An item evaluation of a newly-developed strength-based approach scale in a South African working population

Nana Tabiri

Mini-dissertation submitted in partial fulfilment of the requirements for the degree Magister Artium Industrial Psychology at the North-West University (Potchefstroom Campus)

Supervisor: Prof. Karina Mostert

May 2012

Potchefstroom

TERESA KAPP

Language Services
082 789 7878

tekapp@mweb.co.za

Copywriting/Editing/Translation/Proofreading

02 May 2012

To whom it may concern

CONFIRMATION OF EDITING

This serves to confirm that the following dissertation:

An item evaluation of a newly developed strengths-based approach scale in a South African working population

by

N. Tabiri

was duly edited by the writer hereof. I am an accredited editor with the University of Johannesburg and do regular work for Absa Platinum and Private bank as well as African Journal of Business Ethics.

Should you have any queries, please call me on the number provided.

Sincerely

Teresa Kapp

+27827897878

tekapp@mweb.co.za

COMMENTS

The reader is reminded of the following:

- The editorial style as well as the references referred to in this mini dissertation follow the format prescribed by the Publication Manual (6th edition) of the American Psychological Association (APA). This practice is in line with the policy of the Programme in Industrial Psychology of the North-West University (Potchefstroom) to use APA style in all scientific documents as from January 1999.

- The mini dissertation is submitted in the form of a research article. The editorial style specified by the South African Journal of Industrial Psychology (which agrees largely with the APA style) is used, but the APA guidelines were followed in referencing and constructing tables.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

CHAPTER 3: CONCLUSIONS, LIMITATIONS, AND
       RECOMMENDATIONS

LIST OF TABLES

ABSTRACT

Title: An item evaluation of a newly developed strength-based approach scale in a South African working population

Key terms: Strengths-based approach, item evaluation, reliability, validity, Rasch analysis, positive psychology paradigm, South African working population.

South African organisations face the challenge of creating organisations that will engage employees in ways that allow for the optimisation of their strengths. This can be achieved by following a strength-based approach (SBA). An SBA aims to achieve optimisation of human functioning, where talents and strengths are the focus and weaknesses are understood and managed. Although previous research suggests that an SBA has positive influences on individual and organisational outcomes, no instrument exists within the South African context that measures employees' perception of the extent to which they believe their organisation makes use of their strengths and talents. Recently, a new scale was developed to address this need. However, no studies have been done to see how well the items of this scale function.

The objectives of this research were to 1) conceptualise an SBA according to literature, 2) determine whether the items in the SBA scale are unidimensional, 3) to determine the internal validity and reliability of the new SBA scale, and 4) make recommendations for future research. A cross-sectional quantitative research design was used whereby online and hardcopy versions of the questionnaire were distributed to participants. A sample of 699 participants was collected from the Gauteng and North-West provinces. Rasch analysis was used to determine the reliability and validity of the items. Acceptable item reliability was found. Both the item and person separation indices were acceptable. Mean infit and outfit indices for both person and item were acceptable. The seven-point frequency-based Likert scale worked satisfactorily overall, although categories 0, 1, and 2 were under-utilised. Finally, the infit and outfit statistics for all eight items functioned satisfactorily, except for one item.

Recommendations are made for practice as well as for future research.

OPSOMMING

Titel: 'n Item-evaluering van 'n nuut-ontwikkelde sterktegebaseerde-benadering-skaal in 'n Suid-Afrikaanse werkende bevolking

Sleutelterme: Sterkte-gebaseerde benadering, item-evaluering, betroubaarheid, geldigheid, Rasch-analise, positiewe sielkunde-paradigma, Suid-Afrikaanse werkende bevolking.

Suid-Afrikaanse organisasies moet die uitdaging die hoof bied om organisasies te skep wat werknemers sal betrek op 'n manier wat voorsiening vir die optimale aanwending van hul sterk punte maak. Dit kan verwesenlik word deur 'n sterkte-gebaseerde benadering (SGB) te volg. 'n SGB het optimale menslike funksionering ten doel, waar talente en sterk punte die fokus is en swakhede verstaan en bestuur word. Hoewel vorige navorsing daarop dui dat 'n SGB 'n positiewe invloed op individuele en organisasie-uitkomste het, is daar tans geen instrument binne die Suid-Afrikaanse konteks wat mense se persepsie kan meet van die mate waarin hulle glo dat hul organisasie van hul sterk punte en talente gebruik maak nie. Daar is onlangs 'n nuwe skaal ontwikkel om hierdie behoefte aan te spreek. Daar is egter tot op hede geen studies gedoen om te bepaal hoe goed die items van die skaal funksioneer nie.

Die doelwitte van hierdie navorsing was om 1) 'n SGB volgens die literatuur te konseptualiseer, 2) te bepaal of die items in die SGB-skaal unidimensioneel is, 3) die interne geldigheid en betroubaarheid van die nuwe SGB-skaal te bepaal, en 4) aanbevelings vir toekomstige navorsing te doen. 'n Deursnee-kwantitatiewe navorsingsontwerp is gebruik. Aanlyn- en gedrukte weergawes van die vraelys is aan deelnemers versprei. 'n Steekproef van 699 deelnemers van die Gauteng- en die Noordwes-provinsies is gebruik. Rasch-ontleding is gebruik om die betroubaarheid en geldigheid van die items te bepaal. Aanvaarbare item-betroubaarheid is gevind. Beide die item- en die persoon-skeidingindekse was aanvaarbaar. Gemiddelde *infit-* en *outfit*-indekse vir beide die persoon en die item was aanvaarbaar. Die sewepunt frekwensie-gebaseerde Likertskaal het oor die algemeen bevredigend gewerk, hoewel kategorieë 0, 1 en 2 onderbenut was. Ten slotte, die *infit-* en *outfit*-statistieke vir al agt items het bevredigend gefunksioneer, behalwe vir een item.

Aanbevelings word vir die praktyk sowel as vir toekomstige navorsing gedoen.

CHAPTER 1

INTRODUCTION

This mini dissertation aims to evaluate the items within a newly developed strength-based approach scale developed for the South African population. Specifically, the functioning of the items within the SBA scale will be assessed.

This chapter presents the problem statement and a discussion of the research objectives, where the general and specific objectives are set out. The research method is explained and an overview of the chapters is provided.

1.1 PROBLEM STATEMENT

In the modern business environment, with the advent of globalisation, the changing nature of work, and advancements in technology, companies have been forced to approach the way they function with a strong external focus (Meyer, 2007). With business partnerships extending across local, regional, national, and international borders, companies are forced to compete not only on a local level but also on an international level (Meyer, 2007). Therefore, maintaining a competitive advantage is a requirement for organisational success. To a large extent, this depends on an organisation's human capital (Erasmus, Loedolff, Mda & Nel, 2009; Hall, 2008). Human capital is an organisation's most valuable asset (Mayo, 2001) and requires considered development. However, the current trend in most organisations is to focus on a deficiency-based approach (DBA) to people development (Meyer, 2007). A DBA refers to the training and development of employees' areas of development or improvement. This approach is mainly based on the belief that in order to help employees perform to their greatest potential, more focus should be placed on improving their weaknesses or deficiencies through various development and training methods (Buckingham & Clifton, 2001; Clifton & Harter, 2003; Meyers, 2010).

The DBA was challenged by Martin Seligman, who introduced a new paradigm that initiated a shift in psychology's focus towards a more positive psychology that would balance the long-standing focus on weaknesses (Compton, 2005; Gable & Haidt, 2005; Hodges & Harter,

2005; Luthans & Church, 2002; Peterson, 2006; Seligman & Csikszentmihalyi, 2000; Snyder & Lopez, 2009). The aim of positive psychology is to "catalyse a change in psychology from a preoccupation with repairing the worst things in life to also building the best qualities in life" (Snyder & Lopez, 2005, p.3). According to Joseph and Linley (2004), the major distinction between mainstream psychology and positive psychology is that mainstream psychology focuses on negative behaviour and various forms of dysfunctions, whereas positive psychology concentrates on positive experiences and positive characteristics or virtues. An underlying assumption of positive psychology is that people can choose, change, and control their life's direction, which validates efforts to build human strengths and fosters civic virtues (Bolt, 2004). Positive psychology takes as its point of departure that it is within an individual's control to realise his or her full potential (Linley & Joseph, 2004). In addition, positive psychology argues that strengths and virtues can and must be cultivated (Seligman & Csikszentmihalyi, 2000).

The shift in focus towards positive psychology quickly gained popularity amongst organisational researchers, and has led to several branches of research such as positive organisational scholarship (Cameron & Caza, 2004; Cameron, Dutton & Quinn, 2003), positive organisational behaviour (Luthans & Church, 2002), strengths-based leadership (Burkus, 2011), strengths coaching (Govindji & Linley, 2007, Linley & Harrington, 2006) and strengths-based development (Hodges & Clifton, 2004). According to Duckworth, Steen, and Seligman (2005), several annual conferences are now held, including an International Positive Psychology Summit (co-sponsored by the Gallup Organisation), the European Positive Psychology Summit, and the Positive Psychology Summer Institute for assistant professors and advanced graduate and postdoctoral students. Many books and special editions of journals summarise in more detail important findings to date (e.g., the Handbook of Positive Psychology, Special Edition of Psychological Inquiry, Special Edition of American Psychologist, and many more). Further examples of how positive psychology has been applied in organisations can be found in leadership development, where elements of positive psychology are implemented, such as positive feedback (Kaplan & Kaiser, 2009). This emphasises that the greatest potential for improvement of employees is no longer seen as residing in weaknesses, but rather in the inclusion and increased concentration on strengths and talents that are already possessed by the employee (Buckingham & Clifton, 2001). This new perspective is called an SBA and is aimed at using positive psychological potential in the organisational context.

There is a difference between strengths and an SBA. A strength is "a natural capacity for behaving, thinking or feeling in a way that allows optimal functioning and performance in the pursuit of valued outcomes" (Linley & Harrington, 2006, p. 88). An SBA by definition is a focus on the positive, to value individuals, to advance and support the workforce, and to give individuals the opportunity to do that at which they are good (i.e. to focus on and use their strengths and talents) (Meyers, 2010). An SBA is related to the fact that positive emotions have an enduring nature, which serves to broaden and build the individual's thoughts and actions and produce enduring resources for the future (Clifton & Harter, 2003).

Organisations that use an SBA do not aim to ignore weaknesses, they aim to achieve optimisation of human functioning, where talents and strengths are the focus and weaknesses are understood and managed (Buckingham & Clifton, 2001; Clifton & Harter, 2003). According to Pritchett (2008), if an organisation wants to improve employee performance, enhance leadership, and develop an organisational culture of winning, strengths development needs to be encouraged at every level of the organisation, and this needs to be an on-going process. According to Luthans and Church (2002), enhancing managers' knowledge of their strengths and weaknesses is integral to ensuring long-term executive success and sustainable performance improvement. Furthermore, managers who create environments in which employees are able to make the most of their talents have more productive work units with less employee turnover (Clifton & Harter, 2003; Lopez, Hodges & Harter, 2005). People who use their strengths are often happier and more fulfilled, and feel as if they have more energy. Their performance takes less effort, learning is quicker and sustained, and they are more interested in the activity, which leads to deeper satisfaction and human flourishing (Govindji & Linley, 2007). According to Lopez, Hodges and Harter (2008), Gallup (an organisation widely known for conducting research on employee selection and developing numerous semi-structured interviews to identify talent in the work and school environment) provided evidence in research showing that an SBA relates to various positive outcomes, including increased employee engagement and productivity. Their studies also show that implementing an SBA increases self-confidence, direction, hope, and altruism (Hodges & Clifton, 2004) in college students.

Critics may argue that an SBA is not different from approaches like high commitment management, high-involvement work systems, or high-performance work systems (Huselid, 1995; Lawler, 1986; MacDuffie, 1995; Pfeffer, 1998), which also strive for individual and

organisational flourishing. However, these approaches are general and preoccupied with counting Human Resource (HR) practices. They fail to explain the processes through which they operate and how practices should be applied (Boxall & Macky, 2009). Boxall and Macky (2009) argue that HR managers could gain an understanding of the processes that are critical in linking HR practices to desired outcomes. In other words, they postulate a shift in the focus from how things are done generally to how things work specifically (Boxall & Macky, 2009). The SBA answers the latter question by specifying why the combination of the identification, appreciation, development, and use of strengths is important, and how these factors contribute to company performance by various processes and mechanisms.

Literature on positive psychology (specifically the SBA) within the organisational setting is still largely more theoretical than empirical (Kaiser, 2009). The current empirical literature focuses mainly on positive subjective experiences and positive individual characteristics, but not on positive organisations and communities (Gable & Haidt, 2005). This is a cause for concern as human beings do not function in isolation, but within specific contexts. Furthermore, the majority of individuals spend most of their time at work. Therefore, there is a call for positive psychology literature that presents new interventions aimed at contributing to the functioning of workplaces (Gable & Haidt, 2005). It is for this reason that the importance of building on previous positive psychology research and the respective theories is emphasised. This is in order to develop an organisational approach to human resource management that suggests how a positive psychology perspective can be implemented within organisations. An SBA focuses on individual strengths as one of the central concepts of positive psychology, and explicitly focuses on identifying, building, and using strengths of employees that optimise workplace functioning and contribute to overall organisational flourishing (Compton, 2005).

Even though it is clear that an SBA is associated with several positive outcomes for the individual and the organisation, no scale specifically applicable to the South African context is available for assessing employees' perceptions of the extent to which their organisations focus on and use their strengths and talents in the workplace. This is important to measure in order to establish relationships with organisational outcomes such as work engagement, productivity, organisational commitment etc. Internationally, instruments such as the Clifton StrengthsFinder and the Values in Action inventory are available. However, these instruments are used to *identify* individual talents).

Only the Dutch scale developed by Van Woerkom and her colleagues (see Meyers, 2010) measures an organisational SBA as perceived by the employees. This scale was designed to measure four phases of an SBA on a five-point Likert scale from 1 (totally disagree) to 5 (totally agree). These phases are identification, development, use, and appreciation of an employee's strengths within the working environment. It includes items from the Strengths Knowledge Scale (Govindji & Linley, 2007), the Strengths Use Scale (Govindji & Linley, 2007), and the Gallup Workplace Audit (Harter, Schmidt & Hayes, 2002). Five items measure the identification of talents (e.g., "In this organisation I am made aware of my competences"). Seven items measure the development of strengths (e.g., "In this organisation I am stimulated to further develop my competences"). In addition, seven items measure the use of strengths (e.g., "In this organisation I get the opportunity to do what I am good at"). Finally, six items measure the appreciation of strengths (e.g., "In this organisation I receive compliments for performing well"). Principal component analysis was used to test the factor structure to make the multivariate data easier to understand (Meyers, 2010). Results from this test revealed a forced three-factor structure (identification and development, $\alpha = 0,91$; appreciation, $\alpha = 0,91$; and use, $\alpha = 0,74$). However, the eigenvalue of the first factor was 11,15 and explained 44,59% of the variance, indicating that there is one encompassing factor underlying most of the items.

The work done by Van Woerkom and her colleagues was used as the platform for the development of a new SBA scale for the South African population or context (Els, Mostert, Van Woerkom, Rothmann & Bakker, in progress). The new scale is rooted in the framework of three models, namely the Happiness-Productive Worker Thesis (Cropanzano & Wright, 2001), the Broaden-and-Build theory of positive emotions (Frederickson, 2004), and the Job Demands-Resources (JD-R) Model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007).

Within the happy-productive worker thesis, it is hypothesised that happy employees exhibit higher levels of job-related performance behaviours than unhappy employees (Cropanzano & Wright, 2001). According to Cropanzano and Wright (2001), employees who show low levels of happiness are more sensitive to unrest within their organisations and more pessimistic and defensive around co-workers. Conversely, according to Zelenski, Murphy, and Jenkins (2008), happier employees are sensitive to opportunities, more helpful to co-

workers, and more confident. Truly unhappy employees, those who are depressed, are likely to display little energy or motivation, and therefore do not meet deadlines or reach goals. If organisations adopt an SBA within their organisations, employees will be encouraged to utilise their strengths within their jobs. The opportunity to do what they are good at will motivate the employee, which, in turn, will make the organisation as a whole more productive.

Employees who are allowed to use their strengths experience positive emotions. According to the Broaden-and-Build theory, positive emotions appear to broaden peoples' momentary thought-action repertoires and build their enduring personal resources (Fredrickson 1998, 2001, 2004). Joy sparks the urge to play, and interest sparks the urge to explore (Fredrickson, 2004). By broadening an individual's momentary thought-action repertoire – whether through play, exploration, or similar activities – positive emotions promote discovery of creative actions and ideas, which, in turn, build that individual's personal resources (physical, intellectual, and so on). Clifton and Harter (2003) similarly state that the success of the strengths approach is related to "the enduring nature of positive emotions, which serves to broaden and build the individual's thoughts and actions and produce enduring resources for the future" (p.115).

According to the JD-R model, the characteristics of an individual's work environment can be classified into two general facets: job demand and job resources (Demerouti et al., 2001; Xanthopoulou et al., 2007). Job demands are those physical, social, or organisational aspects of the job that require sustained physical and/or psychological effort. Job resources are those physical, social, or organisational aspects of the job that (a) are functional in achieving work-related goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate personal growth and development (Xanthopoulou et al., 2007). Job resources exist on three levels: the organisational level (e.g., salary or wages, career opportunities, job security), the interpersonal level (e.g., supervisor and co-worker support, team climate, role clarity), and at task level (e.g., skill variety, task identity, task significance, autonomy, and performance feedback).

The JD-R model proposes that job resources may buffer the impact of job demands on job strain, including burnout (Bakker, Demerouti, Taris, Schaufeli & Schreurs, 2003), and that job resources have motivational potential and lead to high work engagement, low cynicism,

and excellent performance. Job resources may play either an intrinsic motivational role because they foster employees' growth, learning, and development, or they may play an extrinsic motivational role because they are instrumental in achieving work goals (Bakker & Demerouti, 2007). The SBA can therefore be considered a job resource on an organisational level. Furthermore, the SBA will play an extrinsic motivational role in that, if an employee's work environment focuses on using employees' strengths, employees will experience more positive emotions and show an increased willingness to dedicate their efforts and abilities to their work tasks (Demerouti & Bakker, 2011).

In order to develop the new SBA scale (Els et al., in process), a four-step procedure was followed (DeVellis, 2003): 1) initial construct conceptualisation, 2) item generation and evaluation, 3) item development, and 4) item refinement and judgement. Drawing on literature, during the initial construct conceptualisation phase, Els et al. (in progress) conceptualised an SBA as an organisational resource and defined it as employees' perceptions of the extent to which the formal and informal policies, practices, and procedures in their organisation focus on the use of their strengths.

During the item generation and evaluation phase, an initial item pool was generated from existing instruments, mainly from the Dutch instrument. However, many new items were developed. Items were then checked for appropriateness within the South African context. During the item evaluation process, two Industrial Psychologists (i.e. researchers in the area of work-related wellbeing) led the evaluation process and ensured that the items were classified into the appropriate categories using specific criteria. The criteria were the following: items that are 100% correct or applicable to the new scale, items that are mostly correct but which may require some changes in terms of the wording, items where some part of the item can be used, items not applicable at all, and items where some words may be used to construct new items. During the assessments of the items, inappropriate items were discarded, and good items were discussed in order to select the best items, which would be used in the item development process that followed.

During the item development phase, the most appropriate remaining items (both newly developed and adapted from the initial item pool) were re-evaluated for fit with the proposed definition. The wording of some items were adapted in order for these items to correspond with the newly developed frequency-based response format scale: 0 (Never), 1 (Rarely), 2

(Occasionally), 3 (Sometimes), 4 (Frequently), 5 (Usually) and 6 (Almost always). Following the item development process, was the item refinement and item judgement phase. During this phase, a panel of five Industrial Master's students in psychology were asked to judge the items together with items from other relevant scales (these included items measuring a deficiency-based approach, strengths-orientated behaviour, and deficiency-orientated behaviour). The students were provided with the definition of the constructs and asked to categorise the items into the different scales. They were also asked to indicate items that were complex or ambiguous. Based on their input and feedback, editorial changes and refinements were made to some items of the scale. For the final scale, eight new items were developed.

In the process of any scale development or evaluation, a crucial feature that requires attention is the number of items used in the scale to measure specific constructs (DeVillis, 2003). The number of items is closely related to the reliability of the scale; therefore, researchers are constantly confronted with the dilemma of constructing either shorter scales that are participant-friendly or longer scales that are tedious but have higher levels of reliability (DeVillis, 2003; Moerdyk, 2009). The length and quality of the items are of utmost importance for the overall reliability of any scale. For this reason, a larger amount of items were developed for the SBA scale. After the scale development process is completed, the next step is to evaluate the items of the new scale and to discard items that do not function properly. This is the main focus of the current research study: to examine the performance of the items in the new SBA scale using Rasch analysis and inter-item correlations (specifically how items function in isolation and in relation to one another).

The increased use of Item Response Theory (IRT), Rasch analysis in particular, in recent studies indicates that IRT is preferred in combination with the use of Classical Test Theory (CTT), although, within psychometric analysis, CTT and IRT are widely recognised theories for the development and analysis of standardised instruments. According to Taylor (2008), the basic assumption of CTT is that the score an individual obtains on a test or questionnaire will reflect his or her true standing on the latent construct being measured (true score) plus the measurement error. A major difference between CTT and IRT is that CTT is more likely to focus on the total score of the test, whilst IRT focuses on the individual items (Anastasi & Urbina, 1997). CTT is also restricted in that the characteristics of the test cannot be separated from the characteristics of the respondent. Therefore, statistics are item-dependent and the

item statistics are sample dependent. Furthermore, CTT tends to be test orientated rather than item orientated (Taylor, 2008).

Rasch analysis is used to explore the dimensionality of questionnaires, because it allows for the evaluation of the fit of the scale items to the unidimensional model. Rasch analysis is item orientated and sample independent (Rasch, 1960). The item fit derived by this method helps to identify and remove items in order to enhance the unidimensionality of the assessed construct (Bond & Fox, 2001). Rasch analysis is an iterative procedure that shows what should be expected in responses to items if measurement is to be achieved (Rasch, 1960). It is the most widely used method of evaluating the psychometric properties of both new and existing instruments (Tesio, 2003).

According to Bond and Fox (2007), the Rasch model states that the probability of a person correctly answering an item is a logistical function of the person's ability minus the item difficulty. Within the framework of the Rasch model, person ability refers to the level of the construct being measured, whereas the item difficulty refers to the intensity of the item rather than the difficulty of the item. Additionally, the Rasch model also takes into account the different categories on the scales, where persons with the same ability (or level of the construct) will respond differently to items with different intensities. It therefore indicates that the probability of the person selecting a certain point on a scale is the logistical function of the person's ability minus the item difficulty (intensity), plus the difficulty of the threshold between the current scale category and the next category (Bond & Fox, 2007).

Recently, the use of Rasch analysis specifically for the development and analysis of questionnaires or instruments has increased within the field of psychology and psychiatry (Betemps & Baker, 2004; Cervellione, Lee & Bonanno, 2009; Chien, Hsu, Chein, Guo & Su, 2008; Merrell & Tymms, 2005; Pallant & Tennant, 2007; Prieto, Alonso & Lamarca, 2003; Salzberger & Sinkovics, 2006). Therefore, although the use of the Rasch model is preferred over the use of CTT and factor analysis, according to Meads and Bentall (2008), the use of the Rasch model only determines whether items can be considered unidimensional. It is therefore justifiable to claim that the items measure one construct only once unidimensionality is confirmed (Meads & Bentall, 2008). In addition, although the Rasch model has been used in some recent South African studies (De Bruin & Taylor, 2005; Kagee & De Bruin, 2007; Koekemoer, Mostert & Rothmann, 2010; Taylor, 2008), no studies could

be found that use the Rasch model specifically for scale development within the field of the SBA.

The aim of the current study is therefore to evaluate the reliability and validity of the SBA Scale within a South African population using Rasch analysis. This study is a preliminary analysis of the SBA scale, with the aim of evaluating the functioning of the items.

Based on the above problem statement, the following research questions were formulated:

- How is SBA conceptualised in literature?
- Are the items in the SBA scale unidimensional?
- What is the reliability of the new SBA scale?
- What recommendations can be made for future research?

1.2. RESEARCH OBJECTIVES

The research objectives are divided into general and specific objectives.

1.2.1 General Objectives

The general objective of this study is to evaluate the reliability and validity of the South African SBA Scale using Rasch analysis.

1.2.2 Specific objectives

The specific objectives of this research are to:

- To conceptualise SBA according to literature.
- To determine whether the items in the SBA scale are unidimensional.
- To determine the eliability of the new SBA scale.
- To make recommendations for future research.

1.3 RESEARCH METHOD

1.3.1 Research approach

A quantitative research design was used in this study in order to obtain information from the sample. According to Struwig and Stead (2001), quantitative research is a form of conclusive research involving large representative samples and a rather structured data collection process. More specifically, a cross-sectional survey design was used to analyse the data, whereby a sample is taken from a population at one time (Shaughnessy & Zechmeister, 1997; Struwig & Stead, 2001). Online and hard copy questionnaires were used to collect data.

1.3.2 Literature review

The following literature sources were consulted:

A review of the literature on an SBA was done. The sources consulted include EBSCOHOST, Emerald, Science Direct, ProQuest, Sabinet, LexisNexis, library catalogues, psychology journals, industrial psychology journals, textbooks, and dissertations and theses.

1.3.3 Research participants

A convenience sample (N = 699) of participants was gathered, participants needed to currently hold employment in an organisation within South Africa. Participants were selected from the general working population in different occupational groups with various educational backgrounds.

1.3.4 Measuring instrument

Strength-based Approach Scale. The newly developed South African SBA scale was used to measure the employees' perceptions of the use of their strengths in their organisations. The SBA scale consists of eight items measuring the extent to which the employees perceive their organisations as ensuring and focusing on the use of their strengths (Els et al., in process). The scale is rated on a seven-point frequency-based Likert scale: 0 (Never), 1 (Rarely), 2

(Occasionally), 3 (Sometimes), 4 (Frequently), 5 (Usually) and 6 (Almost always). An example of an item is: "My organisation gives me the opportunity to do what I am good at."

1.3.5 Research procedure

The management of each organisation within various occupation groups was approached in order to obtain permission to conduct the research and to use the data obtained anonymously for research purposes. The questionnaire was distributed as both a hard and an electronic copy. A letter of consent was issued in which the purpose of the study was explained. Participation in this study was completely voluntary. The questionnaire took approximately 40 minutes to complete and field workers went every two to three days to collect any completed questionnaires and check the progress of questionnaire completion. A deadline was set by which time all the questionnaires needed to be collected. Once this was done, the data analysis process began.

1.3.6 Statistical analysis

Statistical analysis was carried out using the WINSTEPS Rasch analysis software program, version 3.68 (Linacre, 2009). For the purpose of the current study, the overall dimensionality of the SBA scale was not evaluated since the main objective of this research was to evaluate the performance of the items. In order to determine reliability using Rasch analysis, an item separation index and reliability measures were generated. In addition to this, item fit was analysed. Rasch analysis provides two reliability estimates: person reliability and item reliability. A person reliability index measures the degree to which the scale can differentiate persons according to the measured variable, whilst the item reliability index measures the degree to which the relative difficulties of items are differentiated along the measured variable (Cervellione et al., 2009; Fox & Jones, 1998).

The unit of measurement in Rasch analysis is logits, which is the natural logarithm of the odds of success in choosing a response (Lamoureux, Pesudovs, Thumboo, Saw & Wong, 2009). Tasks of average difficulty are assigned 0 logits, tasks with above average difficulty receive a positive logit score, and tasks with below average difficulty receive a negative logit score (Bond & Fox, 2001; Taylor, 2008; Lamoureux et al., 2009). In item and person reliabilities, values range from 0,00 to 1,00, where a value greater than or equal to 0.8 is

considered acceptable (Fox & Jones, 1998). Therefore, whilst item measure looks at the intensity with which the items measure the latent trait within fit statistics, item fit relates to how probable a person's response is. Fit statistics are therefore used to identify items or persons who answer in inconsistent or erratic ways for whatever reason, allowing for the identification of problematic items (Koekemoer et al., 2010).

The Rasch model uses two types of statistics to evaluate item fit, namely infit and outfit statistics (Linacre, 2005). Infit statistics are used to identify problems with the measurement items, and is sensitive to irregular responses to these on-target items, whilst outfit statistics is sensitive to irregular responses to off-target items (Linacre, 2005; Taylor, 2008). Reasonable item mean squares for infit and outfit Likert survey data range from 0,60 to 1,40 (Bond & Fox, 2007).

Finally, a separation index is a measure that estimates the spread of persons or items on the measured variables. Separation indices show that if the analysis were repeated with another sample of participants, it could be expected that the difficulty order of the items would remain the same, and that items are well separated in terms of their difficulty parameters (Taylor, 2008). A reasonable separation index value for persons, items, or both is 2,00 or more (Fox & Jones, 1998).

1.3.7 Ethical considerations

This online questionnaire included a description of the purpose of the research and was only opened once the participant had given his or her consent to participate in the research. The online questionnaire was anonymous in order to protect the privacy of the participants. Hard copy questionnaires will be kept in a safe and secure location. Only researchers involved in the study will have access to the data, furthermore, no personal information will required that would lead to the identification of participants.

1.4 OVERVIEW OF CHAPTERS

In Chapter 2, the findings of the research objectives are discussed in the form of a research article. Chapter 3 discusses the conclusions, limitations, and recommendations of this research study.

1.5 CHAPTER SUMMARY

This chapter presented the problem statement, research questions, and research objectives. The research methodology was outlined along with an overview of the chapters that will follow.

REFERENCES

Anastasi, A., & Urbina, S. (1997). *Psychological testing*. (7th ed.). Upper Saddle River, New Jersey: Prentice Hall.

Bakker, A. B., Demerouti, E., Taris, T., Schaufeli, W. B., & Schreurs, P. (2003). A multigroup analysis of the Job Demands-Resources model in four home care organizations. *International Journal of Stress Management, 10*, 6-38.

Bakker, A. & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309-328.

Betemps, E., & Baker, D.G. (2004). Evaluation of the Mississippi PTSD scale – revised using Rasch measurement. *Mental Health Services Research, 6*(2), 117-125.

Bolt, M. (2004). *Pursuing human strengths: A positive psychology guide*. New York: Worth.

Bond, T. G., & Fox, C.M. (2001). *Applying the Rasch model: Fundamental measurement in the human sciences*. New Jersey: Lawrence Erlbaum Associates, Publishers.

Bond, T. G. & Fox, C.M. (2007). Applying the Rasch model: Fundamental measurement in the human sciences. (2nd ed.). New Jersey: Lawrence Erlbaum Associates, Publishers.

Boxall, P., & Macky, K. (2009). Research and theory on high-performance work systems: Progressing the high-involvement stream. *Human Resource Management Journal, 19*(1), 3-23.

Buckingham, M., & Clifton, D.O. (2001). Now, discover your strengths. *Journal of Religious Leadership, 2*(2), 213-215.

Burkus, D. (2011). Building the strong organization: Exploring the role of organisational design in strengths-based leadership. *Journal of Strategic Leadership, 3*(1), 54-66.

Cameron, K.S., Dutton, J.E., & Quinn, R.E. (Eds.). (2003). *Positive organizational scholarship*. USA: Berrett-Koehler.

Cameron, K., & Caza, A. (2004). Contributions to the discipline of positive organizational scholarship. *American Behavioral Scientist,* 46, 731-739.

Cervellione, K. L., Lee, S., & Bonanno, G. A. (2009). Rasch modeling of the self-deception scale of the balanced inventory of desirable responding. *Educational and Psychological Measurement, 69*(3), 438-458.

Chien, T-W., Hsu, S-Y., Chein, T., Guo, H.-R., & Su, S. B. (2008). Using Rasch Analysis to validate the Revised PSQI to assess sleep disorders in Taiwan's hi-tech workers. *Community Mental Health Journal*, *44*, 417-425.

Clifton, D. O., & Harter, J. K. (2003). Strengths investment. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship*. (pp. 111-121). SF: Berrett-Koehler.

Compton, W. C. (2005). *An introduction to positive psychology*. Belmont, CA: Thomas Wadsworth.

Cropanzano, R., & Wright, T. A. (2001) . When a "happy" worker is really a "productive" worker: A review and further refinement of the happy-productive worker thesis [Abstract]. *Consulting Psychology Journal: Practice and Research, 53*(3), 182-199. Retrieved May 16, 2011, from http://psycnet.apa.org/index.cfm?fa=buy.optionToBuy&id=2 001-18751-005.

De Bruin, G. P., & Taylor, N. (2005). Development of the sources of work stress inventory. *South African Journal of Psychology, 35*(4), 748-765.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*, 499-512.

DeVellis, R.F. (2003). *Scale development, theory and application*. (2nd ed.). Thousand Oaks, CA: Sage.

Duckworth, A.L., Steen, T. A., & Seligman, M. E. P. (2005). Positive psychology in clinical practice. *Annual Review of Clinical Psychology, 1*, 629-651.

Els, C., Mostert, K., Van Woerkom, M., Rothmann, S. Jnr., & Bakker, A. B. (in process). *Following a strength-based and deficiency-based approach: The development and psychometric properties of a new scale.*

Erasmus, B. J., Loedolff, P.v.Z., Mda, T. V., & Nel, P. S. (2009). *Managing training and development in South Africa*. (5th ed.). South Africa: Oxford University Press.

Fox, C. M., & Jones, J. A. (1998). Uses of Rasch modeling in counseling psychology research. *Journal of Counseling Psychology, 45*, 30-45.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*, 300-319.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218-226.

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Phil. Trans. R. Soc. Lond. B, 359*, 1367–1377. Retrieved May 16, 2011, from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1693418/pdf/15347528.pdf.

Gable, S. L., & Haidt, J. (2005). What (and why) is Positive Psychology? *Review of General Psychology, 9*(2), 103-110.

Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review, 2*(2), 143-153.

Hall, B. W. (2008). *The new human capital strategy: Improving the value of your most important investment- year after year.* AMACOM Div American Mgmt Assn.

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology, 87*, 268-279.

Hodges, T. D., & Harter, J. K. (2005). The Quest for Strengths: A review of the theory and research underlying the StrengthsQuest program for students. *educational HORIZONS*, 190-201.

Hodges, T., & Clifton, D. O. (2004). Strengths-based development in practice. In P.A. Linley & S. Joseph (Eds.). Positive psychology in practice. Hoboken, NJ: Wiley. *Industrial and Labour Relations Review, 48*(2), 197-221.

Huselid, M. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal, 38*(3), 635-672.

Joseph, S., & Linley, P. A. (2004). *Positive therapy: A positive psychological theory of therapeutic practice.* In P. A. Linley & S. Joseph (Eds.), Positive psychology in practice (pp. 354-368). Hoboken, New Jersey: Wiley.

Kagee, A., & De Bruin, D. (2007). The South African former Detainees Distress Scale: Results of a Rasch analysis. *South African Journal of Psychology, 37*, 518-529.

Kaiser, R. B. (2009). *Chapter 1: The rest of what you need to know about strengths-based development.* Excerpted from: The perils of accentuating the positive. Tulsa OK: Hogan Press.

Kaplan, R. E., & Kaiser, R. B. (2008). Towards a positive psychology for leaders. In P. A., Linely, S. Harrington, & N. Page (Eds*.). Oxford handbook of positive psychology and work*. New York: Oxford university Press.

Koekemoer, E., Mostert, K., & Rothman, S. Jr. (2010). Interference between work and nonwork roles: The development of a new South African instrument. *SA Journal of Industrial Psychology, 36*(1).

Lamoureux, E. L., Pesudovs, K., Thumboo, J., Saw, S. M., & Wong, T. Y. (2009). An evaluation of the reliability and validity of the Visual Functioning Questionnaire (VF-11) using Rasch analysis in an Asian population. *IOVS, 50*(6), 2607-2613.

Lawler, E. (1986). *High-Involvement Management*. New Jersey: Jossey-Bass.

Linacre, J. M. (2005). *WINSTEPS Rasch measurement* [Computer software]. Chicago: Winsteps.com.

Linacre, J. M. (2009). WINSTEPS Rasch measurement [Computer software]. Chicago: Winsteps.com.

Linley, P. A., & Harrington, S. (2006). Playing to your strengths. *The Psychologist, 19*(2), 86-89.

Linley, P. A., Joseph, S., Harrington, S., & Wood, A. M. (2006). Positive psychology: Past, present, and (possible) future. *Journal of Positive Psychology*, *1*, 3-16.

Lopez, S. J. (Ed.). (2008). *Positive psychology: Exploring the best in people. Volume 1 Discovering human Strengths*. London: Praeger Publishers.

Lopez, S., Hodges, T., & Harter, J. (2005). *The Clifton Strengths Finder technical report: Development and validation* [Electronic Version]. Retrieved April 28, 2011, from http://www.strengths.org/docs/CSFTechnicalReport.pdf.

Luthans, F., & Church, A. H. (2002). Positive organizational behavior: Developing and managing psychological strengths. *Academy of Management Executive*, *16*(1), 56-75.

MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance.

Mayo, A. (2001). *The human value of the enterprise: valuing people as assets: Monitoring, measuring, managing.* Business & Economics: Nicholas Brealey Publishing.

Meads, D. M., & Bentall, R. P. (2008). Rasch analysis and item reduction of the hypomanic personality scale. *Personality and Individual Differences, 44*, 1772-1783.

Merrell, C., & Tymms, P. (2005). Rasch analysis of inattentive, hyperactive and impulsive behaviour in young children and the link with academic achievement. *Journal of Applied Measurement, 6*(1), 1-18.

Meyer, M. (2007). *Managing Human Resource Development: An outcome-based approach.* (3rd ed.). Durban: LexisNexis.

Meyers, M. C. (2010). *Strengths-based development and its influence on positive emotions, employee innovativeness and organizational citizenship behaviour* (Master's thesis), Tilburg University, Tilburg, Netherlands.

Moerdyk, A. P. (2009). The Principles and Practice of Psychological Assessment. Pretoria: Van Schaik

Pallant, J. F., & Tennant, A. (2007). An introduction to the Rasch measurement model: An example using the hospital anxiety and depression scale (HADS). *British Journal of Clinical Psychology, 46*(1), 1-18.

Peterson, C. (2006). *A Primer in Positive Psychology*. New York: Oxford University Press, Inc.

Pfeffer, J. (1998). Seven practices of successful organisations. *California Management Review, 40*(2), 96-124.

Prieto, L., Alonso, J., & Lamarca, R. (2003). Classical test theory versus Rasch analysis for quality of life questionnaire reduction. *Health and Quality of Life Outcomes, 1*(1), 27.

Pritchett, P. (2008). *Deep strengths: Getting to the heart of high performance*. New York: McGraw-Hill.

Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests*. Chicago: University of Chicago Press.

Salzberger, T., & Sinkovics, R. (2006). Reconsidering the problem of data equivalence in international marketing research − Contrasting approaches based on CFA and the Rasch model for measurement. *International Marketing Review, 23*(4), 390-417.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5-14.

Shaughnessy, J. J., & Zechmeister, E. B. (1997). *Research methods in psychology* (4th ed.). New York: McGraw-Hill.

Snyder, C. R., & Lopez, S. J. (Eds.). (2005). *Handbook of positive psychology*. New York: Oxford University Press.

Snyder, C. R., & Lopez, S. J. (Eds.). (2009). *Oxford Handbook of Positive Psychology*. New York: Oxford University Press, Inc.

Struwig, F. W., & Stead, G. B. (2001). *Planning, designing and reporting research*. South Africa: Pearson Education South Africa.

Taylor, N. (2008). *Construct, item, and response bias across cultures in personality measures*. Doctoral dissertation. SA: University of Johannesburg.

Tesio, L. (2003). Measuring behaviours and perceptions: Rasch analysis as a tool for rehabilitation research. *Journal of Rehabilitation Medicine, 35*(3), 105-115.

White, R. P. (2009). Strengths-based development in perspective. In R. B. Kaiser (Ed.), *The Perils of Accentuating the Positive*. Hogan Press.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the Job Demands-Resources Model. *International Journal of Stress Management, 14*(2), 121-141.

Zelenski, J. M., Murphy, S. A., & Jenkins, D. A. (2008). The Happy-Productive Worker Thesis revisited. *Journal of Happiness Studies, 9*, 521-537.

CHAPTER 2

RESEARCH ARTICLE 1

AN ITEM EVALUATION OF A NEWLY- DEVELOPED STRENGTH-BASED APPROACH SCALE IN A SOUTH AFRICAN WORKING POPULATION

ABSTRACT

Orientation: The strength-based approach (SBA) is a new approach within positive psychology. However, no scale specifically applicable to the South African context is available to measure employees' perceptions of how organisations utilise their employees' strengths and talents within the workplace.

Research purpose: To evaluate the reliability and validity of the items in a newly developed SBA scale within a South African population using Rasch analysis, and, specifically, to assess the functioning of the items within this scale.

Motivation for the study: A validated scale for the SBA could enhance knowledge on the positive effects of an SBA on organisational outcomes such as engagement, productivity, organisational commitment, etc.

Research design, approach, and method: A cross-sectional quantitative research design was used whereby online and hard copy versions of the questionnaire were distributed to participants. A sample of 699 participants was collected from the Gauteng and North-West provinces. Rasch analysis was used to determine the reliability and validity of the items.

Main findings: Acceptable item reliability was found. Both the item and person separation indices were acceptable. Mean infit and outfit indices for both person and item were acceptable. The seven-point frequency-based Likert scale worked satisfactorily overall, although categories 0, 1, and 2 were under-utilised. Finally, the infit and outfit statistics for all eight items functioned satisfactory, except for one item.

Contribution/Value-add: This study contributes to the development of measures validated for the South African context, and forms a platform from which better and more accurate future research into strengths use can be conducted.

Keywords: Strengths-based approach, item evaluation, reliability, validity, Rasch analysis, positive psychology paradigm, South African working population

INTRODUCTION

Organisations, employers, and managers alike are becoming increasingly aware of the enormous task underlying the need to unlock the potential of the 21st century employee. Organisations are continuously looking for new ways to turn good employees into great employees (Collins, 2001). However, for this to become a reality, organisations need to create conducive working environments within which employees are empowered and encouraged to stretch the lengths of their imagination, talents, and skills. To this end, internationally, research points to the use of a strengths-based approach (SBA) to work and work environments in which the main focus is on employees' strengths and what they do well (Buckingham & Clifton, 2001; Clifton & Harter, 2003; Compton, 2005; Govindji & Linley, 2007; Linley & Harrington, 2006; Pritchett, 2008). The SBA is a relatively new approach compared to the deficiency-based approach (DBA), which has been the longstanding framework from which many managers have chosen to manage their employees (Meyer, 2007; Seligman & Csikszentmihalyi, 2000). Managers following a DBA also want to bring the best out of their employees. However, they focus on those few areas where the employee struggles and try fixing employees' weaknesses (Buckingham & Coffman, 1999).

A focus on organisational SBA will benefit both the employee and the organisation, in that employees who use their strengths are often happier and more fulfilled, and their learning is quicker and sustained (Govindji & Linley, 2007; Zelenski, Murphy & Jenkins, 2008). These employees experience increased positive emotions and are better able to achieve the goals they set (Linley & Harrington, 2006). Organisations will reap the benefit of loyal, productive, and satisfied employees, which, in turn, will lead to satisfied customers and positively impact the bottom line (Henry & Henry, 2007). McNabb and Sepic (1995) argue that employees' perceptions of the organisation will govern their behaviour; therefore, implementing an organisational SBA will assist organisations in creating positive employee perceptions that motivate positive employee behaviour and performance.

Literature on strengths and an SBA is more theoretical than empirical in nature. Examples of this include a study by Dahlsgaard, Peterson, and Seligman (2005) that aimed to create a consensual classification of human strengths and examined the writings of philosophical and religious traditions in various countries. This theoretical study suggested that human strengths and virtues could be classified from a non-arbitrary foundation. Linley, Nielsen,

Gillett, and Biswas-Diener (2010) addressed the issue of the absence of a clear theory that describes how using strengths might contribute to greater well-being or goal progress. An increasing number of researchers have been calling for research and assessment instruments to evaluate organisations and allow for more empirical evidence to be collected on an SBA (Gable & Haidt, 2005; Linely & Page, 2007; Parks-Sheiner, 2009).

There is, however, a lack of instruments to measure an organisational SBA. According to Wood, Linley, Maltby, Kashdan, and Hurling (2011), the instruments currently available to measure an SBA internationally focus mainly on subjective, personal, and psychological strengths and well-being. These instruments mainly assist individuals to identify their strengths, but do not provide information on the employees' perception of the organisation using their strengths. This lack of measurement instruments means that it is difficult to establish the effect of an SBA on important organisational outcomes (work engagement, productivity, organisational commitment, etc.).

In order to address this gap, a new SBA scale was developed (Els, Mostert, Van Woerkom, Rothmann & Bakker, in progress) that measures the extent to which employees perceive their organisations as using their strengths, specifically within the South African context. However, no information on the validity and reliability of this scale is available. Furthermore, the appropriateness of this instrument for the South African context must be established, including whether or not all the items within the scale measure the latent construct. For this goal, Rasch analysis is a useful tool for evaluation in that it provides clues as to why particular tests or measuring instruments are not functioning as well as they should. Furthermore, in the construction of new tests, Rasch analysis provides guidance regarding which items to include and which to omit, such that only the best items are selected. Item (question) analysis and evaluation is therefore essential to the development of any scale. Evaluating the new scale will enable empirical research on an SBA within South Africa to be conducted credibly and with higher levels of validity and reliability.

Based on the abovementioned literature, the objectives of this study were to determine whether the items in the SBA scale are unidimensional and to determine the internal validity and reliability of the new scale using Rasch analysis.

LITERATURE REVIEW

A background to strengths and an SBA

Strengths and an SBA both emerged from positive psychology, which emphasises the flourishing and optimal functioning of individuals, groups, and communities (Gable & Haidt, 2005). However, these two concepts have significant differences. Within positive psychology, a strength is defined as "the psychological processes or mechanisms that define someone's virtues" (Peterson & Seligman, 2004, p.13). Strengths are organised into six virtues: wisdom and knowledge, courage, love, justice, temperance, and transcendence (Duckworth, Steen & Seligman, 2005). Within an SBA, a strength or a talent can be seen as "any naturally reoccurring pattern of thought, feeling or behaviour that can be productively applied" (Buckingham & Clifton, 2001).

Strengths and virtues are understood as the positive psychological ingredients that lead to the good life (Seligman, 2002). According to Seligman (2002), the good life is achieved through discovering our unique virtues and strengths, and utilising them creatively to enhance our lives. On the whole, according to Brun and Rapp (2001), the strengths perspective holds that individuals have the abilities and inner resources to cope effectively with the challenges in life. Furthermore, when assisted in discovering their abilities, these individuals are assumed to be able to make significant strides in facing their challenges, and when a helping agent (or manager) focuses exclusively on pathology and deficits, they hinder that individual's ability to overcome their challenges (Brun & Rapp, 2001; Holmes & Saleeby, 1993).

An SBA, by definition, is a focus on the positive – to value individuals, to advance and support the workforce, and to give individuals the opportunity to do that at which they are good (Linely & Harrington, 2006; Meyers, 2010). An SBA changes previous assumptions that individuals' greatest potential for growth is located in their areas of deficit or weakness (Buckingham & Clifton, 2001; Rath, 2007).

Measurement of strengths and an SBA

Internationally, instruments have been developed to assist individuals in identifying their strengths. The Clifton StrengthsFinder and the more recent Clifton StrengthsFinder 2.0 (Rath, 2007) assist individuals in discovering their most prominent strengths by measuring the predictability of patterns of behaviour from the results of a forced-choice inventory. The

Values in Action (VIA) inventory works in a similar manner to the Clifton StrengthsFinder. However, the more recent Values in Action-Inventory of Strengths (VIA-IS) (Peterson, Park & Seligman, in press) is slightly different; it is a self-report questionnaire that asks individuals to report the degree to which statements reflecting each of the character strengths listed in the VIA apply to themselves. It uses 5-point Likert-style items to measure the degree to which respondents endorse items reflecting the 24 strengths of character within the VIA. Realise2 (Linley, 2008), also referred to as the Personality Strengths Project assessment tool, measures both strengths and weaknesses. This extended approach introduces greater depth to the VIA by way of a clearer theoretical underpinning and recognition for the role of context and weaknesses in strengths deployment.

Other measures include the Transferable Skills Card Sort and The Skill Cluster inventory, both of which lead to the identification of non-clinical strengths (Henry & Henry, 2004). The Transferable Skills Card Sort covers transferable skills and work values. Within the card sorts, transferable skills are rated under the headings of Very Competent, Competent, Adequate for Task, and Skills Cards are classified under data, ideas, people, and things. Work Values are identified by levels of importance and considered with respect to paid and unpaid work. This tool can be used to help individuals and groups identify and apply aspects of skills and values to work choices.

The Strengths Knowledge Scale (Govindji & Linley, 2007) is an instrument that measures people's awareness and recognition of their strengths, while the Strengths Use Scale (Govindji & Linley, 2007) assesses strengths use or how much people use their strengths in a variety of settings. The Gallup Workplace Audit (Harter, Schmidt & Hayes, 2002) measures employee engagement, and assumes both cognitive and emotional antecedents to broader affective and performance outcomes. The Strengthspotting Scale was developed by Linley (2010) and consists of 20 items, with the sub-scales designed to assess the strength-spotting domains of ability, emotions, frequency, application, and motivation.

The Dutch strengths-based development scale developed by Van Woerkom and her colleagues (see Meyers, 2010) was designed to measure the four phases of strengths-based development, namely the identification, development, use, and appreciation of an employee's strengths within the working environment. It includes items from the Strengths Knowledge Scale (Govindji & Linley, 2007), the Strengths Use Scale (Govindji & Linley, 2007), and the

Gallup Workplace Audit (Harter, Schmidt & Hayes, 2002). Five items measure the identification of talents (e.g., "In this organisation I am made aware of my competences"). Seven items measure the development of strengths (e.g., "In this organisation I am stimulated to further develop my competences"). In addition, seven items measure the use of strengths (e.g., "In this organisation I get the opportunity to do what I am good at"). Finally, six items measure the appreciation of strengths (e.g., "In this organisation I receive compliments for performing well").

The development of a new scale measuring an SBA

The development of the new SBA scale for the South African working population was based on the work done by Van Woerkom and her colleagues (Els et al., in progress). Drawing on literature, Els et al. conceptualised an SBA as an organisational resource and define it as employees' perceptions of the extent to which the formal and informal policies, practices, and procedures in their organisation focus on the use of their strengths. This definition is rooted in three theories, namely the Job Demands-Resources (JD-R) model (Demerouti & Bakker, 2011), the Broaden-and-Build theory of positive emotions (Frederickson, 2004), and the Happy-Productive Worker Thesis (Cropanzano & Wright, 2001).

Theoretical frameworks

The JD-R model specifies how demands and resources interact to predict organisational outcomes and the experience of burnout and/or work engagement (Demerouti & Bakker, 2011). Job demands are defined as those physical, social, or organisational aspects of the job that require sustained physical and/or psychological effort. Job resources are those physical, social, or organisational aspects of the job that (a) are functional in achieving work-related goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate learning, personal growth, and development (Demerouti & Bakker, 2011; Shaufeli & Bakker, 2004; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007).

According to Demerouti and Bakker (2011), there are two underlying psychological processes that play a role in the development of job-related strain and motivation. The first is a process of health impairment where demanding or chronically demanding jobs physically and mentally exhaust the employee, causing the employee to rely on negative coping strategies, leading to health problems. The second is a motivational process where

employees have the job resources that they need to do their job to their fullest potential. This leads to high work engagement, low levels of cynicism, and excellence in their performance.

Job resources may play either an intrinsic motivational role because they foster employees' growth, learning, and development, or they may play an extrinsic motivational role because they are instrumental in achieving work goals (Bakker & Demerouti, 2007). Thus, environments that offer sufficient (job) resources (i.e. allowing an employee to use their strengths) mitigate the depletion of employee energy resources and foster the willingness of employees to dedicate their efforts and abilities towards the success of their task/jobs (Demerouti & Bakker, 2011). Job resources exist on three levels: the organisational level (e.g., salary or wages, career opportunities, job security), the interpersonal level (e.g., supervisor and co-worker support, team climate, role clarity), and the task level (e.g., skill variety, task identity, task significance, autonomy, and performance feedback). An SBA is conceptualised as a job resource on an organisational level.

The Broaden-and-Build theory of positive emotions introduced by Fredrickson (1998) states that "positive emotions serve to broaden an individual's momentary thought-action repertoire, which, in turn, has the effect of building that individual's physical, intellectual, and social resources" (Fredrickson, 1998, p. 300). Clifton and Harter (2003) argue that the enduring nature of positive emotions released within the strengths approach serves to broaden-and-build an individual's thoughts and actions and produces enduring resources for the future. Therefore, when individuals use their strengths or do what they are good at, they experience positive emotions, which broaden and build their motivation to increase and improve on these strengths. Meyers (2010) examined the beneficial effects of strengths-based development (SBD) and positive emotions on employee innovativeness and organisational citizenship behaviour (OCB). The study tested Fredrickson's broaden-and-build theory of positive emotions in an organisational context, and was the first study to combine emotions and the organisation and link emotion theory to the strengths approach. The study found that SBD significantly enhances workers' mood states. In addition, a positive effect of SBD on employee innovativeness and OCB was detected, which was mediated by positive emotions.

The Happy-Productive Worker Thesis has been studied by many researchers (Staw & Barsade, 1993; Weiss & Cropanzano, 1996; Wright & Cropanzano, 2004). The common

theme throughout these studies is the argument that employees who are happier or more satisfied with their job will performer better (Zelenski et al., 2008). Wright and Cropanzano (2004) produced research supporting a positive link between psychological well-being and performance, with the suggestion that happiness should be conceptualised as psychological well-being. Therefore, if an organisation ensures that employees' strengths are aligned with their jobs, it will allow for the promotion of psychological well-being (or happiness) within the individuals, which, in turn, will motivate those individuals towards the pursuit of productivity and individual excellence within their jobs and within the organisation. A study by Stienstra (2010) utilised the Happy-Productive Worker Thesis to study the relationship between subjective well-being and task performance, and found support for a direct positive relation between SBD and subjective well-being when happiness (within the Happy-Productive Worker Thesis) is measured as subjective well-being, and productivity is measured as task performance.

Development of the new scale

The development of the new SBA scale (Els et al., in progress) followed the procedure outlined by DeVellis (2003), including conceptualisation of the construct, item generation and evaluation, item development, and item evaluation and refinement. During the construct conceptualisation phase, SBA was conceptualised as an organisational resource and defined as employees' perception of the extent to which the formal and informal policies, practices, and procedures in their organisation focus on the use of their strengths.

An initial pool of items was used for the item generation and evaluation phase. These items were mainly from the Dutch instrument developed by Van Woerkom and her colleagues, although new items were also developed. Once the items were checked for appropriateness within the South African context, the item evaluation process followed, and was led by two Industrial Psychologists in the area of work-related well-being. They oversaw the specific classification of the items into certain categories. The categories were: items where some words may be used to construct new items, items not applicable at all, items where some part of the item may be used, items mostly correct but which may require some changes in terms of the wording, and items that are 100% correct or applicable to the new scale. During this process, inappropriate items were removed from the pool, and good items were put through rigorous discussions prior to their inclusion. It was imperative that only the best items were selected for the item development phase.

The item generation phase resulted in a shortlist of what was considered the best items from the initial pool of items. These were to be used in the item development phase. These items were re-evaluated in order to obtain greater alignment of the items with the proposed definition of an SBA and the seven-point frequency-based response format scale: 0 (Never), 1 (Rarely), 2 (Occasionally), 3 (Sometimes), 4 (Frequently), 5 (Usually), and 6 (Almost always).

In the item evaluation and refinement phase, items were presented to a panel of five Master's students in Industrial Psychology and two Industrial Psychologists. Equipped with the definition of an SBA, the panel categorised the items into five groups. From these categories, the most appropriate items were selected and edited according to the recommendations of the panel. The final SBA scale consisted of eight newly developed items, making use of a seven-point frequency-based response format. The scale measures the employees' perceptions of the use of their strengths in their organisations and will take approximately eight minutes to complete. An example of one of the items is "This organisation makes the most of my talents"

RESEARCH DESIGN

Research approach

A cross-sectional design with a survey data collection technique consisting of closed-ended questions was used in approaching this research. A cross-sectional design is when a single person, group, or event is studied only once (De Vos, Strydom, Fouche & Delport, 2005). Surveys are particularly well suited to the study of mass public opinion too large to be observed directly. According to Babbie and Mouton (2001) the closed-ended nature of the questions within the survey provided a greater uniformity of responses, along with it being easier to process.

Research method

Research participants

A convenience sample ($N = 699$) of participants was gathered. Participants needed to currently hold employment in an organisation within South Africa. Participants were

selected from the general working population in various sectors with various educational backgrounds to ensure that the results found would not relate only to a specific sample (or industry). The demographic characteristics of the participants are provided in Table 1.

Table 1

Demographic Characteristics of the Participants (N = 699)

Item	Category	Frequency	Percentage (%)
Gender	Male	288	41,2
	Female	401	57,4
Home Language	English	165	23,6
	Afrikaans	252	36,1
	Setswana	59	8,4
	isiXhosa	45	6,4
	Xitsonga	7	1,0
	isiZulu	36	5,2
	Sesotho	88	12,6
	isiNdebele	2	0,3
	Tshivenda	5	0,7
	siSwati	3	0,4
	Sepedi	20	2,9
	Other	11	1,6
Race	Asian	21	3,0
	Black	275	39,3
	Coloured	85	12,2
	White	299	42,8
	Other	9	1,3
Education	Grade 10(Standard 8)	44	6,3
	Grade 11(Standard 9)	27	3,9
	Grade 12 (Matric)	287	41,1
	Technical College Diploma	86	12,3
	Technicon Diploma	69	9,9
	University degree (e.g., BA, BCom, BSC)	87	12,4
	Postgraduate degree (Honours, Masters, or Doctorate)	88	12,6
Household Situation	Single, without children living at home	145	20,7
	Single, with children living at home	103	14,7
	Married/living with a partner, without children living at home	113	16,2
	Married/living with partner, with children living at home	254	36,3
	Living with parents	50	7,2
	Other (please specify)	9	1,3

Table 1 Continued

Demographic Characteristics of the Participants (N = 699)

Item	Category	Frequency	Percentage (%)
Industry	Automobiles	6	0,9
	Chemicals	4	0,6
	Engineering	52	7,4
	Education	37	5,3
	Finance	21	3,0
	Media	3	0,4
	Mining & Metals	161	23,0
	Nursing	37	5,3
	Oil and Gas	2	0,3
	Police	5	0,7
	Retail	27	3,9
	Sport	1	0,1
	Telecommunications	7	1,0
	Tourism, Leisure & Recreation	3	0,4
	Transportation	8	1,1
	Other	148	21,2

The sample consisted of 41,2% males and 57,4% females. The sample according to race consisted of mainly White participants (42,8%), but also included Black (39,3%), Coloured (12,2%), and Asian (3,0%) participants. Most of the participants were married/living with a partner, with children living at home (36,6%) or single, without children living at home (20,7%). The majority of the participants were Afrikaans-speaking (36,1%), although the following official language groups were also represented: English (23,6%), Sesotho (12,6%), Setswana (8,4%), isiXhosa (6,4%), isiZulu (5,2%), Sepedi (2,9%), Xitsonga (1,0%), Tshivenda (0,7%), siSwati (0,4%), and isiNdebele (0,3%). The majority of respondents had either a Grade 12 (Matric) qualification (41,1%), a postgraduate degree (Honours, Master's or Doctorate) (12,6%), a university degree (e.g., BA, BCom, or BSC) (12,4%), or a technical college diploma (12,3%). Most of the respondents included in the study worked in the Mining and Metals industry (23,0%).

Research procedure

The management of each organisation within the various occupational groups was approached in order to obtain permission to conduct the research and to use the data obtained anonymously for research purposes. The questionnaire was distributed as both a hard and an electronic copy. A letter of consent was issued in which the purpose of the study was explained. Participation in this study was completely voluntary. The questionnaire took approximately 8 minutes to complete, and field workers went every two to three days to collect any completed questionnaires and check the progress of questionnaire completion. A deadline was set by which time all the questionnaires needed to be collected. Once the questionnaires had been collected, the data analysis process began. 1385 questionnaires were distributed and 711 were received. Once incomplete or unusable questionnaires had been removed, 699 questionnaires remained and were analysed. Therefore the response rate was 50.46%.

Statistical Analysis

The items within the SBA scale were statistically analysed using Rasch analysis and the WINSTEPS program (Linacre, 2005). Rasch analysis is a statistical model that can be used in the development and evaluation of new and existing assessment tools (Lim, Rodger & Brown, 2009). The Rasch model makes the following assumptions: Firstly, that the people to be measured can each be uniquely ordered according to their abilities. This ordering permits a parameterisation of people and tasks that fits the simple model. Secondly, local independence is assumed, which is the probability of a person responding correctly to a particular item (i.e. not depending upon the responses to the previous items). Thirdly, equality of discrimination is assumed. This means that the signal ratio represented by the maximum slope of the characteristic curve of each item is assumed to be the same for all the items. If they are different, it means that the ordering of items in terms of difficulty for persons of lower ability would not be the same as the ordering for persons of higher ability (Choppin, 1983). Fourthly, unidimensionality is assumed, meaning that all the items should measure the same latent trait (i.e. an SBA). Furthermore, Rasch assumes, albeit somewhat unrealistically, that no random guessing behaviour occurs. The model requires that for any test item, the probability of a successful response to an item tends to zero as the ability of the person attempting it is reduced. The final assumption made by the Rasch model is that, as the ability of the person being considered increases, the probability of a successful response to any given item approaches 1,00 (Choppin, 1983).

Unlike classical test theory (CTT) methods, which assume that the precision with which a test measures is constant across the underlying trait continuum, Rasch models acknowledge that tests or scales operate differently for individuals with different trait levels (Wilson, 2005). The test information curve may be used to identify the areas of the latent trait in which the test or scale operates most efficiently and in which areas it operates less efficiently. The trait estimates of individuals located at a point where the test or scale provides much information are measured with more precision than trait estimates of an individual located at a point where the test or scale provides little information.

The Rasch model uses a set of carefully selected survey items to produce an interval scale that determines item difficulties and person measures. The items are arranged on the scale according to how likely they are to be endorsed (item difficulty). The scale is then used to show person measure, a quantitative measure of a person's attitude on a unidimensional scale. In other words, the items are used to define the measure's scale, and people are then placed on this scale based on their responses to the items in the measure (http://ccsr.uchicago.edu/downloads/9585ccsr_rasch_analysis_primer.pdf).

The unit of measurement in Rasch analysis is logits, which is the natural logarithm of the odds of success in choosing a response. Tasks of average difficulty are assigned 0 logits. Tasks with above-average difficulty receive a positive logit score, and tasks with below-average difficulty receive a negative logit score. Rasch analysis gives a range of details for checking whether or not adding the scores is justified in the data (www.rasch-analysis.com.au). Consequently, the sample size of 699 participants in the present study was considered large enough to give good precision, regardless of the targeting of the sample.

Fit statistics are used to identify items that perform idiosyncratically, i.e. those items that are answered in erratic or inconsistent ways for whatever reason. Rasch analysis provides indicators of how well each item fits within the underlying construct. Fit indices therefore allow the investigator to determine whether the assumptions underlying unidimensionality hold up empirically (Bond & Fox, 2007). According to Linacre (2005), fit statistics identify problematic items in terms of outfit (where the item difficulty and person ability differ drastically and are more likely to indicate lucky guesses and careless mistakes) and infit (to

identify smaller differences in the comprehension of the items) statistics. Reasonable infit and outfit indices range from 0,60 to 1,40 (Bond & Fox, 2007).

The following statistics were analysed: Fit statistics (infit and outfit) to determine whether each item contributes to the measurement of only one construct (i.e. an SBA); reliability (the Rasch model provides two reliability estimates, namely person reliability and item reliability indices), and, finally, the separation index was considered (a measure of spread of persons or items on the measured variable, i.e. the SBA). Person reliability indicates the replicability of "person ordering" if the same sample of persons were given another parallel set of items measuring the same construct and item reliability (Bond & Fox, 2007), whilst item reliability indicates the replicability of item placement along the pathway if the same items were given to another sample of the same size that behaved the same way (Bond & Fox, 2007). Acceptable person and item reliabilities are values greater than or equal to 0,80. Separation indices measure an estimate of the spread of persons or items on the measured variables. Separation indices show that if the analysis were repeated with another sample of participants, the difficulty order of the items would remain the same. This index also shows whether items were well separated in terms of their difficulty parameters (Taylor, 2008). A reasonable separation index value for persons, items, or both is 2,00 or more (Fox & Jones, 1998).

RESULTS

Table 2 indicates the average measure and standard deviation per person and item, the infit and outfit statistics in terms of the person and item, the internal consistency of the measurement in terms of item separation index and reliability, and the person separation index and reliability.

Table 2

Person and Item Summary Statistics

Dimension	Average Measure (*SD*)	Infit (*SD*)	Outfit (*SD*)	Separation	Reliability
Person	0,88 (1,66)	1,01 (1,13)	1,02 (1,15)	2,97	0,90
Item	0,00 (0,23)	0,98 (0,40)	1,02 (0,50)	4,72	0,96

Table 2 shows acceptable item reliability for the dimension, demonstrating that these items differentiate well among each other on the measured variable (values are equal to or greater than 0,80). Both the item and person separation indices were acceptable as they adhered to the guideline of at least 2,00 (Bond & Fox, 2007; Fox & Jones, 1998). .The mean infit and outfit for both person and item were both acceptable as they ranged between 0,60 and 1,40 (Bond & Fox, 2007). Therefore, the responses did not underfit or overfit.

Table 3 shows the functionality of the rating scale for the strength-use dimension.

Table 3

Rating Scale Categories

Category Label	Observed Count	Percentage (%)	*Observed Average
0 (Never)	232	4	-2,03
1 (Rarely)	337	6	-1,27
2 (Occasionally)	433	8	-0,63
3 (Sometimes)	1107	20	0,05
4 (Frequently)	1056	19	0,91
5 (Usually)	1199	22	1,89
6 (Almost always)	1190	21	2,94

[*] Observed average is the mean of measures in a category, not a parameter estimate

As can be seen in Table 3, overall, the seven-point frequency-based Likert scale worked satisfactorily. However, some categories were under-utilised. This was apparent for the first three categories (0, 1, and 2) because these categories had the lowest percentages, meaning that they were not as frequently endorsed by the participants when compared to the other categories.

Table 4 indicates the item fit statistics for the SBA dimension in terms of measurement intensity of all the items, as well as the infit and outfit mean squares for each item.

Table 4

Item Fit Statistics

Item	Measure (θ)	Infit Mean Square	Outfit Mean Square
SBA1	-0,21	1,99	2,29
SBA2	-0,39	1,15	1,16
SBA3	-0,16	0,84	0,81
SBA4	-0,03	0,93	0,89
SBA5	0,05	0,66	0,69
SBA6	0,31	0,73	0,72
SBA7	0,22	0,76	0,78
SBA8	0,20	0,82	0,81

As can be seen in Table 4, the results of the SBA items indicate that SBA6 has the highest measurement intensity ($\theta = 0,31$) and SBA2 has the lowest measurement intensity ($\theta = -0,39$). The infit and outfit statistics for all eight items are satisfactory, except for SBA1 (infit = 1,99 and outfit = 2,29), which is outside the cut-off points of 0,60 and 1,40. This suggests that the information for SBA1 can be regarded as not showing homogeneity (i.e. this item does not provide information consistent with the information provided by the other SBA items).

DISCUSSION

Research within the SBA field is relatively new internationally and within South Africa, with few studies empirically linking organisational outcomes to an SBA. No instrument currently exists that measures employees' perceptions of how organisations utilise their strengths and talents within the South African workplace. In order to address this gap, a new questionnaire was developed. The objective of this study was to determine whether the items in the new

SBA scale were unidimensional and to determine the internal validity and reliability of the SBA scale using Rasch analysis.

Rasch analysis provides results on the internal consistency of the measurement in terms of item separation index and reliability and the person separation index and reliability. The results show that no problems were found with item separation and item reliability indices for the SBA dimension, demonstrating that these items differentiate well among each other on the measured variable. This means that the items are likely to be stable if utilised in another sample or research setting. Furthermore, the person separation index indicates whether the placement of people on other items measuring the same construct is the same (Fox & Jones, 1998). Overall, person separation and person reliability indices were satisfactory, implying that, in general, items were understood by the participants.

Rasch analysis also enabled the investigation of the functioning of the seven-point frequency-based Likert scale. Results show that, overall, the scale worked satisfactorily; however, some categories were under-utilised by the participants. The average mean was 0,88. This is a skewed distribution and indicates that the participants of the study were more inclined to answer higher on the scale. The first three categories (0, 1, and 2) showed the lowest percentages in terms of use, meaning that they were not as frequently endorsed by the participants when compared to the other categories. This could imply that either the participants misunderstood the items and were more reluctant to answer to the relevant intensity or that the seven-point scale was viewed as too complex.

Finally, Rasch analysis is able to identify the most appropriately functioning items within the SBA scale. This is indicated by the degree of item unidimensionality, measured by infit and outfit indices. The results revealed that of the eight items analysed, seven showed acceptable functioning. Item SBA1 ("This organisation uses my strengths") showed unacceptable infit and outfit statistics (infit = 1,99 and outfit = 2,29). This finding implies that the item lacks unidimensionality and therefore does not fit or measure the underlying construct as well as the other items.

In conclusion, this study contributes to the field of Industrial Psychology by validating a new instrument that measures employees' perception of their organisations using their strengths. Evidence for internal consistency in terms of item separation index and reliability, person

separation index and reliability, unidimensionality, and the functioning of the rating scale were reported.

Although the findings of this study are a valuable contribution to the evaluation of the SBA scale, there are limitations to the study. Firstly, Rasch analysis focuses mainly on the evaluation of items culminating in the determination of unidimensionality, and although it is only once unidmensionality is determined that further studies can be conducted, this study does not look at the relationship of the strengths use construct with other constructs, and therefore lacks external validity. Also, the instrument is currently only available in English, making it difficult to test the cultural sensitivity of the items. Item bias and factorial invariance of the scale should be tested in future studies.

Despite the limitations, recommendations for organisations and future studies on the SBA scale can be made. Organisations may benefit from understanding employees' perceptions of the extent to which their organisation uses their strengths. Encouraging employees to use their strengths within their jobs and do what they are good at, by allowing them to flexibly apply as many different resources and skills as necessary in the pursuit of their goals or in solving problems will create dedicated, happier, and more innovative employees (Aspinwall & Staudinger, 2003). These employees, through the valuing their work, will add to the overall productivity of the organisation (Meyers, 2010). The SBA scale has the potential to allow organisations to measure the relationship between employees' perception of using their strengths within their organisations and various organisational outcomes. In addition, the SBA scale can be used by other researchers in South Africa in order to not only increase, but streamline and improve the quality, validity, and reliability of research that focuses on an SBA.

The primary focus of this study was to evaluate the items of the SBA scale in order to determine their functioning. Investigations into other psychometric properties were not conducted. Properties such as factorial validity, invariance, and external validity (i.e. investigation of possible relationships with theoretically relevant external variables) should be conducted. Analysing the factorial validity and reliability of the SBA scale is necessary to ensure that the SBA construct is a job resource on an organisational level and that it holds an extrinsic motivational role. Research should also consider collapsing the seven-point frequency-based Likert scale to increase the possibility of participants effectively

discriminating between the categories. Finally, the problematic item (SBA1) should be scrutinised in future studies and removed if similar results are obtained in such studies.

REFERENCE

A Primer on Rasch analysis. (n.d.). Retrieved from March 26, 2012, http://ccsr.uchicago.edu/downloads/9585ccsr_rasch_analysis_primer.pdf.

Aspinwall, L.G., & Staudinger, U. M. (2003). A psychology of human strengths: Some central issues of an emerging field. In L. G. Aspinwall & U. M. Staudinger (Eds.), *A psychology of human strengths: Fundamental questions and future directions for a positive psychology* (pp. 9-22). Washington, DC: American Psychological Association.

Babbie, E., & Mouton, J. (2001). *The practise of social research*. Cape Town: Oxford University Press.

Bond, T. G., & Fox, C. M. (2007). *Applying the Rasch model: Fundamental measurement in the human sciences.* (2nd ed.). New Jersey: Lawrence Erlbaum Associates, Publishers.

Brun, C., & Rapp, R. C. (2001). Strengths-based case management: Individuals perspectives on strengths and the case manager relationship. *National Association of Social Workers, 46*(3), 278-288.

Buckingham, M., & Clifton, D. O. (2001). Now, discover your strengths. *Journal of Religious Leadership, 2*(2), 213-215.

Buckingham, M., & Coffman, C. (1999). *First break all the rules: What the world's greatest managers do differently.* The Gallup Organization.

Choppin, B. (1983). *The Rasch model for item analysis*. Centre for the study of evaluation. Graduate School of Education, University of California, California, Los Angeles.

Clifton, D. O., & Harter, J. K. (2003). Strengths investment. In K. S. Cameron, J. E. Dutton & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 111-121). SF: Berrett-Koehler.

Collins, J. (2001). *Why some companies make the leap...and others don't: Good to great*. Random House Business Books.

Compton, W. C. (2005). *An introduction to positive psychology*. Belmont, CA: Thomas Wadsworth.

Cropanzano, R., & Wright, T. A. (2001). When a "happy" worker is really a "productive" worker: A review and further refinement of the happy-productive worker thesis [Abstract]. *Consulting Psychology Journal: Practice and Research, 53*(3), 182-199. Retrieved May 16, 2011, from http://www.psycnet.apa.org/index.cfm?fa=buy.optionToBuy&id=2 001-18751-005.

Dahlsgaard, K., Peterson, C., & Seligman, M. E. P. (2005). Shared virtue: The convergence of valued human strengths across culture and history. *Review of General Psychology, 9*(3), 203-213.

De Vos, A. S., Strydom, H., Fouche, C. B., & Delport, C .S. L. (2005). *Research at Grass roots: For the social sciences and human service professions.* Pretoria: Van Schaik Publishers.

Demerouti, E., & Bakker, A. B. (2011). The Job Demands-Resources model: Challenges for future research. *SA Journal of Industrial Psychology, 37*(2).

DeVellis, R. F. (2003). *Scale development, theory and application*. (2nd ed.). Thousand Oaks, CA: Sage.

Duckworth, A. L., Steen, T. A., & Seligman, M. E. P. (2005). Positive psychology in clinical practice. *Annual Review of Clinical Psychology, 1*, 629-651.

Els, C., Mostert, K., Van Woerkom, M., Rothmann, S. Jnr., & Bakker, A. B. (in process). *Following a strength-based and deficiency-based approach: The development and psychometric properties of a new scale*.

Fox, C. M., & Jones, J. A. (1998). Uses of Rasch modeling in counseling psychology research. *Journal of Counseling Psychology, 45*, 30-45.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*, 300-319.

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Phil. Trans. R. Soc. Lond. B, 359*, 1367-1377. Retrieved May 16, 2011, from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1693418/pdf/15347528.pdf.

Gable, S. L., & Haidt, J. (2005). What (and why) is Positive Psychology? *Review of General Psychology, 9*(2), 103-110.

Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review, 2*(2), 143-153.

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology, 87*, 268-279.

Henry, L. S., & Henry, J. D. (2007). Using a strengths-based approach to building caring work environments. *Business and Leadership, 55*(12).

Holmes, G. E., & Saleebey, D. (1993). Empowerment, the medical model, and the politics of clienthood. *Journal of Progressive Human Services*, 4, 61-68.

Lim, S.M., Rodger, S., & Brown, T. (2009). Using Rasch analysis to establish the construct validity of rehabilitation assessment tools. *International Journal of Therapy and Rehabilitation, 16*(5).

Linacre, J. M. (2005). *WINSTEPS Rasch measurement* [Computer software]. Chicago: Winsteps.com.

Linley, A., & Page, N. (2007). *Positive Psychology Using Strengths at Work*. Centre for Applied Positive Psychology. Coventry: UK.

Linley, P. A. (2008). *Average to A+: Realising strengths in yourself and others.* Coventry, UK: CAPP Press.

Linley, P. A., & Harrington, S. (2006). Playing to your strengths. *The Psychologist, 19*(2), 86-89.

Linley, P. A., Nielsen, K. M., Wood, A. M., Gillett, R., & Biswas-Diener, R. (2010). Using signature strengths in pursuit of goals: Effects on goal progress, need satisfaction, and well-being, and implications for coaching psychologists. *International Coaching Psychology Review, 5*(1), 6-15.

Linley, P. A., Woolston, L., & Biswas-Diener, R. (2009). Strengths coaching with leaders. *International Coaching Psychology Review*, *(4)*1.

McNabb, D. E., & Sepic, F. T. (1995). Culture, climate and total quality management: Measuring readiness for change. *Public Productivity Management, 18*(4), 369-385.

Meyer, M. (2007). *Managing Human Resource Development: An outcome based approach* (3rd ed.). Durban: LexisNexis.

Meyers, M. C. (2010). *Strengths-based development and its influence on positive emotions, employee innovativeness and organizational citizenship behaviour* (Master's thesis). Tilburg University, Netherlands.

Park, P., Peterson, C., & Seligman, M. E. P. (2004). Strengths of character and well-being. *Journal of Social and Clinical Psychology, 23*(5), 603-619.

Parks-Sheiner, A. C. (2009). Applied positive psychology. In S.J. Lopez (Ed.), *The Encyclopedia of Positive Psychology* (pp. 58-62). Boston: Blackwell Publishing.

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification.* Washington, DC: American Psychological Association.

Peterson, C., Park, N., & Seligman, M. E. P. (in press). Assessment of character strengths. In G. P. Koocher, J.C. Norcross & S. S. Hill, III (Eds.), *Psychologist's desk reference* (2 nd ed.). New York: Oxford University Press.

Pritchett, P. (2008). *Deep strengths: Getting to the heart of high performance*. New York: McGraw-Hill.

Rasch analysis. (n.d.) Retrieved March, 26, 2012, from http:// www.rasch-analysis.com.

Rath, T . (2007). *Strengths Finder 2.0*. New York: Gallup Press.

Seligman, M. E. P. (2002). *Authentic Happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York, NY: Free Press.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5-14.

Shaufeli, W. B., Bakker, A. B. (2004). Job demands, job resources and their relationship with burnout and engagement: a multi sample study. *Journal of Organizational Behavior*, 25(3), pp.293-315.

Staw, B. M., & Barsade, S. G. (1993). Affect and managerial performance: A test of the Sadder-but-Wiser vs. Happier-and-Smarter Hypotheses. *Administrative Science Quarterly*, 38, 304-331.

Stienstra, M. (2010). *Strength based development as organizational approach: Will it lead to enhanced task performance and organizational citizenship behavior, and is this relation mediated by subjective well-being?* (Master's thesis). University of Tilburg, Tilburg, Netherlands.

Taylor, N. (2008). *Construct, item, and response bias across cultures in personality measures* (Doctoral dissertation). University of Johannesburg, Johannesburg, South Africa.

Weiss, H. M., & Cropanzano, R. (1996). An affective events approach to job satisfaction. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 18, pp. 1-74). Greenwich, CT: JAI Press.

Wilson, M. (2005). *Constructing measures: An item response modeling approach*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Wood, A. M., Linley, P. A., Maltby, J., Kashdan, T. B., & Hurling, R. (2011). Using personal and psychological strengths leads to increases in well-being over time: A longitudinal study and the development of the strengths use questionnaire. *Personality and Individual Differences, 50*, 15-19.

Wright, T. A., & Cropanzano, R. (2004). The role of psychological well-being in job performance: A fresh look at an age-old quest. *Organizational Dynamics, 33,* 338-351.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the Job Demands-Resources Model. *International Journal of Stress Management, 14*(2), 121-141.

Zelenski, J. M., Murphy, S. A., & Jenkins, D. A. (2008). The Happy-Productive Worker Thesis revisited. *Journal of Happiness Studies, 9*, 521-537.

CHAPTER 3

CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

The purpose of this chapter is to discuss the conclusions drawn from the study objectives and the results. The limitations of the study are discussed, and recommendations for future research are presented.

3.1 CONCLUSIONS

The general objective of this study was to evaluate the reliability and validity of a South African strength-based approach (SBA) scale using Rasch analysis. The specific objectives of this study were to 1) conceptualise an SBA according to literature, 2) determine whether the items in the SBA scale are unidimensional, 3) determine the internal validity and reliability of the new SBA scale, and 4) make recommendations for future research.

The first objective of this study was to conceptualise an SBA according to literature. An SBA is defined as "employees' perception of the extent to which the formal and informal policies, practices and procedures in their organisation focus on the use of their strengths" (Els, Mostert, Van Woerkom, Rothmann & Bakker, in progress). An SBA is conceptualised as a job resource on an organisational level and will hold an extrinsic motivational role. The conceptualisation of an SBA was derived from the Job Demands-Resources (JD-R) Model (Demerouti & Bakker, 2011), The Broaden-and-Build theory of positive emotions (Frederickson, 2004), and the Happy-Productive Worker Thesis (Cropanzano & Wright, 2001).

The JD-R model focuses on job resources, which are explained as those physical, social, or organisational aspects of the job that (a) are functional in achieving work-related goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate learning, personal growth, and development (Demerouti & Bakker, 2011; Shaufeli & Bakker, 2004; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). According to Demerouti and Bakker (2011), an underlying psychological process of motivation occurs when employees have the job resources they need to do their jobs to their fullest potential.

This motivation leads to high work engagement, low levels of cynicism, and excellence in their performance. Thus, job resources may play an extrinsic motivational role because they are instrumental in achieving work goals (Bakker & Demerouti, 2007). Although job resources exist on three levels (organisational, interpersonal, and task level), it was decided that job resources would be conceptualised on an organisational level (e.g., salary or wages, career opportunities, and job security).

The Broaden-and-Build theory of positive emotions introduced by Fredrickson (1998) emphasises the effect of positive emotions that increase an individual's thought-action repertoire, broadening and building that individual's physical, intellectual, and social resources for the future (Clifton & Harter, 2003). Therefore, when individuals use their strengths or do what they are good at, they experience positive emotions that broaden and build their motivation to increase and improve on these strengths. The Happy-Productive Worker Thesis argues that happy employees are more satisfied with their jobs and will performer better (Zelenski, Murphy & Jenkins, 2008). Happiness is conceptualised as psychological well-being, and this conceptualisation is supported by Wright and Cropanzano (2004), who produced research supporting a positive link between psychological well-being and performance, with the suggestion that happiness should be conceptualised as psychological well-being.

The second objective of the study was to determine whether the items in the SBA scale are unidimensional. Rasch analysis was used to explore the dimensionality of scales, because it allows for the evaluation of the fit of the scale items to the unidimensional model. The item fit derived by this method helps to identify items that need to be removed in order to enhance the unidimensionality of the assessed construct (Bond & Fox, 2001). It is therefore justifiable to claim that the items measure one construct, but only once unidimensionality is confirmed (Meads & Bentall, 2008). According to the results of the Rasch analysis, the infit and outfit statistics for all eight items were satisfactory, except for one item (SBA1: infit = 1,99 and outfit = 2,29), which showed indices outside the cut-off points of 0,60 and 1,40. This suggests that item SBA1 does not provide information consistent with the information provided by the other SBA items, and is thus not unidimensional.

The third objective was to determine the internal validity and reliability of the new SBA scale. The Rasch model provides two reliability estimates, namely person reliability and item

reliability indices. Validity is established once unidimensionality is determined, as items that measure what they are supposed to measure (the latent trait) are said to be valid (Babbie & Mouton, 2005). Person reliability indicates the reliability of "person ordering" if the same sample of persons were given another parallel set of items measuring the same construct and item reliability (Bond & Fox, 2007). Item reliability indicates the reliability of item placement along the pathway, if the same items were given to another sample of the same size that behaved the same way (Bond & Fox, 2007). Acceptable person and item reliabilities are values equal to or greater than 0,80. The results showed acceptable item reliability for the dimension, demonstrating that these items differentiate well among each other on the measured variable.

3. 2 LIMITATIONS OF THIS RESEARCH

Although the findings of this study make a valuable contribution to the evaluation of the SBA scale, there are limitations to the study. Firstly, Rasch analysis focuses mainly on the evaluation and determination of unidimensionality. It is important that other psychometric properties of this instrument are investigated in order to allow this instrument to be used in studies conducted by other researchers within South Africa. Although determining undimensionality is important for reliability and consistency, this study lacks external validity. According to Steckler and McLeroy (2008), external validity determines whether causal relationships can be generalised to different measures, persons, settings, and times. If a research study is conducted and it is found that the results relate only to the sample and no one else, the study lacks external validity. The goal of most research studies is to generalise results to the population. If this cannot be done, then the research will be limited in use (Wimmer, 2000). Therefore, it is necessary to determine the external validity of the SBA scale.

Additionally, the instrument is currently only available in English, making it difficult to test the cultural sensitivity of the items. South Africa is characterised by a uniquely diverse population, along with a history of unfair, biased, and discriminatory assessment instruments (Foxcroft, Paterson, Le Roux & Herbst, 2004). It is therefore imperative that a scale developed for the South African context is translated in order to improve the ability of all individuals to effectively comprehend the SBA scale, and to allow studies to be conducted on

all employees, regardless of their socio-economic background or occupation level. Item bias and factorial invariance of the scale should be tested in future studies.

According to Hambleton and Rodgers (1995), item bias occurs when the way in which an item is structured, the item wording, or the content of the item influences the participants' responses. Bias is the presence of some characteristic of an item that results in differential performance for individuals of the same ability but from different ethnic, gender, cultural, or religious groups. According to Little (2009), in order to compare constructs across two or more groups or across more points in time, the equivalence of measurement must be established. This is central to the concept of factorial invariance, which is assumed in any cross-group or cross-time comparison. Without factorial invariance, conclusions cannot be made with confidence. Factorial invariance will contribute to greater knowledge on the functioning of the SBA scale and the validity of this scale for the South African population.

3.3 RECOMMENDATIONS

3.3.1 Recommendations for the organisation

Based on the results of this study, recommendations can be made for the organisation. The SBA scale will allow organisations to measure the relationship between employees' perception of using their strengths within their organisations and various organisational outcomes (such as productivity, engagement, etc). This information will allow organisations to make changes or implement processes or procedures that will assist in improving human resource management in order to maximise the value-add of their employees. Thus, implementing the SBA scale will assist organisations to create the type of environment that motivates employees to use their strengths by allowing employees to flexibly apply as many different resources and skills as necessary in performing their jobs, and enable the achievement of excellence (Aspinwall & Staudinger, 2003). This will release positive emotions, and influence the employees' perception of the organisation and, subsequently, the way in which they relate to customers. Encouraging employees to use their strengths within their jobs and do what they are good at will create dedicated, happier, and more innovative employees who, through valuing their work, will add to the overall productivity of the organisation (Meyers, 2010). These employee's will create an experience for others

(potential clients and employees) entering the organisation that will build a strong and competitive organisational brand and help attract and retain talent (Govender, 1999).

3.3.2 Recommendations for future research

Notwithstanding the limitations discussed above, recommendations can be made for future research. The objective of this study was to evaluate the reliability and validity of the South African SBA Scale using Rasch analysis. No instrument exists within the South African context that measures the employee's perception of the use of their strengths within their organisationIt was determined that the SBA scale showed good item and person reliabilities and overall satisfactory unidimensionality, except for one item (SBA1). It is therefore recommended that this item be removed or re-formulated in future studies. Furthermore, due to the under-utilisation of certain categories (0, 1, and 2), it is recommended that the seven-point frequency Likert scale be collapsed. Future research should explore the external validity of the scale and other psychometric properties, along with investigation into translating the SBA scale into the indigenous languages in South Africa. Tests developed for diverse cultural or language groups should pay attention to the quality of translations, linguistic equivalence, inappropriate items and/or content, cultural relevance, psychometric equivalence, procedural and normative equivalence, and the cross-cultural validity of adapted instruments (Sue & Chang, 2003). It is thus important that, when existing tests are adapted, revised, and updated for a multicultural and multilingual population, rigorous bias and equivalence studies be conducted to guide decisions regarding to which groups the test can confidently be applied (Foxcroft et al., 2004).

REFERENCE

Aspinwall, L. G., & Staudinger, U. M. (2003). A psychology of human strengths: Some central issues of an emerging field. In L. G. Aspinwall & U. M. Staudinger (Eds.), *A psychology of human strengths: Fundamental questions and future directions for a positive psychology* (pp. 9-22). Washington, DC: American Psychological Association. *Assessment*, *15(3)*, 306-310.

Babbie, E., & Mouton, J. (2001). *The practise of social research*. Cape Town: Oxford University Press.

Bakker, A., & Demerouti, E. (2007). The Job Demands-Resources model: state of the art. *Journal of Managerial Psychology, 22*(3), 309-328.

Bond, T. G., & Fox, C. M. (2001). *Applying the Rasch model: Fundamental measurement in the human sciences*. New Jersey: Lawrence Erlbaum Associates Publishers.

Clifton, D. O., & Harter, J. K. (2003). Strengths investment. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 111-121). SF: Berrett-Koehler.

Cropanzano, R., & Wright, T. A. (2001). When a "happy" worker is really a "productive" worker: A review and further refinement of the happy-productive worker thesis [Abstract]. *Consulting Psychology Journal: Practice and Research, 53*(3), 182-199. Retrieved May 16, 2011, from http://www.psycnet.apa.org/index.cfm?fa=buy.optionToBuy&id=2 001-18751-005.

Demerouti, E., & Bakker, A. B. (2011). The Job Demands-Resources model: Challenges for future research. *SA Journal of Industrial Psychology, 37*(2).

Els, C., Mostert, K., Van Woerkom, M., Rothmann, S. Jnr., & Bakker, A. B. (in process). *Following a strength-based and deficiency-based approach: The development and psychometric properties of a new scale*.

Foxcroft, C., Paterson, H., le Roux, N., & Herbst, D. (2004). Psychological assessment in South Africa: A needs analysis: The test use patterns and needs of psychological assessment practitioners.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*, 300-319.

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Phil. Trans. R. Soc. Lond. B, 359*, 1367–1377. Retrieved May 16, 2011, from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1693418/pdf/15347528.pdf.

Govender, K. K. (1999). Employees' perception of the organisational climate. Department of business management. University of Transkei. *South African Journal of Industrial Psychology, 25*(3), 44-49.

Hambleton, R., & Rodgers, J. H. (1995). *Practical assessment, research and evaluation.* Retrieved April 25, 2012, from http:// pareonline.net/getvn.asp?v=4&n=6.

Little, T. D. (2009). Factorial invariance: What it is and why it is so damn important. Retrieved April, 25, 2012, from

http//:www.quant.ku.edu/.../Factorial%20Invariance.APS.May.2009.ppt.

Meads, D.M., & Bentall, R.P. (2008). Rasch analysis and item reduction of the hypomanic personality scale. *Personality and Individual Differences, 44*, 1772-1783.

Meyers, M. C. (2010). *Strengths-based development and its influence on positive emotions, employee innovativeness and organizational citizenship behaviour* (Master's thesis). Tilburg University, Netherlands.

Shaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources and their relationship with burnout and engagement: a multi sample study. *Journal of Organizational Behavior*, 25(3), 293-315.

Steckler, A., & McLeroy, K. R. (2008).The importance of external validity. *American Journal of Public Health, 98*(1), 9-10. doi: 10.2105/AJPH.2007.126847.

Sue, S. & Chang, J. (2003). The state of psychological assessment in Asia. *Psychological*

Wimmer, R. (2000). Validity. Retrieved April, 25, 2012, from http://www.rogerwimmer.com/wrvalidity.htm.

Wright, T. A., & Cropanzano, R. (2004). The role of psychological well-being in job performance: A fresh look at an age-old quest. *Organizational Dynamics, 33,* 338-351.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the Job Demands-Resources Model. *International Journal of Stress Management, 14*(2), 121-141.

Zelenski, J. M., Murphy, S. A., & Jenkins, D. A. (2008). The Happy-Productive Worker Thesis revisited. *Journal of Happiness Studies, 9*, 521-537.