriminant validity for the scale were investigated.

Main findings: Results showed that the DUBS could be confirmed as a one-factor structure, and that this factor has acceptable reliability. Relationships between workplace boredom and dissimilar theoretical constructs were negatively and practically significantly correlated. Workplace boredom showed significant negative regressions to work engagement, job satisfaction and organisational commitment. No significant relationship was found between workplace boredom and gender.

Practical/Managerial implications: Management should not neglect workplace boredom as results showed how it affects work engagement, job satisfaction and organisational commitment levels within the South African context. Therefore, workplace boredom is a concern for overall organisational performance.

Contribution/Value-add: This study contributes to the limited research available on workplace boredom for both the individual and the organisation with regard to organisational outcomes in South Africa by providing a reliable and valid scale.

Keywords: Workplace boredom, boredom, psychometric properties, validation, reliability, work engagement, organisational commitment, job satisfaction, South Africa

Introduction

Workplace boredom is a phenomenon to which employees are susceptible. This phenomenon can manifest at all levels of any organisation, and the prevalence of workplace boredom is a common occurrence across various cultures (Fisher, 1993; Martin, Sadlo & Stew, 2006; Sundberg & Staat, 1992). Workplace boredom negatively affects both the organisation and the employees to such an extent that the organisation's competitive advantage is affected (Kass, Vodanovich & Callender, 2001; Meyer, 2012). Workplace boredom can be described as the experience of boredom within the context of work, where the employee is under-challenged or under-stimulated (Loukidou, Loan-Clarke & Daniels, 2009). The employee experiences workplace boredom as a negative emotional state, and as a result tries to alleviate this feeling by engaging in non-work-related behaviours (Fisher, 1993; Loukidou et al., 2009; Mikulas & Vodanovich, 1993). Employees are affected by workplace boredom to such an extent that they cannot work optimally due to impaired performance (Kass, Wallace & Vodanovich, 2003). Workplace boredom is considered a neglected topic on which little research has been conducted in the South African context, as no validated workplace boredom scale was available at the time of the current research. The study on which this article reports, aimed to validate the Dutch Boredom Scale (DUBS) (Reijseger et al., 2012) within the South African context in order to assist future researchers on the topic.

To date, there is no thorough theory on boredom, let alone workplace boredom (Fisher, 1993; Reijseger et al., 2012). Rather, the focus of research has mainly been on identifying an assortment of individual and work-related factors that were linked with workplace boredom (Shackleton, 1981). Studies have shown that workplace boredom adversely affects work-related variables or organisational outcomes, which comprises work engagement, job satisfaction and organisational commitment, all of which are essential to the success of any organisation (Kass et al., 2001; Reijseger et al., 2012; Wallace, Vodanovich & Restino, 2003). These organisational outcomes also impact the employees' performance, productivity and intention to leave, consequently increasing potential cost to the organisation (Fisher, 1993; Markos & Sridevi, 2010; Meyer, 2012; Wallace et al., 2003).

Most previous studies on workplace boredom have highlighted the negative consequences that this phenomenon entails. However, Schubert (1977) hypothesised that boredom might occasionally lead to increased creativity, which inspires a search for change and variety. However, Schubert's (1997) results were inconclusive and the assumption can be regarded as merely speculative. The vast majority of recent empirical research supports the notion, that workplace boredom is associated with negative outcomes and consequences for both the organisation and the individual.

Previous research have established the relationships between workplace boredom and various organisational outcomes, including work engagement (Schaufeli & Salanova, 2014), job satisfaction and organisational commitment (Reijseger et al., 2012). However, these relationships were established within other countries; hence, the focus in the current study was on establishing the relationship between workplace boredom and the above-mentioned organisational outcomes within the South African context. It was therefore important to investigate the reliability and validity of the relationship as well as prediction of workplace boredom with these organisational outcomes. This would assist in establishing the usefulness of the Dutch Boredom Scale (DUBS), as a workplace boredom scale, within the South African context.

Measurement of boredom

Interest in the boredom domain has led to the development of various scales in order to measure the phenomenon. However, only a single scale (DUBS) was available that measures work-related boredom, which focused specifically on the employee's response to boredom, and the work environment. Earlier scales, such as the Job Boredom Scale (JBS) (Grubb, 1975; Lee, 1986), focused primarily on the antecedents of workplace boredom with reference to an under-stimulating work environment and excluded the affective, cognitive and behavioural responses of boredom (Vodanovich, Wallace & Kass, 2005). Alternatively, dispositional boredom scales (Farmer & Sundberg, 1986) took the various boredom responses into account; however, they did not connect the response to the work environment. Reijseger et al. (2012) combined the strengths of both the JBS and dispositional scales to create a new scale known as the DUBS. The DUBS measures work-related boredom and focuses on the employee's affective, cognitive and behavioural responses with regard to an under-

stimulating work environment. The development and validation of the DUBS allows researchers to measure workplace boredom within the employee's context.

Workplace boredom is a persistent phenomenon that will continue to be experienced within organisations; the increase in the educational level of employees and continuous technology improvements result in automated work practises where individuals become over-qualified for these repetitive and unvarying jobs (Fisher, 1993; Loukidou et al., 2009; Martin et al., 2006). Technological changes in addition to economic collapses are likely to aggravate the prevalence of workplace boredom, as highly qualified workers agree to take lower-level jobs in times of uncertainty (Sohail, Ahmad, Tanveer & Tariq, 2012). Workplace boredom is a phenomenon that is therefore exceedingly prevalent and it affects organisations and employees across various countries (Bruursema, Kessler & Spector, 2011; Fisher, 1993; Martin et al., 2006). This necessitates the need for a validated scale to start to measure and address the phenomenon of workplace boredom within South African organisations.

Literature review

Workplace boredom

Fisher (1993) describes boredom as a fleeting unpleasant state, where the employee experiences a lack of interest and finds it difficult to concentrate on the present activity or situation. The essential element of the boredom phenomenology includes the individual's inability or difficulty to maintain focus and concentration (Fisher, 1993; Loukidou et al., 2009). In addition, there is the association with an unpleasant feeling, which causes the individual to search for variety in order to alleviate this negative state (Hamilton, Haier & Buchsbaum, 1984; Loukidou et al., 2009). Workplace boredom is similar to boredom, however, and refers to the experience of boredom as described above, but contextualised within the domain of work.

Workplace boredom thus can be defined as a task- or activity-related, unpleasant, dissatisfying and often deactivating emotion due to low arousal or the under-stimulating nature of the job (Fisher, 1993; Mikulas & Vodanovich, 1993). Workplace boredom is a temporary state of mind where one may feel bored for a moment but not the next (Fisher,

1993). Workplace boredom differs from other affective states as employees often feel unchallenged, thus making the situation or the job seem increasingly meaningless (Van Tilburg & Igou, 2012).

Some researchers on workplace boredom have attributed the cause of workplace boredom to the work situation itself (Hill & Perkins, 1985). Job characteristics and/or the work environment are considered to be potential sources that cause workplace boredom (Loukidou et al. (2009). These job characteristics refer to task variety, job design, autonomy and utilisation of skills within the occupation (Fisher, 1993; Loukidou et al., 2009; Smith, 1981). Traditionally, it was assumed that job characteristics – such as monotony or the repetitive nature of tasks – inevitably led to workplace boredom (Hill & Perkins, 1985). However, according to Shackleton (1981) not everyone working within repetitive jobs are likely to experience workplace boredom. Research suggests that employees' perception of the situation can determine their response to a phenomenon such as workplace boredom (Lazarus, 1991; Weiss and Cropanzano, 1996).

The development, validity and reliability of the DUBS

Reijseger et al. (2012) developed the Dutch Boredom Scale (DUBS). The process of developing the DUBS included construct conceptualisation, item adaption (combination of two existing boredom scales), evaluation and refinement. The items of the DUBS were primarily aimed at measuring the experience and manifestation of workplace boredom (cf. Baker, 1992; Hill & Perkins, 1985). An eight-item scale was designed at first. These items were adapted from the Boredom Proneness Scale (BPS) (Farmer & Sundberg, 1986) and the Job Boredom Scale (JBS) (Grubb, 1975; Lee, 1986). The DUBS measures feelings, thoughts and behaviours (or the absence of behaviours) that seem to be prevalent when boredom is experienced at work. These include the perception of time passing and feeling bored (Hill & Perkins, 1985), task-unrelated thoughts (Damrad-Frye & Laird, 1989), and inclinations to engage in unrelated activities at work (Baker, 1992).

Reijseger et al. (2012) used three convenience samples that included respondents from various organisational sectors. All the item scores correlated significantly; hence, a uni-dimensional construct was apparent. Furthermore, confirmatory factor analyses (CFA) also provided the necessary evidence to confirm a one-factor structure consisting of six items. The

seventh and eighth items were deleted from the scale as the results pertaining to them were inconclusive and ambiguous.

Hypothesis 1: Workplace boredom is a one-factor structure as found in the literature.
Hypothesis 2: The workplace boredom scale is reliable (α & $\omega \geq 0.70$).

Convergent and predictive validity

The validity of a measuring instrument is considered important as this influences the precision, interpretation and usefulness of the findings (Foxcroft & Roodt, 2009; Westen & Rosenthal, 2003). When determining the validity of an instrument, one option is to investigate the convergent validity. Convergent validity refers to the extent to which two theoretical constructs that are expected to be related to one another, are related (Campbell & Fiske, 1959). It is expected that significant correlations among constructs of the DUBS and similar theoretical constructs such as work engagement, job satisfaction, organisational commitment and workload will be evident.

Predictive validity is an alternative form of validity that can be useful in a validation study. Predictive validity refers to the precision with which a measure can predict future behaviour, responses or category status (Foxcroft & Roodt, 2009), i.e. the predictive regression based on theoretical argument. Predictive validity is typically associated with a longitudinal research design, where cause and effect can be determined; however, cross-sectional data allows the researcher to investigate the regression with regard to a one-directional relationship (De Vos, Strydom, Fouché & Delport, 2012; O'Dwyer & Bernauer, 2014). For the purpose of this study, predictive validity was considered for the relationship from workplace boredom to: organisational commitment, work engagement and job satisfaction.

Work engagement and workplace boredom

The link between workplace boredom and work engagement suggests that boredom at work impairs employee productivity and well-being (Whiteoak, 2014), which may also imply impairment of work engagement. Work engagement is typically described as "a positive, fulfilling work-related state of mind that is characterised by vigour, dedication, and absorption" (Schaufeli, Salanova, Gonzalez-Romá & Bakker, 2002, p. 74). According to

Schaufeli et al. (2002) vigour can be described as having high levels of energy and resilience, often characterised by the individual's willingness to exert effort in their work. Dedication on the other hand, is seen as a strong involvement in one's work, characterised by enthusiasm and a sense of pride and inspiration (Schaufeli & Bakker, 2004). Whereas absorption is considered to encompass a high involvement or immersion in one's work where time passes by quickly (Schaufeli et al., 2002).Contrary to the original definition, studies have found that work engagemnet only consists of the two core dimensions, vigour and dedication, as absorption is seen as a less central component of work engagement (Langelaan, Bakker, Van Doornen & Schaufeli, 2006). According to Csikszentmihalyi and Rathunde (1993) absorption is considered a state of flow, which is a consequence resulting from work engagement, and not a factor thereof (Langelaan, Bakker, Van Doornen & Schaufeli, 2006; Schaufeli & Bakker, 2001). Based on the arguments above, solely the core dimensions of work engagement were included in this study.

Contrarily to work engagement described as a positive, fulfilling work-related state of mind, , bored employees experience a dissatisfying negative state, often associated with negative outcomes and withdrawal from work (Bruursema et al., 2011; Game, 2007). It appears that the presence of workplace boredom decreases work engagement (Reijseger et al., 2012). Warr and Inceoglu (2012) support the notion that work engagement is related to workplace boredom, and they describe workplace boredom as a polar opposite of work engagement. Similarly, Schaufeli and Salanova (2014) state that work engagement is inversely related to workplace boredom.

Hypothesis 3: Workplace boredom has a negative relationship to work engagement.

Organisational commitment and workplace boredom

Organisational commitment can have an affective, continuance and normative component that an employee experiences within the organisation (Allen & Meyer, 1990; Meyer, Allen & Smith, 1993). The focus in this study was on the affective component. According to Allen and Meyer (1990), the affective component relates to the employee's identification and emotional connection with the organisation as well as participation in the organisation.

When workplace boredom is prevalent, the employees experience their job as dissatisfying; therefore, they are less committed to the organisation and willing to leave their jobs (Kass et al., 2001, Reijseger et al., 2012). Reijseger et al. (2012) found a negative relationship between workplace boredom and organisational commitment. This finding indicates that employees who experience workplace boredom also experience less organisational commitment.

Hypothesis 4: Workplace boredom has a negative relationship to organisational commitment.

Job satisfaction and workplace boredom

Job satisfaction refers to a positive emotional response that is derived from an individual's perception of the value attained from the job or related job characteristics (Hom & Kinichi, 2001). Job satisfaction is described in terms of its characteristics or the underlying components. These components include aspects such as remuneration, job security as well as relationships with co-workers and supervisors (Locke, 1976). Job satisfaction is considered significant, as satisfied employees perform better at their jobs than disgruntled employees, and are less likely to engage in non-work-related activities (Judge, Thoresen, Bono & Patton, 2001).

The link between workplace boredom and job satisfaction seems evident as workplace boredom directly counteracts satisfaction with work (Gardell, 1971). Hence, workplace boredom is described as a dissatisfying state (MacDonald & MacIntyre, 1997). According to Gardell (1971), employees who felt that their jobs are repetitive, were less likely to be satisfied in their work. The presence of workplace boredom seems to predict less job satisfaction and less overall satisfaction with the organisation. This notion has been confirmed, as negative correlations have been found between job satisfaction and boredom (Kass et al., 2001; MacDonald & MacIntyre, 1997).

Hypothesis 5: Workplace boredom has a negative relationship to job satisfaction.

Workload and workplace boredom

In the present study, *workload* referred to the employee's perception of work in terms of role overload (Beehr, Walsh & Taber, 1976). Role overload can be described as having too much work to do within a given timeframe (Larson, 2004), or having work that exceeds the individual's competence, skills and knowledge (Fineman & Payne, 1981; Spector & Jex, 1998).

The link between workload and workplace boredom exists as numerous studies have associated workplace boredom with having little to do, or experiencing one's job as easy and unchallenging. However, activities or tasks that are seen as complex and difficult can also evoke feelings of boredom, which refers to qualitative overload (Matthews et al., 2000). Workplace boredom may also occur where quantitative "underload" is experienced when tasks are considered to be monotonous, unchallenging and repetitive (Fisher, 1993). Thus, the expectation exists that there is a relationship between workplace boredom and workload.

Hypothesis 6: Workplace boredom and workload are negatively related.

Workplace boredom and gender

Sohail et al. (2012) found no relationship between gender and boredom at work. Similarly, for the purposes of this study, it was expected that there would be no significant correlation between boredom and gender, which would indicate discriminant validity. Discriminant validity is apparent when there is a non-significant or low correlation between the measured construct and other expected unrelated constructs, with the exception to the ones with which the variable under interest is theoretically supposed to correlate (Campbell & Fiske, 1959; Foxcroft & Roodt, 2009).

Hypothesis 7: There is no significant correlation between workplace boredom and gender.

The remainder of the article is structured to present the methodology implemented, presentation of the results, a discussion of what the results revealed in the context of relevant literature, and recommendations and implications for organisations and future researchers.

Research design

Research approach

For the purpose of this study, a quantitative research approach was used, which implies that the variables were measured in order to analyse and compare results. Quantitative research comprises large samples and data collection procedures that are structured (De Vos et al., 2012; Struwig & Stead, 2001). This study followed a cross-sectional survey design (Du Plooy, 2002). Cross-sectional designs are useful as variables are measured simultaneously and this allows for assessing interrelationship between variables (Struwig & Stead, 2001).

Research method

Research participants

Table 1 presents a breakdown of the participants comprising the sample.

Table 1

Characteristics of the participants (N = 490)

Item	Category	Frequency	Percentage (%)
Age category (in years)	18 – 29	124	25.30
	30 – 39	133	27.10
	40 – 49	122	24.90
	50 – 59	91	18.60
	60 – 69	12	2.40
	70 +	1	0.70
	Missing values	7	1.40
Gender	Male	237	48.70
	Female	250	51.30
Household	Single	112	22.90

	Married or living with a partner	284	58.00
	Living with parents	36	7.30
	Divorced or separated	27	5.50
	Remarried	26	5.30
	Missing values	5	1.00
Education	Grade 10/ Standard 8	6	1.20
	Grade 11/ Standard 9	4	0.80
	Grade 12/ Matric	106	21.60
	Technical college diploma	78	15.90
	Technicon diploma	55	11.20
	University degree	169	34.50
	Post-graduate degree	56	11.40
	Other	7	1.40
	Missing values	9	1.80
Home language	Western Germanic	327	67.70
	African languages	156	30.90
	Missing	7	1.40

This sample consisted of a combination of participants from various organisations from the logistics and manufacturing industries (N = 490). The mean age of participants was 39.16 (SD = 11.35). The majority of the sample consisted of female participants (51.30%). Participants who were married or living with a partner contributed to 58.00% of the sample. Most of the respondents had a university degree (34.50%), followed by a Grade 12 qualification (21.60%). The number of participants who spoke Western Germanic languages were 327 (67.70%) and 156 spoke an African language (30.90%).

Measuring instruments

Biographical questionnaire: A biographical questionnaire was used to determine the biographical characteristics of the participants, such as year of birth, gender, home language and level of education.

Workplace boredom was measured with the DUBS developed by Reijseger et al. (2012). This one-dimensional scale measuring workplace boredom uses a 5-point rating scale ranging from 1 (Never) to 5 (Always). Workplace boredom is measured by six items (e.g. 'I feel bored at my job' and 'I tend to do other things during my work'). The scale has a reported a Cronbach alpha coefficient of 0.80 (Reijseger et al., 2012).

Work engagement was measured in terms of items from the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006). This instrument consists of 17 items which are all scored on a 7-point frequency-rating scale ranging from 0 (Never) to 6 (Always). Only the two core components of work engagement (i.e. vigour and dedication) were used, as absorption is considered a consequence of work engagement (Langelaan, Bakker, Van Doornen & Schaufeli, 2006). For the purposes of the current study, 11 items were used measuring: vigour (e.g. 'I can continue working for very long periods at a time') and dedication (e.g. 'I find the work that I do full of meaning and purpose'). The UWES has been used in South Africa with good reliability, e.g. by Storm and Rothmann (2003).

Organisational commitment was measured by focussing solely on the affective component of organisational commitment, relating to the emotional association, involvement and the employee's identification with the organisation. Affective commitment was measured using a 5-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). This scale is based on items by Allen and Meyer (1990) and five items were used (e.g. 'I would be very happy spending the rest of my career with this organisation'). Cronbach's alpha coefficients of above 0.70 have been reported for this scale (Allen & Meyer, 1990).

Job satisfaction was measured with the scale developed by Hellgren, Sjöberg, and Sverke (1997). This 3-item instrument uses a 5-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree), to measure the individual's satisfaction with his or her job (e.g. 'I enjoy being at my job'). In the study by Hellgren et al. (1997), this scale reported a Cronbach alpha coefficient of 0.86, and in South Africa, an alpha of 0.80 has been shown (Pienaar, Sieberhagen & Mostert, 2007).***Workload***: The Quantitative Workload Inventory (QWI), developed by Spector and Jex (1998) was used to measure workload. This scale uses a 5-point rating scale, which ranges from 1 (Strongly disagree) to 5 (Strongly agree) (Spector & Jex, 1998). This scale consists of five items measuring quantity of work, amount of workload

and time pressure (e.g. ‘I have to do things in my work that I do not really have the time for.’). Cronbach alpha values for this scale have been shown to be above 0.80 (Idris, 2011).

Research procedure

Permission to gather data was obtained from various logistic and manufacturing organisations as well as from the individuals who participated in the survey. Hardcopies of the surveys were printed and handed out to the employees. Each survey comprised of a cover letter explaining the purpose of the research. Emphasis was placed on anonymity, confidentiality and voluntary participation. Once all the surveys had been collected, the data was captured and analysis could commence.

Statistical analysis

To investigate the reliability of the constructs, both alpha and omega coefficients were calculated. Acceptable values for the reliability coefficients would have a lower-bound cut-off value of 0.70 (Bland & Altman, 1997). Moreover, structural equation modelling (SEM) methods were applied with Mplus 7.2 (Muthén & Muthén, 2014). The estimation method implemented was the maximum likelihood (ML) estimator for all analyses. Firstly, a confirmatory factor analysis (CFA) was applied in order to investigate the factor loadings of the individual items of the workplace boredom latent variable. Secondly, to investigate measurement invariance based on gender, configural, metric and scalar invariance models were tested for workplace boredom. Thirdly, a total measurement model was constituted to include all the study variables to constitute a structural model to investigate the correlations and relationships proposed in the study hypotheses. To evaluate the fit of all the models to the data, the following fit indices were considered (Cudeck & Browne, 1993; Van de Schoot, Lugtig & Hox, 2012):

- the comparative fit index (CFI) (values of 0.90 and above);
- the Tucker–Lewis index (TLI) (values of 0.90 and above);
- the root mean square error of approximation (RMSEA) (values smaller than 1.0,but ideally smaller than 0.08); and
- the square root mean residual (SRMR) (values smaller than 0.08)

The practical significance of correlation coefficients were set at 0.30 and above for a medium effect, and 0.50 and above for a large effect (Cohen, 1988). Overall statistical significance was considered at the 95% level ($p \leq 0.05$).

Results

CFA of workplace boredom

The CFA results showed that the one-factor measurement model for workplace boredom was a good fit to the data (CFI = 0.97; TLI = 0.95; RMSEA = 0.06; SRMR = 0.03). This result supported H_1. Table 2 presents the standardised factor loadings and variances explained of the individual items for the workplace boredom factor.

Table 2

Standardised factor loadings of the items for the workplace boredom latent variable

Item	Item text	Loading	S.E.	*p*	R^2
1	At work, time goes by very slowly	0.25	0.05	0.001*	0.06
2	I feel bored at my job	0.69	0.03	0.001*	0.48
3	During work time I daydream	0.73	0.03	0.001*	0.53
4	It seems as if my working day never ends	0.22	0.05	0.001*	0.05
5	I tend to do other things during my work	0.62	0.04	0.001*	0.38
6	At my work, there is not so much to do	0.71	0.03	0.001*	0.51

Notes: * = $p < 0.001$; S.E. = standard error; R^2 = variance explained

Results of the CFA showed that all the items of workplace boredom had statistically significant factor loadings (λ). The items with the highest factor loading were item 3 ('During work time I daydream'; λ = 0.73; S.E. = 0.03; $p = 0.001$) followed by item 6 ('At my work, there is not so much to do'; λ = 0.71; S.E. = 0.03; $p = 0.001$). These items also had the highest explained variance values ($R^2 = 0.53; 0.51$). Conversely, the items with the lowest factor loadings were item 4 ('It seems as if my working day never ends'; λ = 0.22; S.E. = 0.05; $p < 0.001$) and item 1 ('At work, time goes by very slowly'; λ = 0.25; S.E. = 0.05; $p < 0.001$). These items also had the lowest explained variance values at 5% ($R^2 = 0.05$) and 6%

($R^2 = 0.06$), respectively. An exploratory factor analysis (EFA) was also attempted, but only a one factor model was able to converge – further evidence for the one factor structure.

Reliability coefficients for workplace boredom

The reliability indicators showed that workplace boredom had acceptable reliability ($\alpha = .78$; $\omega = 0.78$), i.e. the internal consistency was acceptable compared to the commonly accepted guidelines (Bland & Altman, 1997). This result supported H_2. The 'scale if item deleted' option showed that reliability could be improved to 0.83 if item 4 was omitted from the factor. However, analysis continued with all six items given the acceptable reliability in the first instance.

Measurement invariance of the workplace boredom factor based on gender

Table 3 presents the results of the measurement invariance testing based on gender.

Table 3

Results of the invariance testing based on gender

Models compared	$\Delta\chi^2$	***df***	***p***
Metric against configural	8.653	5	0.123
Scalar against configural	17.787	10	0.058
Scalar against metric	9.135	5	0.104

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

The results show that strong measurement invariance was evident, i.e. configural, metric and scalar invariance. This showed that the workplace boredom construct was interpreted similarly by both males and females, indicating that means can be accurately compared if desired, based on gender.

Final measurement model fit statistics and correlations

Models were initially tested with work engagement as a one-factor model (BIC = 36962.77) and two-factor model (BIC = 37676.13). The one-factor model showed the best fit to the data

and was therefore used in the final model. The final measurement model, which contained all of the study variables, showed the following fit statistics: CFI = 0.91; TLI = 0.90; RMSEA = 0.07; SRMR = 0.07. These values were considered acceptable, and the interpretation of the correlation matrix was deemed appropriate.

Table 4 presents the correlation matrix for the latent variables.

Table 4

Correlation matrix for the latent variables

Variables	**1**	**2**	**3**	**4**	**5**	**6**
1. Workplace boredom	1.00					
2. Work engagement	-0.59^{+}	1.00				
3. Job satisfaction	-0.56^{+}	0.75^{+}	1.00			
4. Organisational commitment	-0.50^{+}	0.66^{+}	0.79^{+}	1.00		
5. Workload	-0.08	0.01	-0.10	-0.08	1.00	
6. Gender	0.01	0.15*	0.05	0.09	-0.01	1.00

Notes: * = statistically significant; $^{+}$ = large practical significance

Workplace boredom was statistically negatively correlated with all of the study variables, except for overload (p = 0.207) and gender (p = 0.928). Workplace boredom was largely negatively practically significantly correlated with work engagement (r = -0.59), job satisfaction (r = -0.56), and commitment (r = -0.50). Organisational commitment was highly correlated with job satisfaction (r = 0.79). Similarly, work engagement and job satisfaction were also highly correlated (r = 0.75), presumably due to the components' affective measurements. Interestingly, even though there was a negative correlation between workload and workplace boredom, the coefficient was not statistically significant; therefore H_6 was rejected. These correlations provided evidence for convergent validity. Furthermore, the non-significant result of the correlation between gender and workplace boredom provided evidence for discriminant validity and supported H_7.

Discriminant validity: Further evidence

Barring the non-significant relationship between workplace boredom and gender which provided evidence for discriminant validity, it was decided to also apply the method described by Farrell (2010) to compare the average variance extracted (AVE) and the shared variance between constructs for further evidence of discriminant validity. To pass this test,

the AVE of the latent constructs should be higher than the shared variance between those constructs. This was indeed the case with all the variables, for example the AVE of workplace boredom was 34%, and for work engagement, the AVE was 55%. The shared variance between these two constructs was only 12% – providing further evidence of discriminant validity and more support for H_7.

Structural regressions

Regression paths were added to the final measurement model to establish the structural model. Table 4 presents the results of the structural model.

Table 5

Regression results for the structural model

Structural path	**β**	**S.E.**	***p***	**Result**
Boredom → Work engagement	-0.60	0.03	0.001	Significant
Boredom → Job satisfaction	-0.56	0.04	0.001	Significant
Boredom → Organisational commitment	-0.42	0.05	0.032	Significant

Notes: β = beta coefficient; S.E. = Standard error; *p* = Two-tailed statistical significance

As can be seen from Table 5, all of the regressions were statistically significant. Workplace boredom was therefore a negative predictor of work engagement (β = -0.60; S.E. = 0.03; $p < 0.001$; H_3 confirmed), organisational commitment (β = -0.42; S.E. = 0.05; $p < 0.001$; H_4 confirmed), and job satisfaction (β = -0.56; S.E. = 0.04; $p < 0.001$; H_5 confirmed). The standard errors of the estimates were also small, which supported the accuracy of the standardised estimates.

Discussion

Outline of the results

The aim of this study was to validate the DUBS by investigating its reliability, factorial validity, convergent validity, predictive validity and discriminant validity with the following variables: workplace boredom, gender and the organisational outcomes (i.e. work engagement, job satisfaction, organisational commitment and workload).

Firstly, this study sought to confirm that the workplace boredom scale consists of a one-factor structure. The CFA results established that the proposed one-factor measurement model for workplace boredom was indeed a good fit to the data. This is in line with the original study by Reijseger et al. (2012), providing further evidence that workplace boredom is a one-factor structure also in South Africa, which supported Hypothesis 1. The results further showed strong measurement invariance. This indicates that both males and females interpret the workplace boredom construct similarly, which allows for accurate comparison based on gender.

For the purpose of calculating the reliability of the constructs, both alpha and omega coefficients were used to attain additional information and to ensure that results were accurate. All of the alpha and omega reliability values were above the threshold of 0.70. Specifically, the workplace boredom construct also attained acceptable values (α = .78; ω = 0.78), indicating that the construct had acceptable internal consistency. Correspondingly, Reijseger et al. (2012) reported a similar alpha reliability coefficient of 0.80. This result supported Hypothesis 2.

Next, the convergent validity was investigated by establishing the correlation between workplace boredom and other theoretically related constructs (Campbell & Fiske, 1959). Correlation coefficients were investigated to confirm the degree of convergence between workplace boredom, work engagement, organisational commitment, job satisfaction and workload. As expected, most of the organisational outcomes were found to have a negative and practically significant relationship with workplace boredom. Specifically, the results indicated a negative significant correlation and regression from workplace boredom to work engagement, supporting Hypothesis 3. This is in line with current literature: when the employee experiences boredom at work, it can be anticipated that the level of work engagement will decrease as workplace boredom is a deactivating negative state, contrary to work engagement, which is described as an activating positive state (Schaufeli, 2012). Likewise, Reijseger et al. (2012) also found workplace boredom to be negatively related to work engagement.

Workplace boredom was found to be negatively practically and significantly correlated to organisational commitment. Supporting this finding, Watt and Hargis (2010) found a direct

relationship between boredom proneness and job attitudes such as organisational commitment and involvement. In addition, the findings by Reijseger et al. (2012) suggest that employees will experience more organisational commitment when experiencing less boredom. Hypothesis 4 was thus supported.

For predictive validity, structural regression paths were also added to the measurement model to determine whether workplace boredom is a predictor of work engagement, job satisfaction and organisational commitment. Workplace boredom was found to have a negative regression to job satisfaction. Thus, the presence of workplace boredom results in the employee perceiving less satisfaction with their job. This result is consistent with the description of workplace boredom offered by Mikulas and Vodanovich (1993), who describe boredom as a state of dissatisfaction. Similarly, MacDonald and MacIntyre (1997) established a significant negative relationship between job satisfaction and boredom. Kass et al. (2001) also state that employees who experience their work as being boring, would be significantly less satisfied with various aspects of their job. In summary, all these findings provided support for Hypothesis 4.

In terms of hypothesis 6, results indicated a negative correlation between workplace boredom and workload that was not statistically significant, and therefore Hypothesis 6 was rejected. This was contrary to expectation, but some conflicting research does exist. According to Karasek (1979), employees in passive unchallenging jobs are at risk of becoming bored at work. Reijseger et al. (2012) also found that a lack of demands is associated with workplace boredom. However, others have argued that some employees, irrespective of their high workload or the nature of their job, still experience workplace boredom (Fisher, 1993). According to a study by Matthews et al. (2000), work overload among participating employees led to their daily experience of boredom. Furthermore, employees who experienced high levels of stress after each working day due to high workload reported additional boredom experienced at work. These inconsistencies regarding workload contributed to the ambiguity with regard to Hypothesis 6, and warrants future investigation.
For discriminant validity, it was anticipated that workplace boredom would be unrelated to gender. This was indeed the case, and provided evidence for discriminant validity. As hypothesised (Hypothesis 7), gender was found to be unrelated to workplace boredom. Correspondingly, Harris (2000) found no interactions with regard to gender to be statistically significant – thus Hypothesis 7 was supported. Furthermore, the test for measurement

invariance based on gender showed strong measurement invariance. Therefore, the evidence suggests that both males and females interpreted the items of the workplace boredom scale in a similar way.

By confirming these hypotheses, this study was able to add value by providing a workplace boredom scale that is valid and reliable, thus suitable for use among South African employees. The importance of a valid and reliable scale is crucial as future studies on workplace boredom can investigate this phenomenon with greater accuracy and precision. Limited research is available on workplace boredom in South Africa - this study provided the foundation for future research by delivering a valid scale, to investigate workplace boredom further.

Practical implications

This study provides evidence for the validity and reliability of a workplace boredom measure for South African organisations. Organisations should measure workplace boredom and consider strategies to counter its negative effects on organisational outcomes, including workplace engagement, organisational commitment and job satisfaction, as illustrated in the current study. It is however important to note that increasing the workload of employees is not necessarily an apt strategy to tackle boredom at work (cf. Matthews et al., 2000). It should also be mentioned that boredom has been found to be connected to the creative process (cf. Kets de Vries, 2014), and it is therefore important to measure outcomes and consider the consequences of boredom in specific organisations. The importance of context should also not be discounted: boredom might be good for an art student (connected with creativity), but not necessarily in other environments.

Limitations of the study

This research provided valuable findings. However, it is essential to highlight the limitations of the current study as well. Firstly, a cross-sectional design was utilised, restricting the study from exploring any causal relationships. A longitudinal study should therefore be conducted to validate the causality of findings further (Taris & Kompier, 2006), also with additional variables such as burnout and satisfaction with life.

This data was collected from organisations in only two sectors, the manufacturing sector and the logistics sector, and care should be taken not to generalise carelessly. Therefore, additional exploration is necessary in different sectors to examine the phenomenon of workplace boredom and its manifestations further. Generalisation should thus be made with caution.

Furthermore, the results indicated that workplace boredom might not be exclusively influenced by low demands or a low workload, as previous literature had suggested (Matthews et al., 2000). Numerous employees with high demands or high workloads are also at risk of experiencing workplace boredom (Fisher, 1993). This is a vital piece of information as redesigning the job to merely include higher demands will not suffice in eradicating workplace boredom. The assortment of possible antecedents for workplace boredom should therefore be broadened beyond workload (overload and under-load) to investigate other individual factors, such as personality.

The study made use of a self-report questionnaire, which is often criticised for issues of measurement bias (Spector, 1994). Due to the nature of self-report questionnaires, the participant's perception and experience of a phenomenon are subjective. Methods to address this concern are limited (Salkind, 2009). However, self-report questionnaires are often utilised as they are considered a normal or natural method for exploring latent concepts such as workplace boredom (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Qualitative interviews are also a possibility when utilising a mixed method research design.

Conclusion

This study presented evidence pertaining to the reliability and validity of a workplace boredom scale among a sample of manufacturing and logistics employees. Specifically, workplace boredom could be confirmed as a one-factor structure, acceptable reliability coefficients where established and significant negative correlations and regressions were found among workplace boredom, job satisfaction, organisational commitment and work engagement. Managers should therefore not neglect workplace boredom instead consider strategies to eradicate the effect of boredom on organisational outcomes, which in turn would affect organisational success.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

Conclusions, Limitations and Recommendations

The purpose of this chapter is to present the conclusions regarding the findings of the study according to the general and specific objectives. In addition, the limitations of the research will be discussed, followed by the recommendations for organisations and for future research.

3.1 Conclusions

Research on boredom, especially workplace boredom, is considered to be a vastly neglected topic internationally and locally. Evidence suggests that employees are susceptible to this phenomenon and that organisations are suffering due to the manifestation of workplace boredom among employees. In South Africa, no validated workplace boredom measure exists, which impairs the advancement of workplace boredom research; thus, contributing to a lack of deeper understanding on workplace boredom in South Africa. The present study attempted to address this deficiency by investigating the reliability and validity of a workplace boredom scale, and in the process contributed to workplace boredom literature.

The general objective of this study was to determine the reliability and validity of a workplace boredom scale within the South African context. This was done by investigating the specific objectives in conjunction with the stipulated hypotheses.

The first objective of this study was to conceptualise workplace boredom, work engagement, organisational commitment, job satisfaction and workload according to literature. This objective was achieved by conducting and presenting a literature study in the second chapter of this dissertation.

The second objective was to determine the reliability and validity (construct, convergent, predictive and discriminant) of the workplace boredom scale. With the intent of determining whether the boredom scale was a reliable and valid scale pertaining to the sample, both alpha and omega coefficients were calculated. This was done to attain additional information and ensure accurate results as the alpha coefficient had been criticised in recent years (cf. Revelle & Zinbarg, 2009). The results showed reliable values for the workplace boredom construct ($\alpha = 0.78$; $\omega = 0.78$), indicating that the construct had acceptable internal consistency.

Correspondingly, Reijseger et al. (2012) reported an alpha reliability coefficient of 0.80. These results indicated that the workplace boredom scale showed acceptable internal consistency.

In terms of construct validity, the workplace boredom scale was hypothesised to be a one-factor structure. The results of confirmatory factor analysis could confirm workplace boredom as a one-factor structure, which was a good fit to the data. This result is consistent with the initial study of Reijseger et al. (2012) among a sample of Dutch employees where it was found that the DUBS consisted of a one-factor structure.

The next step was to establish the convergent validity between workplace boredom and other theoretical constructs within the workplace boredom nomological net (i.e. work engagement, workload, job satisfaction and organisational commitment). The results obtained in this study indicated that workplace boredom was negatively and practically significantly correlated with work engagement, job satisfaction and organisational commitment. Additionally, results showed that organisational commitment was highly correlated with job satisfaction. Similarly, work engagement and job satisfaction were also highly correlated with one another, presumably due to the affective nature of these constructs. This suggested that employees who experience workplace boredom are likely to be less satisfied in their jobs, experience decreased engagement at work and reduced commitment to the organisation compared to those employees who are not bored at work. These results were in line with current literature (e.g. Kass et al., 2001; Russell, 2003; Schaufeli, 2012; Watt & Hargis, 2010).

A negative correlation between workplace boredom and workload was evident. However, this relationship was not statistically significant and therefore not viable for reporting. Some researchers have shown low workload to be associated with workplace boredom (Reijseger et al., 2012), whereas others believe that workload does not affect workplace boredom (Fisher, 1993; Matthews et al., 2000). Inconsistency and disagreement in literature therefore indicate that this relationship is still somewhat ambiguous, and the current investigation found no relationship in South African data.

The next step aimed to establish the predictive validity of workplace boredom. This was done by establishing whether workplace boredom was a predictor of work engagement, job

satisfaction and organisational commitment. The results showed that all the regressions were statistically significant. Therefore, workplace boredom was shown to be a negative predictor of work engagement, organisational commitment and also of job satisfaction. This is in line with previous research: When boredom at work is experienced it can be anticipated that the level of work engagement (Reijseger et al., 2012), organisational commitment (Watt & Hargis, 2010) and job satisfaction (Kass et al., 2001) will decrease.

The final step of objective two was to determine the discriminant validity with those constructs from which it is supposed to differ. It was anticipated that workplace boredom would be unrelated to gender. The result (non-significant correlation) suggests that this was indeed the case, and the current research provided evidence for discriminant validity. The method of Farrell (2010) was also applied to investigate discriminant validity further. The result of this test showed that discriminant validity was evident for the construct.

Furthermore, a test for measurement invariance based on gender was also performed, which showed strong measurement invariance for the workplace boredom construct at configural, metric and scalar levels. Therefore, the items of the scale and experience of workplace boredom were interpreted similarly by both males and females, as has also been found by Harris (2000). The level (means) of workplace boredom can therefore be meaningfully compared between genders with the use of this validated workplace boredom scale.

The last objective of the study was to make recommendations for future research and organisations. This objective was achieved and is reported on in the following sections of the manuscript below.

3.2 Limitations

It is important to be aware of the limitations within a study. The first limitation lay in common criticism against the cross-sectional research design, indicating that the data was gathered at one point in time over a short period (Salkind, 2009), and thus causality could not be established.

The participants involved in the study were sampled based on their accessibility and proximity to the researcher. The data for this study was collected from only two sectors (manufacturing and logistics sectors) in South Africa. Caution is advised in that the findings should not be generalised carelessly, as this might lead to inaccurate results and practices.

Furthermore, self-report questionnaires have been criticised. The increased probability of attaining socially desirable answers occurs when measuring a subjective phenomenon such as workplace boredom. However, self-report questionnaires are considered a natural method for tapping into subjective concepts such as workplace boredom (Podsakoff et al., 2003).

Despite the limitations of this study, the results and findings that were obtained supported the majority of the hypotheses. The results can be considered valuable, as they provide important information for organisations and future researchers on workplace boredom within the South African context.

3.3 Recommendations

3.3.1 Recommendations for practice

The validation of a workplace boredom measure within the South African context provides organisations and consultants with the opportunity to investigate the phenomenon and gain a thorough understanding of workplace boredom and its associated organisational outcomes. The findings of this study are significant both from an organisational and an individual perspective as the results link workplace boredom to various negative organisational outcomes: dissatisfaction at work, lower commitment to the organisation and less work engagement. Organisations should therefore become aware of these risks and consider strategies to counter the negative effects on organisational outcomes or focus on strategies to eradicate workplace boredom.

With regard to finding strategies to eliminate workplace boredom, it is important to note that employees are at risk of experiencing workplace boredom regardless of high or low workload. Redesigning the job merely to include more demands will not necessarily be an apt strategy to tackle boredom at work, as might be intuitively considered. Additionally, the context in which boredom is perceived should also be accounted for as boredom might be

advantageous in some creative organisations but not necessarily in a traditional corporate environment (Schubert, 1977). However, having the ability to measure workplace boredom validly and reliably will enable organisations to make informed decisions on how to assist employees in addressing their boredom at work. If this can be done, employees would be more engaged at work and more satisfied with their jobs and they would experience a higher degree of loyalty and commitment towards the organisation – all desirable outcomes for any organisation.

3.3.2. Recommendations for future research

It is recommended that future research consider a longitudinal approach, which would further validate the findings (Taris & Kompier, 2006). Utilising a longitudinal approach will assist to gain insight and understanding into the stipulated relationships in terms of prediction(s) over time, i.e. causality.

The data for this study was collected from organisations in only two sectors. Future research should consider adding additional sectors to examine the phenomenon even further. Additionally, future research should investigate the relationship between workplace boredom and other organisational outcomes such as burnout or life satisfaction.

Future research should also focus on conducting investigations into the antecedent of workplace boredom, as ambiguity regarding the root causes of workplace boredom still exists (Martin et al., 2006). Factors such as personality traits, predisposition to boredom and task monotony should also be investigated as possible causes and/or moderators.

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