

# Bias and equivalence of the Strengths Use and Deficit Correction questionnaire in a South African bank

**S.V. Mtshali**

**25267965**

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of the North-West University

Supervisor: Dr Symen A. Brouwers

Co-supervisor: Prof Karina Mostert

## COMMENTS

The following remarks are important to note beforehand:

- 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 the 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* is used and the APA guidelines were followed in constructing the tables.

## DECLARATION

I, Sanelisiwe Vanessa Mtshali, hereby declare that this dissertation titled “**Bias and equivalence of the Strengths Use and Deficit COrrrection questionnaire in a South African bank**” is my own work. The views and opinions expressed in the present study are my own and relevant literature references as shown in the reference list.

Furthermore, I declare that the contents of this study will not be submitted for any other qualification at any other tertiary institution.



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Sanelisiwe Vanessa Mtshali

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## LANGUAGE EDITING

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TO WHOM IT MAY CONCERN:

I hereby confirm that the Master's dissertation *Bias and equivalence of the Strengths Use and Deficit Correction questionnaire in a South African bank* by Ms Sanelisiwe Mtshali was edited and groomed to the best of my ability. This included recommendations to improve the language and logical structure, guide the line of argument as well as to enhance the presentation.

Rev Claude Vosloo  
Language and knowledge practitioner and consultant

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*Don't think outside the box, reinvent the box*

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## SUMMARY

### **Title:**

Bias and equivalence of the Strengths Use and Deficit COrrrection questionnaire in a South African bank

### **Keywords:**

Deficit correction; Strengths-use behaviour; Deficit-correction behaviour; Positive psychology; Cross-cultural psychology; Reliability; Item bias; Structural equivalence.

Organisations are facing the challenge of implementing strategies geared to improve employees' performances and maximise the company's returns. Positive psychology, particularly the strengths-based approach (SBA) provides an answer to this challenge. Based on the literature review, no evidence was found of instruments that measure both strengths and weaknesses at an individual and organisation level. In order to bridge this gap, Van Woerkom et al. (2016) developed the Strength Use and Deficit COrrrection (SUDCO) questionnaire.

The general objective of the present study, therefore, was to validate the SUDCO in a specific working sample ( $N = 658$ ) of banking employees, and to examine the bias and equivalence of the SUDCO across the Nguni, Sesotho, and West-Germanic language groups. In addition, the functioning of the SUDCO was compared across language groups in terms of age, organisational tenure, and gender. The researcher selected a cross-sectional design that employed convenient sampling. Confirmatory factor analyses (CFA) were conducted to confirm the four-factor structure. A multi-group CFA was done simultaneously for a direct comparison of the SUDCO's fit for the three language groups.

The results confirmed the four-factor structure, namely POS for strengths use, POS for deficit correction, strengths-use behaviour and deficit-correction behaviour. Multi-group analyses indicated that the instrument was not biased and was equivalent across the three language groups. The results had also shown that the SUDCO provides a consistent measure with Cronbach's alpha coefficient ranging from  $\alpha = 0.93$  to  $\alpha = 0.94$  for each subscale. Furthermore,

the regression analyses revealed that, the effects for the two strengths use dimensions in particular, showed significant coefficients with age and organizational tenure.

After conclusions were drawn on the present research study, recommendations were made for the organisation as well as for possible future research.

# **CHAPTER 1**

## **INTRODUCTION**

The purpose of the present study was to validate a new instrument that measures strengths use and deficit correction, namely the Strengths Use and Deficit COrrrection questionnaire, in a targeted working sample of banking employees. More specifically, the goal was to examine bias and equivalence regarding the SUDCO across diverse language groups: Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi), and West-Germanic (English and Afrikaans), and to compare the functioning of this instrument within each language group with regard to age, organisational tenure, and gender.

This chapter presents the problem statement and research objectives, and outlines the intended value the study holds for the individual, organisation and literature. Furthermore, the applied research methodology is discussed, and certain anticipated and important ethical considerations pointed out. At the end of the chapter follows a summary of subsequent chapters' content.

### **1.1 PROBLEM STATEMENT**

The South African socio-economic climate is characterised by deficiencies such as shortage of skills (Maruish, 2013), lack of employment opportunities and poor quality education (Wike & Simmons, 2015). In addition, the index for the distribution of population income shows that the South African economic inequality is easily identifiable in terms of ethnicity and gender groups. Currently, the Gini coefficient is estimated at 63.6% (the value close to 0 indicate a perfectly equal society and values close to 100% indicate a perfectly unequal society), (Hodges, 2012; Keeton, 2014).

In the workplace, this imbalance presents a challenge for business leaders, particularly the Human Resource practitioners. These agents have the responsibility to ensure every person in the organisation has fair access to the labour market. Their aim is to embrace and apply principles of equity, inclusivity, diversity and fairness to help promote employees' wellbeing (Deloitte & Touche, 2014). In addition, to the benefits of supporting wellness in the workplace, the application of the above-mentioned principles are also a legislative requirement stipulated

by Equity Act No. 55 of 1998 (Government Gazette, 1998).

It is, therefore, important for organisations to remain competitive by investing in sound strategies for human capital to deal with the market's constrained human resources (Deloitte & Touche, 2014). In light of the mentioned limitation, organisational psychologists and Human Resource practitioners should thus make a concerted effort to ensure consistency and fairness when applying psychometric assessments during management processes. These include phases of recruitment, employment, performance management, coaching and promotions (Foxcroft & Roodt, 2009). Furthermore, organisations have begun considering the potential benefits of incorporating positive psychological principles, particularly the strength-based approach (SBA). The aim is to enhance work-life experience and maximise the organisation's profits (Echols, 2005; Mills, Fleck, & Kozikowski, 2013).

The field of psychology primarily has three broad objectives, namely attempt to repair damage, prevent problems, and build strengths in people (Luthans & Church, 2002). However, over the years, psychology focused on pathology, which entails the negative aspects of human life that presents fundamental problems or weaknesses (Clifton & Harter, 2003; Seligman & Csikszentmihalyi, 2014). As a result, most personnel-development practices in the workplace are based on a deficit-based approach (DBA) (Bouskila-Yam & Kluger, 2011; Brim & Asplund, 2009; Seligman & Csikszentmihalyi, 2000). The DBA suggests that if an organisation has pathological problems in its strategy, it is vitally important for organisational success to correct these problems (Caza & Caza, 2008).

Various studies are found in the literature supporting the DBA. Research evidence suggests that when organisations focus on motivating employees to improve or overcome their weaknesses, it improves their performance and leads to desired behaviours (De Leeuwa & Van Den Berg, 2011). Similarly, Rust, Diessner, and Raede (2009) indicate that participants who focus on a single character weakness, or relative character strength, show as much gain in life satisfaction as those who pay attention only to two character strengths. In addition, contemporary studies in leadership indicate that continuous learning and dealing with the unknown, untested, and untried (deficits) may be the secret to success (Hodgson & White 2011). This view is supported further by a study of Kaiser and White (2008), in which leaders previously were successful in their careers due to their technical knowledge, but eventually failed because of relationship problems (Kaiser & White, 2008). These authors argue that

creating self-awareness on deficits is important for the performance of individual employees as well as for the organisation.

Although there is evidence that focusing on a DBA can be beneficial for the employee and the company, it is not enough to focus exclusively on correcting weaknesses. The reason is that the absence of deficits does not necessarily explain optimal functioning, excellence, growth, flourishing, and fulfilment (Caza & Caza, 2008; Seligman, 2002). Therefore, experts in this field propose a shift in psychology, away from studying dysfunction towards positive psychology. They advocate a focus particularly on the science of strengths, by studying factors that make people flourish (Clifton & Harter, 2003; Harter, Schmidt, Killham & Agrawal, 2009). Furthermore, researchers such as Seligman, Steen, Park, and Peterson (2005) describe positive psychology as a science and a practice that seeks to explain human suffering and happiness, as well as its interaction.

Based on literature and research findings, the significance of positive psychology is as important in clinical settings as it is in organisations (Jones, 2010, Seligman et al., 2005). Studies on organisations by Sorensen (2014) indicate that investing in and focusing on employees' strengths help boost engagement between employees and customers. This leads to improved performance, increased profitability and productivity, and higher earnings per share for the businesses. Supporting evidence suggests that during performance management, application of strengths-based appraisal systems also help improve relationships between supervisors and subordinates, which duly reflects in increased performance (Aguinis, Joo, & Gottfredson, 2012; Bouskila-Yam & Kluger, 2011; Murlis & Schubert, 2001). Similarly, other studies link SBA to employees' engagement (Botha & Mostert, 2014; Gallup, 2013). For example, Brim and Asplund (2009) found that when a supervisor focuses on strengths, the chances are much less that employees will disengage at work.

While it is important for organisations to support their employees in strengths use and deficit correction, employees themselves also need to be proactive and take the initiative to develop and utilise their strengths and correct their weaknesses. Managers identify employees' weaknesses through the following outcomes: their quality or quantity of work, and slow pace in decision-making (Stewart & Stewart, 2002). Consequently, employees adopt initiatives to improve deficits through different interventions such as mentoring, coaching, and training (Mayberry, 2007). Research has shown that when employees engage in behaviour to improve

deficits, the outcomes are: increased performance (De Leeuw & Van DEN Berg, 2011), continuous improvements, ability to adapt with change, (Fuller, Marler, & Hester, 2006), recovery of customer services, empowerment, and team support (De Jong & De Ruyter, 2004).

On the other hand, employees who know and utilise their strengths become more engaged, perform better, and are less likely to leave their company (Sorenson, 2014). Similarly, behaviour that utilises strengths is related positively to the following outcomes: productivity and job satisfaction (Erdogan & Bauer, 2005; Kim, Hon, & Crant, 2009), increase in engagement (Salanova & Schaufeli, 2005), self-efficacy (Ohly & Fritz, 2007; Parker, Williams & Turner, 2006), job autonomy (Ohly & Fritz, 2007), and employee creativity (Kim, Hon, & Crant, 2009). In addition, Bouskila-Yam and Kluger (2011) argue that when employees understand their unique patterns of strengths and learn how to build on these strong points and talents, they excel at their jobs.

Based on the discussion above, it is evident that either focusing on strengths, or on deficits provides positive outcomes. Therefore, the approach that combines both strengths and deficits will have even more value. Consequently, several researchers in positive psychology have argued for a balanced approach that combines both strengths and weaknesses (Henry, 2004, Linley & Carter, 2007; Seligman, Parks, & Steen, 2004). Research has indicated that using a balanced approach is critical for the following gains: forming a healthy personality (Erikson & Erikson, 1997), self-efficacy, and perceived effectiveness in dealing with work problems (Artistico & Rothenberg, 2013). Furthermore, findings show that adopting a balanced approach leads to development and improved performance in the work place (Zenger, 2008).

In response to the call for a balanced approach, Van Woerkom et al. (2016) developed a taxonomy which indicates that both strengths and deficits should be addressed by organisations and employees themselves. As a result, the SUDCO measures four dimensions of perceived organisational support (hereafter abbreviated as POS), namely POS for strengths use, POS for deficit correction, strengths use behaviour and deficit correction behaviour. POS can be defined as the extent to which employees perceive that their organisation supports them in terms of two foci in the workplace:

- Using their strengths (strength use).
- Improving their deficits (deficit correction).

In addition to the organisational support, at an individual level the SUDCO measures the individual employees' self-starting behaviour with a dual focus (Van Woerkom, et al., 2016):

- Using their strengths in the workplace (strengths-use behaviour).
- Improving their deficiencies in the workplace (deficit-correction behaviour).

Other instruments identified in the literature to measure strengths use are the following: Strength spotting scale (Linley et al., 2010), Personal Growth Initiative scale (Robitschek, 1998) and the Gallup\Clifton StrengthsFinder (Asplund, Lopez, Hodges & Harter, 2009). The Strength spotting scale has 20 items with five subscales assessing Ability, Emotional, Frequency, Application and Motivation. Its aim is to identify strengths in people who are likely to recognise strengths in others (Linley et al., 2010). The Personal Growth Initiative scale has four factors, namely Readiness for Change, Planfulness, Using Resources, and Intentional Behaviour (Robitschek, 1998). This scale identifies a set of skills used for personal development. The Gallup\Clifton StrengthsFinder is based on the idea that strengths are naturally recurring patterns of thought, feeling, or behaviour that can be productively applied. It includes 177 statements per 34 themes, including such themes as achiever, activator, ideation, and relator (Asplund, Lopez, Hodges & Harter, 2009). Participants are given 20 seconds to respond to each item before the system moves on to the next one.

None of the instruments mentioned above are adapted and tested for the South African context. Also, none measures the balance between strengths and weaknesses, and most of them measure only strengths attributes. In addition, no instrument could be found that provides a balanced approach in the measuring of strengths use and deficit correction at the level of an individual employee as well as an organisation. Due to socio-cultural diversity in the workplace, it is therefore important to confirm the unbiased properties of such a tool. In this regard, the Employment Equity Act No. 55 of 1998 Section 8 clearly stipulates that psychological testing and other similar forms of assessment of employees are prohibited unless the test or assessment is not biased against any employee or group (Government Gazette, 1998). Therefore, the present study will add value to the field of industrial psychology by ensuring the SUDCO is fit for its purpose and use within the South African banking sector.

The validation of the SUDCO is of primary importance for the present study aimed at the South African context. This study provides significant input for the psychological development and assessment trends in South Africa. The reason is that there is a concerted effort to regulate the administration of measures applied to different groups. Often measurement occurs without investigating the appropriateness or bias nature of the measure as well as the misuse of test results by not considering the differences in socio-cultural, economic, educational and environmental factors (Foxcroft & Roodt, 2009). In the workplace, psychological measures are used primarily for assessment on two levels: individual employees (e.g. during recruitment and selection, performance management); and organisational, in other words, psychological constructs such as corporate culture, employee engagement, or burnout (Foxcroft & Roodt, 2009). The SUDCO measures constructs at both an individual and organisational level. It is therefore important to ensure fair use of this psychometric instrument by examining the validity, item bias as well as structural equivalence, and confirming the reliability of its measurements.

The main objective of the present study was to confirm the validity of the questionnaire. Validity measures what the test purports to measure and how well it does so (Foxcroft & Roodt, 2009). Thus, validity can be defined as the ratio of the relevant score minus the irrelevant error (referred to as bias) to the total or observed score (Moerdyk, 2009). Furthermore, it is becoming more customary and vital within the South African context not only to report reliability and validity (Nunnally, 1978), but also demonstrate equivalence in cross-cultural research (He & Van Der Vijver, 2012). Bias and equivalence are obligatory concepts when applying psychological measures in a multicultural society such as South Africa (Meiring, 2007). The South African population's estimated total amounts to 52,83 million, whereby the majority are Black African (42,28 million), who constitute almost 80% of the total population, followed by Coloureds (4,77 million), Whites (4,60 million) and Indians/Asians (1,33 million) (Statistics South Africa, 2013). In addition, the complexity about such a diverse population is that South Africa has 11 official languages. Therefore, issues of bias and equivalence become relevant in ensuring employees' wellbeing and equity across socio-cultural contexts.

Cross-national, cross-ethnic and multi-lingual studies are used to compare a wide scope of opinions, attitudes, values, and abilities among individuals of different cultural groups (Kankaraš, 2010). Stormborg and Olsen (2004) argue that per definition, "Cross-cultural studies are designed to permit valid and scientifically rigorous comparison, and it is very



difficult to make fair comparison using an instrument that is culturally sensitive to certain cultures” (p. 73). Cross-cultural studies aim to investigate whether test scores obtained for different cultural populations can be interpreted similarly across these populations. Therefore, bias and equivalence has become the common concepts to translate this issue (Van de Vijver & Tanzer, 2004).

Bias exists when differences in a measurement’s criterion (categorisation or scores) do not relate to the construct that was designed to be measured by the instrument (Van De Vijver & Leung, 2011). A biased test either overestimates or underestimates the value of the variable that it intends to assess (Reynolds & Suzuki, 2013, p. 83). In the literature, three types of bias are conceptualised with regard to constructs, methods and items, as explained below:

- *Construct bias* refers to dissimilarity of constructs across cultures (Van de Vijver, 1998; Van De Vijver & Leung, 2011); the psychological construct itself would be an invention of a specific culture, rather than a universally existing way of behaviour.
- *Item bias*, also known as ‘different item functioning’ (DIF), refers to anomalies at an item level such as poor translation. The present study investigated item bias regarding SUDCO since the researcher was interested to compare the different groups’ interpretation and understanding of items within each instrument.
- *Method bias* can be found in between the above-mentioned two extremes, and sprouts from the methodological-procedural aspect of a study, which may be from the sample, the instrument and/or administration (Van de Vijver, 1998; Van De Vijver & Leung, 2011).

Cross-cultural psychologists also differentiate between three hierarchical, qualitatively different levels of equivalence, namely structural, measurement unit, and scalar, as conceptualised in the literature:

- *Structural equivalence* measures if the construct is measured the same way in different groups (Maruish, 2013).
- *Measurement unit equivalent* is when the measurement scales have the same units of measurements but a different origin (e.g. measures of temperature, Celsius and Kelvin scales) (Van De Vijver & Leung, 2011).

- *Scalar or full score equivalence* assumes both an identical interval or ratio scale and an identical scale of origin across cultural groups (Van De Vijver & Leung, 2011).

Equivalence is a characteristic of cross-cultural comparisons and not an intrinsic psychometric property of a measure. For example, kilometres and miles both measure distance accurately, however, when both are compared, this may result in a lack of equivalence (He & Van Der Vijver, 2012). While the issue of the measurement equivalence stems from cross-cultural studies, response bias is attributed to the subject of research attitudes in general (Kankaraš & Moors, 2011).

After determining the factors and examining the constructs for bias and equivalence, the researcher investigated the consistency of this measure for the three language groups to establish reliability. Reliability can be defined as “the measure of the consistency with which the measuring instrument measures” (Moerdyk, 2009, p. 37). The reliability of SUDCO was measured by calculating Cronbach’s alpha for each dimension of POS: for strengths use, deficit correction, strengths-use behaviour and deficit-correction behaviour. The alpha coefficient denotes good reliability with values over 0.70 (Nunnally, 1978).

In the present study, the focus was on language groups as the most fruitful way to differentiate between people of different cultures. South African society is served by 11 official languages, with Zulu the most popular one. Sampling a number of these 11 languages may be difficult since they are not as readily available, and originate from remote locations. Therefore, people were grouped into three distinct language groups: Nguni, which consists of the IsiZulu, IsiXhosa, IsiNdebele and SiSwati languages; Sotho, consisting of the Sesotho, Setswana, and Sepedi languages, and a West-Germanic group, consisting of English and Afrikaans. The languages within each main group show several similarities in terms of syntax and grammar, and the users share numerous cultural attributes.

The sample selected for the present study is located in the South African bank, with a very large workforce. The retail banking sector is a labour-intensive industry, which employs over 150 000 employees, with the bulk represented by the four major banks. These individuals comprise the second largest number of employees (after community and social services) of the South African workforce (Statistics South Africa, 2014). This population was chosen because it has diverse demographics which allowed the researcher to determine the bias and equivalence

of the SUDCO for the different language groups. In addition, the organisation is operating in a dynamic environment, where there is stiff competition for skilled staff. Applying strength based approach in this organisation is important, as evidence suggests that it results many benefits including increased productivity, staff engagement (Brim & Asplund, 2009) and also positive economic returns (Echols, 2005).

Vorster, Olckers, Buys, and Schaap, (2005) postulate that research on equivalence and bias is important because cultural values, attitudes and the leadership styles impact the interpretation and understanding of the psychological instruments, in this case the SUDCO. Therefore, the main objective of the present study was to examine the psychometric properties of the SUDCO in a specific working sample of banking employees. This included establishing the validity, bias and equivalence of the research.

## **Research questions**

The following research questions were posed in the present study:

- How does the literature conceptualise the constructs of perceived organisational support (POS) for strengths use, deficit correction, strengths-use behaviour and deficit-correction behaviour?
- What is the factorial validity of the SUDCO?
- Are the items of the SUDCO biased across the different language groups: Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans)?
- Is the SUDCO a structurally equivalent measuring instrument across the mentioned language groups?
- What is the reliability of the SUDCO among the mentioned language groups?
- Is there a relationship between the functioning of the SUDCO within each language group with regard to age, organisational tenure, and gender?
- Which conclusions can be drawn and recommendations made for future research and practice?

## **1.2 RESEARCH OBJECTIVES**

The research objectives for the present study can be divided into a general objective, and specific objectives flowing from it.

### **1.2.1 General objective**

The general objective of the study was to validate the SUDCO in a specific working sample of banking employees; examine bias and equivalence of the SUDCO across the indicated language groups, and compare the functioning of the SUDCO within each language group with regard to age, organisational tenure, and gender.

### **1.2.2 Specific objectives**

The general objective was subdivided into specific objectives, which are:

- Determine how the literature conceptualises POS for strengths use, deficit correction, strengths-use behaviour and deficit-correction behaviour.
- Investigate whether the SUDCO has four factors consisting of POS for strengths use, deficit correction, strengths-use behaviour and deficit-correction behaviour.
- Ascertain whether items of the SUDCO are biased across the language groups: Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans).
- Determine whether SUDCO has a similar internal meaning (structural equivalence) for the mentioned language groups.
- Investigate the reliability of the SUDCO among the mentioned language groups.
- Compare the functioning of the SUDCO within each language group with regard to age, organisational tenure, and gender.

## **1.3 RESEARCH HYPOTHESES**

The study tested the following hypotheses:

H1: The SUDCO is a four-factor structure, consisting of POS for strengths use, POS for

deficit correction, strengths-use behaviour and deficit-correction behaviour.

- H2: The SUDCO items are not biased against any of the indicated language groups: Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans).
- H3: The SUDCO has a similar internal meaning for the mentioned language groups.
- H4: The SUDCO is a reliable instrument with Cronbach's alpha coefficients  $> 0.70$  for all four dimensions.
- H5: Older employees report higher levels of strengths use and deficit improvement.
- H6: Employees who remain longer with the same company report higher levels of strengths use and deficit improvement than those who are less, irrespective of age.
- H7: The positive effects of age and organisational tenure are more pronounced for men than for women.

## **1.4 RESEARCH METHOD**

A quantitative, non-experimental study was chosen as the applicable approach for investigation (Creswell, 2008). The study also employed a cross-sectional research method. Such a method examines several groups of people at a single point in time. The primary research was based on an empirical study and the secondary research on a literature a review. The findings are presented in the form of a research article.

### **1.4.1 Literature review**

Secondary research was conducted by consulting literature, using the following key words: perceived organisational support, strengths use (behaviour), deficit correction (behaviour), positive psychology, cross-cultural psychology, structural equivalence and bias. The search focused on literature published in the past six years (2000-2016), however for theoretical frameworks and where recent data could not be identified, historical data was used. Different

databases were used for the research: Academic Search Premier; Google Scholar, Business Source Premier; PsycArticles; PsycInfo; EbscoHost; Emerald; ProQuest; SACat; SAEpublications; Science Direct; and Nexus.

#### **1.4.2 Research design**

As mentioned above, a quantitative, non-experimental study was conducted. Quantitative research is a means for testing objective theories by examining the relationship among variables. Typically, these variables can be measured with instruments, so that numbered data can be analysed through statistical procedures (Creswell, 2008). As mentioned previously, the present study also employed a cross-sectional research method, which examines several groups of people at a single point and time (Rubin & Bellamy, 2012). This approach holds certain benefits: it is inexpensive, data can be collected in a short time span, there is a low dropout rate and it requires no long-term administration or cooperation between staff and participants. The study was both confirmatory and exploratory since the tested hypotheses did not test bias and equivalence of the SUDCO for the South African language groups included in this study.

#### **1.4.3 Research participants**

The study employed a convenient sampling method. The research participants ( $N = 658$ ) were selected from different organisational levels as employees at a South African bank. They are fluent in English as it is the official business language. The bank was considered relevant for the present study since it is a large organisation, with a fair representation of diverse personnel regarding age, race, culture, gender, and education.

#### **1.4.4 Measuring instrument(s)**

**Biographical questionnaire:** this instrument was utilised to determine the biographical characteristics of the participants working at the Bank. These can be distinguished as internal dimensions such as year of birth, gender, home language, race; and external dimensions, which include current position and qualification level.

**The SUDCO** (Van Woerkom, et al., 2016) was used to measure the four dimensions described above. The SUDCO consists of four sub-scales, namely: 1) POS for strengths use, including eight items (e.g., “In this organisation, employees can do their jobs in a manner that best suits

their strong points”; 2) POS for deficit correction, including eight items (e.g., “This organisation emphasises the development of employees’ weak points”); 3) Proactive strengths-use behaviour, measured with nine items (e.g., “I actively look for job tasks I am good at”); and 4) Proactive deficit-correction behaviour, measured with eight items (e.g., “In my job, I concentrate on my areas of development”). These four constructs were measured on a 7-point Likert-type scale ranging from 0 (Almost Never) to 6 (Almost Always). In the literature, Van Woerkom et al. (2016) also found these scales to be reliable, reporting Cronbach’s alpha values for POS for strengths use ( $\alpha = 0.95$ ), POS for deficit correction ( $\alpha = 0.89$ ), strengths-use behaviour ( $\alpha = 0.90$ ), and deficit-correction behaviour ( $\alpha = 0.90$ ).

#### **1.4.5 Research procedure**

During the initial stage, a letter explaining the purpose of the study was submitted to the Banks’ Group Human Capital, requesting permission to conduct the study. The survey was sent through email to specific business units in Gauteng. However, since some business units have staff located on different offices and regions, it was able to reach bank employees who are from different South African regions. Employees were provided with a link to conduct the survey online. The survey letter explained the questionnaire, described the purpose of the study, and provided the disclaimer assuring voluntary participation and privacy. Once the data were collected, the analyses of the data, as well as the findings were documented.

#### **1.4.6 Statistical analysis**

The study utilised a Statistical Package for Social Science (SPSS) Incorporation (Inc.) (2010) and Analyses of Moment Structures (AMOS) software packages to process the data. The data analyses adopted both descriptive and inferential statistics. Descriptive statistics that were employed analysed the mean, standard deviation, skewness and kurtosis (Tredoux & Durrheim, 2008). The statistical aspects that were analysed are expounded below.

*Item bias and structural equivalence:* The study applied multi-group structural equations modelling in AMOS to check for item bias and structural equivalence in one analysis, with different model parameters reflecting item bias and types of equivalence. The model consisted of the SUDCO items and its respective latent variables, plus covariances between the latent variables. The four factors that were measured, are POS for strengths use, deficit correction,

strengths-use behaviour and deficit-correction behaviour. The use of the multi-group analysis feature in AMOS made it possible to treat the language group as a moderator of the paths. In order to assess the goodness of measure and structural fit of the model, the following criteria were used: Goodness of Fit Indices including chi-square ( $\chi^2$ ) statistic, Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI) and Standardised Root Mean Square Residual (SRMR). The acceptable model fit for indices were estimated as follows: TLI considered acceptable above 0.90 and excellent above 0.95; RMSEA acceptable below 0.06 and excellent below 0.04; CFI acceptable above 0.90 and excellent above 0.95 (He & Van der Vijver, 2012); SRMR values less than 0.80, generally considered a good fit (Hu & Bentler, 1999).

*Reliability:* In order to assess the reliability of the SUDCO, Cronbach's alpha coefficient of  $\geq 0.70$  were deemed acceptable (Nunnally & Bernstein, 1994). In the present study, the psychometric properties of reliability, structural equivalence and item bias of SUDCO were evaluated amongst the three mentioned language groups.

#### **1.4.7 Ethical considerations**

In order to ensure the welfare of participants, the following ethical considerations were adhered to: protection of physical and psychological well-being, confidentiality, avoiding coercion, ensuring privacy and acquiring informed consent (as identified by Salkind, 2005). In addition, for compliance to the organisation's policies, the approval was obtained from the bank's Group Human Capital. In addition, Information Communication Technology (ICT) and Data Protection policies of the bank will be observed. However, ethics in research entails more than the welfare of participants as it includes areas such as scientific misconduct and plagiarism (Wassenaar, 2006). All outputs, including the research proposal, article and dissertation will be submitted to the Research Ethics Committee who would evaluate the degree of competence against both issues relating to the welfare of participants and the the researchers conduct.

### **1.5 OVERVIEW OF CHAPTERS**

The chapters in the mini-dissertation are outlined as follows:



- *Chapter 1:* presents the introduction (the current chapter).
- *Chapter 2:* comprises the research article where the problem is stated, an overview of the literature provided and the results reported and discussed.
- *Chapter 3:* consist of the conclusions, limitations and recommendations for future study.

## **1.6 CHAPTER SUMMARY**

The first part of this chapter started off with the introduction, problem statement, research objectives and hypotheses. This was followed by the discussion based on existing literature regarding strengths and deficits in the workplace and its related measures. The measuring instruments, including the SUDCO were presented followed by a discussion of the research method. The chapter concluded with an overview of the chapters that comprise this dissertation.

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## **CHAPTER 2**

### **RESEARCH ARTICLE**

# **Bias and equivalence of the Strengths Use and Deficit COrrrection questionnaire in a South African bank**

## **Abstract**

**Orientation:** The use of psychometric assessments that are deemed equivalent and not biased against employees from different language groups which is critical for legislation, employees' well-being and the organisation's outcomes. It is, therefore, important to investigate the cultural consistency of the Strengths Use and Deficit COrrrection (SUDCO) questionnaire.

**Research purpose:** Determine whether the SUDCO dimensions are universally applicable across three South African language groups by measuring bias and structural equivalence of the SUDCO.

**Motivation for the study:** The banking sector could gain valuable insights and outcomes when human capital interventions aim to improve both strengths and weaknesses.

**Research design, approach and method:** The study employed a convenient sampling method. A sample ( $N = 658$ ) of employees in the banking sector participated in the study. The research focused on psychometric properties relating to bias, structural equivalence and reliability.

**Main Findings:** A four-factor model fitted the data best. This model described perceived organisational support (POS) for strengths use, POS for deficit correction, strengths-use behaviour, and deficit-correction behaviour. A multi-group confirmatory factor analysis was done for a direct comparison of the SUDCO's fit simultaneously across three language groups (Nguni, Sesotho and West-Germanic). The 33 items from the research were found to be unbiased against any of the three language groups and were structured into the same four latent constructs.

**Practical implications:** Managers should understand the significance of adopting fair and equivalent psychometric instruments for the population with different language groups in South Africa. It is also crucial that employees and managers understand the benefits of a combined strengths and deficit approach as relating to different language groups.

**Contribution/Value-add:** The study contributes to literature since to date, no studies were undertaken to measure bias and equivalence amongst the three mentioned language groups, which constitute 96% of the South African population.

**Keywords:** strengths support, deficit correction; strengths-use behaviour, deficit-correction behaviour; positive psychology; cross-cultural psychology; reliability; item bias; structural equivalence.



## INTRODUCTION

Currently, five major human-capital challenges face organisations, including the banking sector in South Africa. These challenges are: leadership, retention and engagement, diversity and inclusion, workforce capability, and talent acquisition (Deloitte & Touché, 2014). Talent management, which consists of recruitment, selection, compensation and training, makes up the largest component of business operating expenses. The average costs of talent management are estimated at from 70% to 80% (Director, Cascio, & Boudreau, 2013). Therefore, to maintain a competitive advantage, organisations adopt a human-capital strategy with a similar level of precision and analyses as capital investments in plants and equipment (Echols, 2005).

To optimise the effect of factors related to human capital on the overall business performance, organisations strongly emphasise practices of performance management aimed at improving employee deficits (Aguinis, Gottfredson, & Joo, 2012). In support of the Deficit Correction Approach (hereafter abbreviated as DCA), a growing body of empirical evidence suggests that correcting employee deficits lead to higher work engagement (Van Woerkom, et al., 2016). In turn, this has the following work-related outcomes:

- Provides employees with skills relevant to their current role (White, 2009).
- Improves life satisfaction and promotes continuous learning (Hodgson & White 2009).
- Leads to innovation (Brott, 2009), and help form identity (Fineman, 2006).
- Predicts psychological empowerment and work engagement (Beukes, Stander, & Els, 2015).

In this regard, evidence shows that successful organisations such as Google and Schibsted that have adopted DCA, report tangible financial outcomes of increased earnings (White, 2009).

Although there is plausible evidence for the value of DCA, there also is criticism. The DCA was implemented initially to help cure mental and emotional illness after people experienced dissolution subsequent to World War 2 (Seligman & Csikszentmihalyi, 2014). As a result, psychology focused almost exclusively on understanding suffering and correcting deficits (Seligman, Parks, & Steen, 2004). However, Tombaugh (2005) argues that a DCA creates a work environment where employees exhibit behaviour that consists of blaming others, and

creativity, innovation and commitment are stifled. This approach is also associated with negative emotions such as anxiety, irritation, and frustration (Page & Vella-Brodrick, 2009), and the corresponding adverse effects on job performance (Roberts, et al., 2005). Therefore, focusing on DCA, the field of psychology neglected the two other primary objectives of psychology, namely increasing the happiness of relatively untroubled people, and studying individuals' strengths and virtues (Seligman & Csikszentmihalyi, 2014).

In an attempt to fill the gap of the limited focus on deficits, experts in the field proposed a shift towards positive psychology. One of the outcomes linked to this shift in thinking was the development of a strengths-based approach (hereafter: SBA) (Seligman, Parks, & Steen, 2004). SBA is a positive aspect of psychology that focuses on peoples' strengths (Seligman & Csikszentmihalyi, 2014). The value of a SBA is well documented in literature. This entails practices such as positive leadership, a strengths-based organisational culture, and appropriate change management (e.g. appreciative inquiry). Evidence shows that these practices can help companies meet their business goals (Tombaugh, 2005). Furthermore, research indicates a positive association between the variable use of strengths with engagement (Van Woerkom, Oerlemans, & Bakker, 2016), work satisfaction (Ruch, Furrer, & Huwyler, 2004), performance (Tombaugh, 2005), and positive effect (Meyer & van Woerkom, 2016). Other findings show that SBA provides employees key support in achieving goals, which leads to an increased need for satisfaction and well-being (Linley, Nielsen, Gillett, & Biswas-Diener, 2010).

After the introduction and increased research on the SBA, researchers expressed concern that the field again was moving to the one extreme (an almost exclusive focus on strengths), while neglecting weaknesses (Henry, 2004; Luthans & Youssef, 2007). As a result, several researchers argued for a balanced approach (Henry, 2004; Seligman, Parks, & Steen, 2004; Linley & Carter, 2007). In response, Van Woerkom et al. (2016) developed a new taxonomy. According to this taxonomy it is important for an organisation to focus on developing strengths as well as weaknesses, and to make sure that employees enjoy perceived organisational support (hereafter abbreviated as POS) in this regard. In addition, not only an organisation, but individual employees as well, should take responsibility and be proactive in developing their strengths and overcoming their weaknesses. Consequently, this taxonomy consists of four constructs informing the use of strengths and the correction of deficits in the work place: two organisational-based and two individual-based constructs.

From the above-mentioned taxonomy, a new questionnaire was developed by Van Woerkom et al. (2016) to measure the four different constructs. The questionnaire became known as the Strengths Use and Deficit COrrrection questionnaire (hereafter: SUDCO). This questionnaire measures the following aspects: POS for strengths use and POS for deficit correction (the two organisational-based dimensions), and proactive behaviour of strengths use and deficit correction (the two individual-based dimensions). In their study, Van Woerkom et al. (2016) confirm the four-factor structure and reliability of the SUDCO. Other validation studies found similar results (Els, Mostert & Brouwers, 2016; Stander & Mostert, 2013; Theron, Mostert, & De Beer, 2015). A number of these studies also investigated the equivalence and bias of the SUDCO. Van Woerkom et al. (2016) report on the equivalence of the SUDCO for gender and age, while Els, Mostert and Brouwers (2016) only determine the equivalence and bias for two racial groups (Blacks and Whites). Furthermore, Theron, Mostert, and De Beer (2015), investigate only the two individual scales relevant for a sample of first-year students and thus report on the equivalence for two language groups (grouped as West-Germanic and African).

It is important to conduct further research on the SUDCO, based on the evidence that the four dimensions play an important role in predicting work engagement (Botha & Mostert; 2014, Keenan & Mostert, 2012; Stander & Mostert, 2013; Steele, et al., 2012) and burnout (Keenan & Mostert, 2012). Similarly, studies on a positive work environment found improved performance for both individuals and teams (Cameron, Bright, & Caza, 2004; Losada & Heaphy, 2004) as well as leaders (Cameron, 2012). Furthermore, it is also important to determine the bias and equivalence of an instrument in the diverse and multi-lingual context of South Africa. The above-mentioned studies provide promising results for the application of the SUDCO within the South African context. However, there still is a gap regarding investigation of the equivalence and bias for different language groups (focusing specifically on indigenous languages), and to compare the functioning of the SUDCO with other relevant variables (e.g. age, organisational tenure and gender).

### **Research objectives**

General objective of the present study is to examine the Strengths Use and Deficit COrrrection questionnaire for bias and equivalence across the main language groups in a South African bank. This general objective is divided in three specific objectives:

- Validate the SUDCO in a specific working sample of banking employees.

- Examine bias and equivalence of the SUDCO across diverse South African language groups: Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi), and West-Germanic (English and Afrikaans).
- Compare the functioning of the SUDCO within each language group regarding individuals' age, organisational tenure, and gender.

## **LITERATURE REVIEW**

### **Background of the Strengths Use and Deficit COrrrection questionnaire**

Van Woerkom et al. (2016) developed the SUDCO questionnaire, based on the taxonomy discussed above. The first two dimensions, POS for strengths use and for deficit correction, were based on the theory of perceived organisational support. Traditionally, POS has been conceptualised as the generalised beliefs about the extent to which an organisation supports its employees (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger, Fasolo, Davis-LaMastro, 1990). This construct is based on the social exchange theory, which postulates that employees reciprocate their salary and benefits by ensuring productivity and performance, provided they perceive their organisation to support them in turn (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades 2001; Armstrong-Stassen & Ursel, 2009). As a result, employees' form positive or negative perceptions based on the following actions: how an organisation creates meaningful jobs, handle employees who err, and invest in establishing a positive working environment (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Furthermore, employees view their organisation as supportive if individuals are allowed to participate in decision making, deem the rewards system to be fair and are provided training (Allen, Shore, & Griffeth, 2003) which lead to opportunities for self-development and growth (Armstrong-Stassen & Ursel, 2009).

Based on the POS theory, Van Woerkom et al. (2016) developed POS for strengths use in relation to the SBA (or strengths-based approach). This was done by focusing on employees' perception of their organisation's support in using their strengths. According to SBA literature, psychology does not only concerns the studying of pathology and weaknesses, but also of strengths and virtue (Seligman, Parks, & Steen, 2004; Seligman & Csikszentmihalyi, 2014). According to Linley and Harrington (2006), a strength is a natural capacity for behaving,

thinking, or feeling in a way that allows optimal functioning and performance to fulfil one's goals. POS for strengths use, therefore, can be defined as the extent to which employees perceive organisations to support them by utilising their strengths and talents in the workplace. This dimension also shows a strong connection with the theory of strength-based psychological climate, which similarly is described as employees' perceptions of formal and informal practices, processes and procedures regarding their organisational support in the identification and use of strengths (Van Woerkom & Meyers, 2014). Evidence suggests that POS for strengths use is a significant predictor of work-related aspects such as burnout (Keenan & Mostert, 2012), engagement (Keenan & Mostert, 2012; Stander & Mostert, 2013; Van Woerkom, Oerlemans, & Bakker, 2016) and job performance (Van Woerkom & Meyers, 2015).

POS for deficit correction can be defined as the extent to which employees perceive their organisations to support of them in developing or correcting their deficits at work. Organisations apply processes for performance management to identify deficits and adopt interventions at various levels in the organisation. Such organisational input entail on-job learning, training, and coaching to improve performance (Kirkpatrick, 2006; Gilley, Gilley, & Kouider, 2010). In a study by Ellinger (2003) involving four organisations, it was found that organisations' interventions to correct deficits resulted in improved learning, performance, and innovation among employees. The same study also indicated benefits for the organisation such as saving costs, improving systems and sharing knowledge. Similarly, further studies conducted with leaders and employees suggest that working on deficits does improve performance (Longenecker, 2010; Zenger, 2008).

Even though organisations play a significant role to support their employees in strengths use and deficit correction, the individuals also need to be proactive in managing this development themselves. Based on this reasoning, proactive behaviour for strengths use can be defined as the employees' self-starting behaviour aimed at using their strengths in the workplace. Crant (2000) argues that proactive behaviour in the workplace means taking the initiative to improve current circumstances or create new ones by challenging the status quo, rather than passively adapting to present conditions. People who know their strengths, apply it by taking the initiative to improve their environment and build networks (Thompson, 2005). This process leads to higher levels of work engagement (Van Woerkom et al., 2016; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009), increased performance (Corporate Leadership Council, 2002;

Crant, 2000; Thompson, 2005), and an improved state of well-being (Govindji & Linley, 2007).

Proactive behaviour in correcting deficits can be defined as employees' self-starting behaviour to help improve deficiencies in the workplace that may be perceived as hampering performance (Van Woerkom et al., 2016). In performance management, employees' performance is assessed and they receive feedback from their direct reporting line. During this process, employees' areas of development or deficits are identified. Employees who are proactive demonstrate the following behaviour patterns: familiarise them with the expected performance standards; request help from other team members (Torrente, Salanova, Llorens, & Schaufeli, 2012); spend more time practicing or doing on-job training (Ericsson, Nandagopal, & Roring, 2009); and ask for feedback on their performance (Belschak & Den Hartog, 2010; French, Rayner, Rees, & Rumbles, 2011). Findings show that employees' proactive behaviour towards deficit correction also leads to continuous learning (Rowold & Schilling, 2006), increased performance and retention (Stefanyszyn, 2007).

### **Validity of the Strengths Use and Deficit Correction questionnaire**

Van Woerkom et al. (2016) investigated a factorial validity in a sample of 338 South African employees from different industries, and found support for the hypothesised four-factor model. The four-factor structure was again confirmed in a follow-up study with a sample of 361 employees across different industries within the South African context. The scholars further tested and confirmed the convergent and criterion validity with a sample of 133 Dutch engineers. Regarding reliability, they report high Cronbach's alpha coefficients, ranging between  $\alpha = 0.89$  and  $\alpha = 0.95$  for the four dimensions. In a sample of 364 South African sport coaches, Stander and Mostert (2013) also confirmed the four-factor structure. In addition, a study amongst first-year students, focusing only on the two individual dimensions of the SUDCO, confirm a two-factor structure (Theron, Mostert, & De Beer, 2015). The following hypothesis can, therefore be formulated:

*H1:* The SUDCO is a four-factor structure, consisting of POS for strengths use and deficit correction, as well as strengths-use behaviour and deficit-correction behaviour.

### **Assessment within the South African context**

Psychometric assessments are used mainly in recruitment, selection, and placement to secure employment or promotional opportunities. In South Africa, the use of tests for these purposes is highly regulated. In the labour market (including the banking sector) as promulgated in the Employment Equity Act 55 of 1998 (section 8), the use of psychometric assessments is prohibited unless it (a) had been scientifically shown to be valid and reliable; (b) can be applied fairly to all; and (c) is not biased against any employee or group (Department of Labour, 1998). The existence of laws prohibiting discrimination in the workplace does not always guarantee that women, people from different ethnic backgrounds, or those from other segments of the work force, have equal employment opportunities (Deloitte & Touché, 2014). In several cases, information about the quality of assessment is omitted. Psychological development and assessment trends in South Africa are thus important for a comprehensive focus on the misuse of measures. Such misuse entails the following: measuring different groups, investigating test properties, and applying test results without considering the differences in socio-cultural, economic and educational factors (Foxcroft & Roodt, 2009).

Cross-cultural psychology is a research area with extensive expertise in assessing the quality and applicability of tests and test scores. In each cross-cultural study, the question is posed explicitly whether test scores obtained in different cultural groups can be interpreted the same way across these groups (Van De Vijver & Tanzer, 1997). Since the 1970's, this question is known under the heading 'ecological validity'. According to its formal definition, ecological validity is the "extent to which the environment experienced by the subjects in a scientific investigation has the properties it is supposed or assumed to have by the experimenter" (Van De Vijver & Tanzer, 1977, p. 516). Ecological validity refers to the "potential utility of various cues for organisms in their ecology" (Hammond, 1978, p. 8).

Challenges to ecological validity can originate from any source that threatens the regular usage or application of the construct or behaviour under investigation in its natural, everyday environment. Language may be the most important threat to ecological validity, making it difficult for people who are tested to activate the relevant mind-set (Norenzayan & Heine, 2005). South Africa recognises 11 official languages (South African Government, 1996), grouped as follows: West-Germanic (Afrikaans and English), Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), and Sesotho (South Sesotho, Sepedi and Tswana), Tshivenda and Xitsonga (Hanf, Weiland, & Vierdag, 1981; Kotze, 1999). This situation leads to the false attribution of mean scores, deviating from true perceptions or feelings.

### ***Language as cultural reality in studying cross cultural psychology***

The relevance of language to cross-cultural psychology, is that in scientific and anthropological usage, the notion of culture encompasses all that is the result of human creation including intangible objects such as religion, language, customary usages and everyday practices (Prah, 2007). Learning and development in life, school and the workplace, is initially facilitated through culture which also implies linguistic too, and then proceeds to scientific knowledge (Ndhovu, 2013). Language is the main feature of culture in which all social and human activities are transacted and it contributes positively to learning and development (Prah, 2007). In addition, people identify themselves and others through the use of language and thus view their language as a symbol of their social identity (Kramsch, 1998). Consequently, the prohibition of its use, is often perceived by its speakers as rejection of social group and culture, thus language symbolises cultural reality (Kramsch, 1998). Therefore in this study, the variable of language groups consisting of the Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans) is included to investigate bias and equivalence in a South Africa context, as it most closely approximates the variable of culture. In addition, the study was conducted in a bank since it promised to have a large and diverse population who come from all 11 official languages.

### ***Bias and equivalence***

Examination of threats to ecological validity is categorized as bias and equivalence, and includes advanced statistical techniques to determine the impact of either. Analysis of bias and equivalence focuses on different levels or types of biases in which equivalence can be seen as the opposite pole of bias. In other words, when the test scores are equivalent, bias is absent (Van de Vijver & Tanzer, 1997). Three sources of bias can be distinguished, namely those of constructs, methods, and items (Van de Vijver & Leung; 1997; Van de Vijver, 1998).

Firstly, the present study focused on item bias. This type of bias refers to unwanted distractions of a scale at item level (Van de Vijver & Leung, 2011). The main concept linked to item bias is familiarity. Particular words or phrasing within the item may be unfamiliar to the person who are tested, thus leading to a loss of accessibility. People belonging to different cultural groups than the one in which the item was developed, thus may respond consistently dissimilar



(Meiring, Van De Vijver, & Rothmann, 2007; He & Van De Vijver, 2012). Furthermore, the individuals may associate bias with events in the administration of the test, such as the interviewers' characteristics (e.g., gender, cultural group), communication problems (poor use of language by either party) or other procedural aspects when collecting the data (Van De Vijver & Tanzer, 1997; Van de Vijver & Leung, 2011).

The only study in the literature that investigated bias of the SUDCO amongst Blacks and White employees across different companies in South Africa, found no evidence of items that were biased (Els, Mostert, & Brouwers, 2016).

At the opposite end of the scale is construct bias. This form of bias occurs when constructs differ in meaning or interpretation across cultures or language groups (He & Van De Vijver, 2012). The logical underpinning would be that the construct under investigation is not part of universal human functioning, but an invention from within a particular cultural context. In the case of the SUDCO dimensions, strengths use may be an invention from North-West Europe that has no equivalent in South Africa. However, the study of Els and colleagues (2016) showed that there was no evidence of construct bias.

Between the extremes of item and construct bias, lies method bias. This form of bias can emerge due to the research method or weakness in the applied procedure during empirical studies (He & Van De Vijver, 2012). On the other side of the coin, this bias may occur due to cognitive strategies applied by the study participants in more complex performance tasks. As a result, method bias covers the terrain of construct and item bias. However, there are no set techniques to examine method bias (Podsakoff, MacKenzie, & Podsakoff, 2012).

Bias refers particularly to an inventory of threats against the comparability of test scores from different cultures. On the other end of the scale, equivalence is a measure of similar scores and an indication of the differences found within the scores. Score differences do not only consist of mean differences, but also of measurement weights, measurement intercepts, structural means, and measurement residuals. The study of equivalence is a way to address bias, by examining the degree of comparability in all of these four parameters. Weights and intercepts do model item bias. Uniform bias is found in the intercepts: one culture may score consistently higher or lower than another one, irrespective of the true level of the construct. Non-uniform bias is found in significant regression weights of an item on its applicable latent variable; the

effect of culture is different in size for exponents who score high and low (Van de Vijver & Poortinga, 1997).

The two types of item bias can occur simultaneously or separately (Fischer, 2009; Mellenbergh, 1982; Van de Vijver & Leung, 1997). Structural means and measurement residuals serve to model properties of the construct. Combined in a single model, the four parameters distinguish different levels of equivalence.

**Level 1:** construct equivalence or structural equivalence: for each cultural group, the construct has the same underlying dimensions or processes, even when the construct is measured by different instruments across cultures.

**Level 2:** equivalence in measurement units (metric equivalence) means that in addition to having similar underlying dimensions or processes, the intervals between the scores of the scales (e.g. in a thermometer) have the same meaning in each culture. Thus, the psychological meaning of the differences in a score of 1 and 2 is similar in each culture.

**Level 3:** scalar or full score equivalence assumes that in each culture the starting point of the scale is similar; thus in each culture the scales can be juxtaposed, and will completely mirror each other without any deviations (Van De Vijver & Leung, 2011).

Theron, Mostert, and De Beer (2015) measured strengths-use and deficit-correction behaviours for possible structural invariance. In their study, participants were divided into Western Germanic, of 335 students, and African of 443 participants. The behaviour dimensions of strengths use and deficit correction displayed a strong measurement invariance across the Germanic and African language groups. The reason is that seemingly there is no significant difference between metric and configural invariance ( $p = 0.29$ ), scalar and configural invariance ( $p = 0.16$ ), as well as scalar and metric invariance ( $p = 0.16$ ). These results demonstrated that behaviours for strengths use and deficit correction were invariant between the Germanic and African language groups. The study by Els et al. (2016) similarly found high levels of equivalence for the SUDCO for White ( $N = 449$ ) and Black ( $N = 316$ ) employees across different organisations.

It is, therefore, important to demonstrate the absence of bias in the SUDCO. The benefit will

be that any differences in mean scores can be regarded as a true reflection of people's standing on the construct and that scores can be treated as such. Considering this deduction, the following hypotheses can be formulated:

*H2:* The SUDCO items are not biased against any of the Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans) language groups.

*H3:* The SUDCO has the same internal meaning for the Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans) language groups.

### ***Reliability***

Reliability refers to a measure's consistency or stability, where the same assessed results are attainable under different conditions (Foxcroft & Roodt, 2009). Previous studies on the SUDCO that investigated the reliability of the questionnaire, found high Cronbach's alpha coefficients. In a study amongst sport coaches, Stander and Mostert (2013) report the following Cronbach's alpha coefficients: POS for strengths use:  $\alpha = 0.96$ ; POS for deficit correction:  $\alpha = 0.94$ ; strengths-use behaviour:  $\alpha = 0.93$ ; and deficit-correction behaviour:  $\alpha = 0.94$ . Van Woerkom et al. (2016) find similar Cronbach's alpha coefficients: POS for strengths use:  $\alpha = 0.96$ ; POS for deficit correction:  $\alpha = 0.92$ ; strengths-use behaviour:  $\alpha = 0.92$ ; and deficit correction behaviour:  $\alpha = 0.93$ . Based on these findings, the following hypothesis is formulated:

*H4:* The SUDCO is a reliable instrument with Cronbach's alpha coefficients  $\geq 0.70$  for all four dimensions.

### ***Applying mean score differences***

When a construct shows comparability across cultures, there is still sufficient room for individual variation within cultures, particularly for variables of development over people's lifespan. Relations of age and the SUDCO dimensions may be expected to have the same direction in different cultures, but differ in strength. It is a challenge for most organisations to manage the often conflicting views and needs of a diverse workforce, covering a wide range of

generations from the so-called Baby Boomers to Generation X and Generation Y. Organisations who invest in career progression initiatives and offer opportunities for training and development, will be able to attract the most talented young people and retain them for extended periods (PricewaterhouseCoopers, 2011).

Furthermore, leaders face the challenge to manage diverse employees across different ages, generations and gender (Deloitte & Touche, 2014). Access to life opportunities in South Africa is divided according to gender, language, and other dimensions (Keeton, 2014). Women in particular, lag behind in terms of skills development and work opportunities (Deloitte & Touche, 2014; Mateus, Allen-Ile, & Iwu, 2014). Therefore, the present study aimed to determine whether the SUDCO shows meaningful relationships with demographic variables such as age (Hypothesis 5 below) and organisational tenure (Hypothesis 6 below), and whether gender is a critical moderator (Hypothesis 7 below). These aims translate into the following hypotheses:

*H5: Older employees report higher levels of strengths use and deficit correction.*

*H6: Employees who remain longer with the same company report higher levels of strengths use and deficit correction than those who have a shorter stay, irrespective of age.*

*H7: The positive effect of age and organisational tenure is more pronounced for men than for women.*

## **RESEARCH DESIGN**

### **The research approach**

A quantitative study was conducted, through which an electronic questionnaire was administered to collect data from respondents. Quantitative research is a means of gathering inferential statistics and testing an objective theory by examining hypotheses and accepting or rejecting them on the basis of statistical probabilities (Creswell, 2008). Furthermore, a cross-sectional design was used, which implies that the observations in the study sample were made at a single point in time (Salkind, 2005).

## The research method

The section will describe in order the composition of the study sample, the measuring instruments used for the data collection, procedures that were followed to collect the data, and methods and criteria used in the statistical analyses of the data.

### Research participants

Data were gathered from employees in the banking sector ( $N = 658$ ) using convenient sampling. Participants with varying demographic characteristics including race, age, gender, education and language, were sourced across different organisational levels and departments within one major bank. The demographic characteristics relevant for the present study are displayed in Table 1 below.

Table 1

*Characteristics of participants (N = 658).*

Item	Category	Frequency (658)	Percentage (%)
Gender <sup>a</sup>	Male	194	30.74
	Female	463	69.26
	Unknown*	1	0.00
Age (in years)	<25	112	17.02%
	25-34	352	53.50%
	35-44	143	21.73%
	45-54	42	6.38%
	55-60	9	1.37%
Language	Nguni	192	29.22
	Sesotho	174	26.48
	West-Germanic	292	44.29
Organisation tenure	< 1 year	73	11.10
	1 year	123	18.70
	2-3 years	131	19.90
	4-7 years	106	16.10
	8-11 years	120	18.20
	≥12 years	105	16.00
Qualification	Grade 12	127	19.30

Diploma	422	64.10
University degree	109	16.60

<sup>a</sup> For one participant the variable of gender is unknown.

As indicated in Table 1 above, the sample consisted of 463 females (69.26%) and 194 males (30.74%), and one participant did not indicate his/her gender. The youngest employee who participated was 19 years old, with the oldest one 60 years, with a mean age of 31.50 years and the standard deviation of 7.92. Most participants had a high school education (64.10%), while others had post-matric education (16.60%). The majority of the sample came from the West-Germanic (English and Afrikaans) language group (44.29%), followed by the Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati) group (29.22%) and the Sesotho (South Sesotho, Sepedi and Tswana) group (26.48%). In terms of organisational tenure, participants were evenly distributed, with the smallest group of 11.10% employed for less than one year, and the largest group of 19.90% for two to three years. Even though most participants indicated English as their second language, they are proficient in this language since English is considered as an official requirement for business communication within the bank.

## Measuring instruments

A **socio-demographic questionnaire** was administered to determine the biographical characteristics of participants. Questions were posed to determine age, gender, home language, educational qualifications and ethnicity, as well as external dimensions such as current position, job tenure and level of qualification.

The **SUDCO** (Van Woerkom et al., 2016) was used to measure strengths use and deficit correction. The SUDCO consists of four sub-scales, namely: 1) POS for strengths use, including eight items (e.g., “In this organisation, employees can do their jobs in a manner that best suits their strong points”); 2) POS for deficit correction, including eight items (e.g., “This organisation emphasises the development of employees’ weak points”); 3) strengths-use behaviour, measured by nine items (e.g., “I actively look for job tasks I am good at”); and 4) deficit-correction behaviour, measured with eight items (e.g., “In my job, I concentrate on my areas of development”). These four constructs were measured on a 7-point Likert-type scale ranging from 0 (Almost Never) to 6 (Almost Always). Van Woerkom et al. (2016) also found the scales to be reliable, reporting Cronbach’s alpha values regarding POS for strengths use:  $\alpha$

= 0.95; POS for deficit correction:  $\alpha = 0.89$ ; strengths-use behaviour:  $\alpha = 0.90$ ; and deficit-correction behaviour:  $\alpha = 0.90$ .

## **Research procedure**

In order to ensure confidentiality, the research questionnaire was designed as an online survey which stores data on the cloud, where responses could not be accessed any member of the organisation. Access to the response data was thus restricted to the researcher. Permission was obtained from the Group Human Capital (GHC) division of the participating bank to conduct the research within different business units. The GHC division requested that a disclaimer should be stipulated on the questionnaire indicating that the study was not business-related but for academic purposes, to which the researcher duly obliged. In addition, meetings were scheduled with business unit heads to present the study objectives and request permission to conduct the survey in their respective areas. Those business unit heads who agreed then distributed the cover letter with a link that provided access to the online survey to participants to capture responses at a convenient time. On the questionnaire, there was an option for participants to accept or decline participation, thus ensuring participation is voluntary. Participants were also assured of the privacy and confidentiality of their responses. After a week, a reminder was sent to each team respectively.

## **Statistical analyses**

The statistical analyses were conducted using a Statistical Package for Social Science (SPSS) Version 22 (SPSS Inc., 2011) and Analyses of Moment Structures (AMOS) Version 22 (Arbuckle, 2013). Interpretation of the results adopted both descriptive and inferential statistics (Arbuckle, 2013).

Before analysing the applicability of the SUDCO items across the three language groups in the sample, preliminary analyses were done to establish the number of dimensions underlying the SUDCO. Analyses were conducted in AMOS, comparing the relative fit of four distinct models: the hypothesised four-factor model; a one-factor model; a model with one person-oriented factor and one organisation-oriented factor; and a model with one strengths-use factor and one deficit-correction factor. Overall, fit of the four models was assessed according to the basic statistical and goodness-of-fit indices. Subsequently, fit of the competing models was

examined relative to the hypothesised four-factor model. Fit is based on the Chi-square ( $\chi^2$ ) statistic and the goodness-of-fit indices, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI) and Standardised Root Mean Square Residual (SRMR), which are evaluated according to their cut-off criteria. The acceptable model fit for indices was evaluated as follows: RMSEA is acceptable below 0.06 and excellent below 0.04; CFI is acceptable above 0.90 and excellent above 0.95 (He & Van der Vijver, 2012); SRMR values less than 0.08 are generally considered an acceptable fit (Hu & Bentler, 1999). These indices provided a measure to determine whether the theoretical model fit the data.

The present study utilised recent developments to test item bias and construct equivalence in a single multi-group model in AMOS. A multi-group confirmatory factor analysis (CFA) was conducted to compare the fit of the SUDCO directly and simultaneously across the three language groups. CFA is the technique employed most frequently when assessing structural equivalence (He & Van der Vijver, 2012; Meiring, Van De Vijver, & Rothmann, 2007). Firstly, the main reason for selecting CFA is that according to this technique, models are theoretical, which allows the researcher to specify assumptions. Secondly, CFA is statistically more conservative, making it more difficult to reach statistical significance. In other words, when a model is confirmed the researcher can be more confident. Thirdly, in any confirmatory path model all the weights are adjusted to each other to create the best fit, in contrast with EFA, which does not provide this fit.

Practically within CFA, item bias and construct equivalence refer to different parameters in the model. These are measurement weights and intercepts, structural means, and measurement residuals. By using models that are nested (i.e. share most parameters, but systematically vary once off), their relative fit across cultures could be determined precisely. Again, fit of the models was assessed with the basic statistical and goodness-of-fit indices.

Descriptive data were analysed using the means, standard deviations, reliability, and the range (Tredoux & Durrheim, 2008) to determine scale functioning. In order to assess the reliability of the SUDCO, Cronbach's alpha coefficient of  $\geq 0.70$  was considered as acceptable (Nunnally & Bernstein, 1994).

SPSS was also used to conduct a series of regression analyses, with the four SUDCO scales' means as the dependent variables, and age and organisational tenure as the independent



variables. In order to compare the two genders and three language groups, the analyses were conducted separately in terms of split-groups: by gender (two groups), by language (three groups), and by combining gender and language (six groups). Significance of the coefficients and explained proportions of variance were determined by  $p$  values smaller than 0.05 or 0.01.

## RESULTS

The results section follows a strict systematic order. Firstly, the analyses are given of the number of factors in the SUDCO (Hypothesis 1). Secondly, the results are reported of the multi-group analyses of the SUDCO in the three language groups, to assess item bias and construct equivalence (Hypotheses 2 and 3). Thirdly, the reliability is reported of the SUDCO scales and the relations of the SUDCO mean scores regarding age, organisational tenure, and gender, and language group (Hypotheses 4-7).

### Factorial validity

In order to ensure the factorial validity of the internal structures of the SUDCO, four competing models were tested.

**Model 1:** the hypothesised four-factor model consisting of four sub-scales: POS for strengths use (specified as a first factor with eight items); POS for deficit correction (specified as a second factor with eight items); strengths-use behaviour (specified as a third factor with nine items); deficit-correction behaviour (specified as a fourth factor with eight items).

**Model 2:** items of all four sub-scales of POS for strengths use, POS for deficit correction, strengths-use behaviour, and deficit-correction behaviour.

**Model 3:** organisational factors (POS for strengths use and POS for deficit correction) loaded onto one factor and individual behaviour (strengths-use behaviour and deficit-correction behaviour) loaded on one factor.

**Model 4:** another two-factor model, comprising strengths-use variables (POS for strengths use and strengths-use behaviour) and deficit-correction variables (POS for deficit correction and deficit-correction behaviours).

Table 2 below shows the fit of the four models that were tested.

Table 2

*Results of the competing measurement models.*

Model	$\chi^2$	df	<i>p</i>	$\chi^2/df$	$\Delta \chi^2$	$\Delta df$	$\Delta \chi^2/\Delta df$	CFI	RMSEA	SRMR
1 Model 1	1576.05	489	0.00	3.22	baseline	baseline	baseline	0.94	0.06	0.04
2 Model 2	8236.81	495	0.00	16.64	6660.76	6	1110.13	0.59	0.15	0.14
3 Model 3	3719.77	494	0.00	7.53	2143.72	5	783.95	0.83	1.00	0.06
4 Model 4	7353.71	494	0.00	14.89	5777.66	5	1155.53	0.64	0.14	0.15

$\chi^2$  = chi-square; *df* = degrees of freedom; *p* = statistical significance; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardised root mean square residual

When reviewing the results for the various models of the SUDCO scales, Model 2 (one-factor model) compared significantly worse to the baseline model (M1) (M2vs.M1:  $\Delta \chi^2 = 6660.76$ ,  $\Delta df = 6$ ,  $p \leq 0,001$ ). In comparing the alternative Model 3 (two factors, organisational and individual behaviour scales) to the baseline Model 1 (four factors, POS for strengths use, POS for deficit correction, strengths-use behaviour and deficit-correction behaviour), the fit of this alternative model was favourable compared to Model 3, but still not stronger than that of the baseline Model 1 (M3 vs.M1:  $\Delta \chi^2 = 2143.72$ ,  $\Delta df = 5$ ,  $p \leq 0,001$ ). The finally tested Model 4 (two factors strengths and deficits scales) was also compared with the baseline Model 1, which proved a worse fit for data compared to Model 3 as well as baseline model (M4 vs.M1:  $\Delta \chi^2 = 7353.71$ ,  $\Delta df = 5$ ,  $p \leq 0,001$ ). Based on the findings from Table 2 above, it is evident that the baseline model (Hypothesised model), fitted the data the best, compared to other models ( $\chi^2 = 1576.05$ ; *df* = 489,  $\chi^2/df = 3.22$ ,  $p = .00$ ; CFI = .094; RMSEA = 0.06; SRMR = .04). Model 1 showed acceptable model fit as RMSEA < 0.06, CFI values were close to 0.90 (He & Van der Vijver, 2012) and SRMR values were below 0.08 (Hu & Bentler, 1999). These findings support Hypothesis 1.

Table 3 below indicates factorial loadings for the items of SUDCO.

Table 3

*Standardised factor loadings of the SUDCO items on the four latent variables.*

Construct	Item	Loading
<i>Perceived Organisational Support for Strengths Use (POSSU)</i>		
This organisation uses employees' strengths	POSSU1	0.73
In this organisation, employees can do their jobs in a manner that best suits their strong points	POSSU2	0.72

In this organisation, employees can do their jobs in a manner that best suits their strong points	POSSU3	0.83
In this organisation, people can use their talents	POSSU4	0.82
In this organisation, people's job tasks are aligned with their strengths	POSSU5	0.86
This organisation makes the most of people's talents	POSSU6	0.86
This organisation ensures that people can apply their strong points in their jobs	POSSU7	0.87
This organisation focuses on what people are good at	POSSU8	0.86
<b><i>Perceived Organisational Support for Deficit Correction (POS DI)</i></b>		
This organisation emphasises the development of employees' weak points	POS DI1	0.77
In this organisation, employees receive training to improve their weak points	POS DI2	0.81
This organisation focuses on people's areas of development	POS DI3	0.85
In this organisation, people are required to work on their shortcomings	POS DI4	0.75
In this organisation, development plans are aimed to better people's weaknesses	POS DI5	0.86
In this organisation, people are expected to improve the things they are not good at	POS DI6	0.72
In this organisation, performance appraisals address people's areas of development	POS DI7	0.71
In this organisation, employees receive feedback regarding their limitations	POS DI8	0.72
<b><i>Strengths-use Behaviour (SUB)</i></b>		
I actively look for job tasks I am good at	SUB1	0.64
I use my strengths at work	SUB2	0.80
In my job, I try to apply my talents as much as possible	SUB3	0.78
I organise my job to suit my strong points	SUB4	0.82
I draw on my talents in the workplace	SUB5	0.80
<b>Table 3 continued</b>		
At work, I focus on the things I do well	SUB6	0.64
In my job, I make the most of my strong points	SUB7	0.78
I capitalise on my strengths at work	SUB8	0.84
I seek opportunities to do my work in a manner that best suits my strong points	SUB9	0.74
<b><i>Deficit-correction Behaviour (DCB)</i></b>		
In my job, I concentrate on my areas of development	DCB1	0.79
At work, I focus on developing the things I struggle with	DCB2	0.82
I engage in activities to develop my weak points at work	DCB3	0.80
In my job, I work on my shortcomings	DCB4	0.76
At work, I seek training opportunities to improve my weaknesses	DCB5	0.70
I reflect on how I can improve the things in my job I am not good at	DCB6	0.79
In my job, I make an effort to improve my limitations	DCB7	0.81
At work, I seek feedback regarding my areas of development	DCB8	0.73

Table 3 above shows the factor loadings for the latent variables. Factor loading on all items proved to be statistically significant ranging from 0.64 to 0.87. Regarding POS for strengths

use, the smallest loading was for the following item: “In this organisation, employees can do their jobs in a manner that best suits their strong points,” with a loading of 0.72, and the highest loading was for the following item: “This organisation ensures that people can apply their strong points in their jobs,” with a loading of 0.87. With regard to POS for deficit correcting, the smallest loading was for the following item: “In this organisation, performance appraisals address people’s areas of development,” with a loading of 0.71, and the highest loading was for the item: “In this organisation, development plans are aimed to better people’s weaknesses,” with a loading of 0.86. For strengths-use behaviour, the smallest loading was for the item: “I actively look for job tasks I am good at,” with a loading of 0.64, and the highest loading was for the item: “I capitalise on my strengths at work,” with a loading of 0.84. Finally, for deficit-correction behaviour the smallest loading was for the item: “At work, I seek training opportunities to improve my weaknesses,” with a loading of 0.70, and the highest loading was for the item: “In my job, I make an effort to improve my limitations,” with a loading of 0.81.

Table 4

*Fit indices of the multi-group confirmatory factor-analysis across language groups.*

<b>Model</b>	<b><math>\chi^2</math></b>	<b>df</b>	<b>p</b>	<b><math>\chi^2/df</math></b>	<b>CFI</b>	<b>RMSEA</b>	<b>SRMR</b>
Model 0	3033.77	1467	0.00	2.07	0.92	0.04	0.05
Model 1	3088.20	1525	0.00	2.03	0.92	0.04	0.05
Model 2	3169.13	1591	0.00	1.99	0.92	0.04	0.05
Model 3	3169.13	1591	0.00	1.99	0.92	0.04	0.05
Model 4	3429.02	1657	0.00	2.07	0.92	0.04	0.06

Note: Degrees of freedom (df), statistical significance (p), comparative fit index (CFI); root mean square error of approximation (RMSEA), standardised root mean square residual (SRMR).

### **Item bias and structural equivalence**

Item bias and structural equivalence were tested to determine whether the SUDCO can be used across the three language groups. The fit-indices of the multi-group CFA across the language groups are reported in Table 4 above.

Table 4 compares the application of the model across the three language groups. In CFA, the theoretical model was investigated to ascertain whether it fits the data. Model 0 includes all four parameters where none of the parameters are constrained. In Model 1, only the weights are constrained, while in Model 2, parameters are constrained for weights and intercepts. In

Model 3, parameters are constrained for weights, intercepts and structural means, while in Model 4, parameters for residuals, weights, intercepts and structural means are constrained. All four models thus fitted the data well, with the best fitting one being Model 3 ( $\chi^2 = 3169.13$ ;  $df = 1591$ ;  $\chi^2/df = 1.99$ ;  $p = .00$ ;  $CFI = 0.92$ ,  $RMSEA = 0.04$ ,  $SRMR = 0.05$ ). Even though Model 4 did not show the best fit, this is not a problem as literature indicates that residuals do not have to be the same. In addition, the literature suggests that this is the most vigorous and adaptable approach to test invariance (Steenkamp & Baumgartner, 1998). These results thus offer evidence for Hypothesis 2 and 3, indicating that the SUDCO items are not biased against any of the Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans) language groups. It was found that the SUDCO functions similarly for the three language groups.

### Descriptive statistics

The results indicated that items are consistent with acceptable Cronbach's alpha coefficients regarding POS for strengths use ( $\alpha = 0.94$ ); POS for deficit correction ( $\alpha = 0.94$ ); strengths-use behaviour ( $\alpha = 0.93$ ); and deficit-correction behaviour ( $\alpha = 0.93$ ). These are acceptable as the coefficient closer to 1 is considered as a true score (Struwig & Stead, 2007). These findings support Hypothesis 4.

The descriptive statistics reflecting minimums, maximums, means and standard deviations regarding the SUDCO scales for the sample of Nguni, Sesotho and West-Germanic language groups are displayed in Table 5 below.

Table 5

*Descriptive statistics for SUDCO subscales in the three language groups.*

Language groups	Factors	Minimum	Maximum	Mean	SD
Nguni	POS for strengths use	1.00	7.00	3.83	1.53
	POS for deficit correction	1.00	7.00	4.34	1.47
	Strengths-use behaviour	1.00	7.00	5.37	1.23
	Deficit-correction behaviour	1.13	7.00	5.41	1.20
West-Germanic	POS for strengths use	1.13	7.00	4.09	1.57

	POS for deficit correction	1.00	7.00	4.63	1.54
	Strengths-use behaviour	1.89	7.00	5.61	1.17
	Deficit-correction behaviour	1.38	7.00	5.58	1.14
Sesotho	POS for strengths use	1.00	7.00	3.93	1.63
	POS for deficit correction	1.50	7.00	4.49	1.57
	Strengths-use behaviour	2.56	7.00	5.51	1.18
	Deficit-correction behaviour	2.13	7.00	5.60	1.25

In Table 5 above, the outer left column presents the three groups with separate entries for each scale per group. Presented in the table are the minimum and maximum scores, plus in the last two columns the means and standard deviations. When examining the scores, the following findings emerge: while the West-Germanic group shows generally higher scores on all four scales, within each group the four scales show more or less the same pattern. In other words, the two behaviour scales show consistently higher mean scores than the two POS scales. This pattern indicates homogeneity in scores of the Nguni, Sesotho and West-Germanic groups in relation to the SUDCO scales.

### **Applying the SUDCO across cultures**

In the present study, comparability and equal functioning of the four SUDCO scales were established for the three mentioned language groups. Thereafter, a series of regression analyses were done to apply the four scales to organisational parameters, in this case, age and organisational tenure. For each regression analysis, one of the SUDCO scale means was chosen as dependent variable, and age and organisational tenure as the independent variables. The dependent variables were entered in a stepwise fashion: first step, age and second step, organisational tenure. High correlation might be expected between the two dependent variables; therefore, this procedure allows the independent estimation of each variable's effect. In order to compare the two genders and three language groups, the analyses were done separately for a split-group focus: by gender (two groups), language (three groups), and the combination of gender and language (six groups). The results for all of the regression analyses can be seen in Table 6 below.

Table 6

*SUDCO scale behaviour: Reliabilities and regression results with age, organisational tenure, gender, and language group.*

		POSSU		POS DI		SUB		DCB	
		$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$B$	$\Delta R^2$
Age		0.12	0.02**	-0.01	0.00	0.13	0.02**	-0.02	0.00
	Male	-0.04	.00	-0.15	0.02*	0.08	0.01	-0.07	0.01
	Nguni	0.08	.01	-0.08	0.01	0.01	0.00	0.07	0.00
	W-Germ	-0.03	.00	-0.13	0.02	0.13	0.02	-0.16	0.02
	Sesotho	-0.09	.00	-0.19	0.03	0.05	0.00	-0.01	0.00
	Female	0.18	.03**	0.04	0.00	0.15	0.02**	-0.01	0.00
	Nguni	0.09	0.01	-0.10	0.01	0.07	0.01	-0.09	0.01
	W-Germ	0.20	0.04**	0.05	0.00	0.15	0.02*	-0.02	0.00
	Sesotho	0.23	0.05*	0.12	0.01	0.20	0.04*	0.04	0.00
OrgTenure <sup>a</sup>		0.06	0.00	0.05	0.00	0.15	0.01*	0.04	0.00
	Male	0.06	0.00	0.05	0.00	0.15	0.01*	0.04	0.00
	Nguni	-0.33	0.06	-0.34	0.06	-0.10	0.01	-0.12	0.01
	W-Germ	-0.15	0.01	0.06	0.00	0.09	0.00	-0.01	0.00
	Sesotho	0.07	0.00	0.01	0.00	0.46	0.09*	0.23	0.02
	Female	0.06	0.00	0.05	0.00	0.15	0.01*	0.04	0.00
	Nguni	0.15	0.01	0.01	0.00	0.19	0.02	0.24	0.03
	W-Germ	0.14	0.01	0.05	0.00	0.11	0.00	-0.12	0.01
	Sesotho	-0.19	0.01	-0.05	0.00	0.25	0.02	0.07	0.00

<sup>a</sup> Corrected for effect of age: By means of a stepwise procedure the effect of age is removed from that of organisational tenure, thus showing true effects of each

\*  $p < 0.05$ . \*\*  $p < 0.01$

In Table 6 above, the effects per group clearly are split. The first block shows the effects of age: the main effect for the entire sample, the effect of age for males and for females, as well as for Nguni males, West-Germanic males, et cetera. The second block follows the same outline for organisational tenure, with the findings split into main effects and effects per gender and language group. The findings show that the effects of age are confined mostly to strengths and to females, both regarding POS and behaviour. The largest effects in this case are  $\beta = 0.23$ ,  $p < 0.01$  for POS strengths use and  $\beta = 0.20$ ,  $p < 0.01$  for strengths-use behaviour in Sesotho women, with West Germanic women showing slightly smaller effects than the Sesotho women. Males only show a significant main effect for POS deficit correction,  $\beta = -0.15$ ,  $p < 0.05$ .

Regarding organisational tenure, the effect of age is eliminated through stepwise regression procedure (with age as the first step and organisational tenure the second step). The only significant effects in this case were found for strengths-use behaviour, both males and females showing a main effect ( $\beta = -0.15, p < 0.05$  and  $\beta = -0.15, p < 0.05$ , respectively). While Sesotho males and females showed high coefficients (0.46 and 0.25) for organisational tenure in relation to strengths-use behaviour, this effect only reached significance for the males ( $p < 0.05$ ).

Taken as a whole, the three language groups thus show important and rather consistent functioning in terms of SUDCO scales, with two scales indicating only limited effects, and two other scales moderate effects, thus giving partial support to Hypotheses 5, 6 and 7. The results emphasise the relevance of a positive psychology for personal development, where the effects for strengths are persistently higher than for deficits.

## **DISCUSSION**

The present study argues for a balanced and comprehensive approach to positive psychology, one which focuses on developing strengths and correcting deficits, at the level of both the organisation and of individual employees. This shift towards a balanced approach in the behaviour of personnel and the organisation (Seligman, 2002; Rust, Diessner, & Reade, 2009) led to the development of the SUDCO (Van Woerkom et al., 2016). Therefore, as indicated previously, the objectives of the present study was to validate the SUDCO in a specific working sample of banking employees. This was done by examining bias and equivalence of the SUDCO across the diverse language groups: Nguni, Sesotho, and West-Germanic. Thereafter, the study compared the functioning of the SUDCO within each language group regarding the variables of age, organisational tenure, and gender.

The study commenced by validating the factor structure of the SUDCO (Hypothesis 1), in comparing the hypothesised four-factor model with competing models. The following models were tested:

1. the four-factor model (POS for strengths use, POS for deficit correction, strengths-use behaviour and deficit-correction behaviour);
2. a one-factor model (all items of the subscales grouped under one dimension);



3. a two-factor model (the dimensions combined for both the organisation and the individual employees); and
4. another two-factor model in which the two strengths (organisational and individual) scales combined and the two deficit (organisational and individual) scales combined.

The analyses indicated that the hypothesised four-factor model provides a significantly better fit based on the fit indices and information criteria. These results are consistent with the research findings of previous studies (Els, Mostert, & Brouwers, 2017; Stander & Mostert, 2013; Van Woerkom et al., 2016).

Cross-cultural psychology investigates whether cultural differences may cause differences in behaviour and whether similarities can be found in psychological behaviour across cultures (De Klerk, 2008). Thus, in cross-cultural studies and psychometric assessments, the taxonomies of bias and equivalence are significant since it provide a theoretical framework to validate these requirements (Van de Vijver, 1998; Van de Vijver & Tanzer 2004; Van de Vijver & Leung, 2011). In order to measure bias and consistency in meaning, the present study investigated whether the theoretical model as a whole was consistent with the data sample from the population of the three language groups. The best fitting model was found to be Model 3, indicating that the instrument has the same internal meaning and also has no evidence that its items are biased across the three mentioned language groups (Nguni, Sesotho, and West-Germanic – Hypothesis 2 and 3). These findings are also congruent with those of Els, Mostert, and Brouwers (2016), and Theron, Mostert, and De Beer (2015), who investigated bias and equivalence of the SUDCO on racial groups (Blacks and Whites) and language groups (West-Germanic and African).

The following objective (Hypothesis 4) was to determine whether the SUDCO scales are reliable by using Cronbach's alpha coefficients. The results indicated that the SUDCO is a consistent measure with Cronbach's alpha coefficients ranging between  $\alpha = 0.93$  and  $\alpha = 0.94$  for the different subscales. These results show that the SUDCO items will consistently measure the extent to which the bank is perceived to offer its employees organisational support for strengths use and deficit correction. In addition, these scales will measure consistently how the bank employees themselves behave or take the initiative in using their strengths or correcting their deficits. Similarly, Van Woerkom et al. (2016) and Stander and Mostert confirm Cronbach's alpha coefficients ranging between  $\alpha = 0.89$  and  $\alpha = 0.95$  for the four subscales.

Thereafter, the study aimed to determine whether the SUDCO showed meaningful relationships with demographic variables such as age (Hypothesis 5) and organisational tenure (Hypothesis 6) in each of the gender, language, and gender by language groups. For this aim, a series of regression analyses were conducted. These analyses show that for women, older age and longer organizational tenure stronger relate to strength development, and than both perceptions of support and actual behaviour (Hypothesis 7). The age variable, and organizational tenure with that, may include a substantial social component. For one, shift in work force composition after apartheid to include more women may underlie a social differentiation between older and younger women. Furthermore, social and psychological meaning construction for X and Y generations and millennials may substantial differ, particularly what is expected from society, government, and organizational management

Linley, Joseph, Harrington, and Wood (2006) argue for the significance of positive psychology to ensure relevance and alignment to other areas of psychology and across disciplines. Consequently, the main contribution of the present study to the body of knowledge in the field of psychology is linking the following fields: positive psychology to cross-cultural psychology, organisational psychology and psychological assessments. Literature provided limited information on positive psychology as it is focused on positive subjective experiences and positive individual experiences, but not on positive organisations (Gable & Haidt, 2005). Essentially, the present research also responds to the renaissance of positive psychology, as a field that is not limited to the development of strengths, but finding the balance between both strengths and weaknesses (Seligman, Parks, & Steen, 2004; Kaiser & White, 2008). In addition to strategies that organisations may employ to develop strengths and weaknesses, it is also essential that employees manage these aspects proactively. Furthermore, no evidence was found in the literature of measures that could measure strengths and weaknesses collectively.

This study thus contributes positively to the cultural diversity policies of the South African context, where fair and legal application of psychometric assessments in the workplace are obligatory. Since South Africa has eleven official language groups, it is suggested that future research should assess the bias and equivalence of the SUDCO with representatives of the respective language groups (Els, Mostert, & Brouwers, 2016). Furthermore, research attempting to measure invariance on language groups based only on individual scales, strengths-use behaviour and deficit-correction behaviour, was inconclusive due to inadequate

representation (Theron, Mostert, & De Beer, 2015). Therefore, the present study has dealt with these gaps in the literature, seeing that the researcher established bias and equivalence based on a sample of the three mentioned South African language groups.

One of the critical questions for the present research was whether the SUDCO has four dimensions (POS for strengths use, POS for deficit correction, strengths-use behaviour and deficit-correction behaviour). The results indicate favourable findings of a four-factor structure. In addition, another critical question was whether the SUDCO complies with the Employment Equity Act 55 of 1998 (Department of Labour, 1998). The research findings did not find significant bias; hence the results are favourable for the equitable use of this instrument in a multi-lingual and multi-cultural context in South Africa.

### **Limitations and recommendations**

Although the present study does contribute to the field of psychology, certain limitations were noted, which are discussed subsequently.

Firstly, the study focused on employees in the banking sector, where the population consists of employees with a minimum education of Grade 12. However, the South African employment landscape comprises employees from differentiated education levels, and consequently socio-economic levels, who are thus motivated by different factors. It is well documented that employees in the blue-collar sector need to make their ends meet (according to Maslow's hierarchy of needs) and are therefore predominantly motivated by remuneration, rather than personal development (Pink, 2010). On the other hand, employees with tasks involving cognitive skills, decision-making and creativity, are more motivated to develop themselves in terms of strengths and unique work-related traits (Pink, 2010). It is thus recommended that future research focuses on bias with a sample of a diverse population, which includes people from the different sectors of the economy.

Secondly, while the findings on bias and equivalence are favourable, a limitation was noted on the effects for the dimensions of POS for deficit correction and deficit-correction behaviour. These two scales did not show significant coefficients for age and organisational tenure. While this finding could potentially be an important contribution to the literature, it may also reflect a characteristic of the small sample size: too small to have sufficient power for fruitful testing

of significance. However, the two strengths scales do reach significance in the same samples, which suggests that non-significance does reflect the true relationships in the population. Nevertheless, to eliminate concerns about the power of statistical testing, future studies may employ larger sample sizes, just to make sure.

Thirdly, companies have to attend with the influx of people with diverse cultural profiles from the rural areas to the cities, as well as the educational and business systems that encourage the use of English. As a result, certain employees were not clear on what constitutes a home language and asked whether they were allowed to select more than one language. Future cross-cultural studies thus need to define how the population can be categorised into different languages, whether for the business environment, a home dialect, or language based on the parental line or ethnicity, in order to make meaningful inferences. Therefore, 'language' needs to be defined in the cross-cultural context, for future studies that plan to investigate equivalence based on language groups.

Fourthly, the present study employed a cross-sectional design, where observations were made of a particular group at a specific period. In order to ensure equitable use of SUDCO, researchers may consider studies on predictive bias. This is based on the premise that any given score on the predictor should result in a similar level of performance for all study participants irrespective of their group membership (Kuncel & Klieger, 2012). Thus, people from a specific ethnic group (e.g. West-Germanic) who share similar characteristics (e.g. obtained the same rating in the job interview), should perform comparably (not necessarily equally) regardless of group membership.

Finally, in the cross-sectional design, observations were thus made at specific period. Since this instrument is relatively new in the industry, to date, no documented longitudinal studies are related to this instrument. Longitudinal studies observe the same group of people or same measure over an extended period (Goodwin, 2010). This help researchers identify changes in the variables of the sample at both individual and group level.

### **Practical implications**

The present research's findings have clear practical implications. Employees within the bank are exposed to management feedback, which traditionally focuses on performance management

aimed at correcting deficits. These findings can empower employees with the knowledge and value of using a balanced approach, SBA's self-development initiatives. The value of adopting SBA is that employees become aware of their strengths, which increases their motivation and improve their performance in the work place.

From a practical point of view, demonstrating that strengths use can yield performance benefits, provide leaders and organisations the tools to manage employees' performance and thereby make the organisation more effective (Kong & Violet, 2016). In line with findings by Gallup (2013), the present research showed the benefits of investing in employees' selection, strengths, and well-being. Such investment may boost the results that companies would receive from increasing its engagement alone. In this regard, the study help organisations' understand their employees' strengths and deficits. This insight will guide companies in attracting, retaining and developing talent. In turn, this increases engagement, well-being, productivity and maintains the bottom line. The study further contributes to literature in this field, as the numerous studies focus on either a strength-based approach or deficit improvement. There is a gap in literature and instruments that provide a balanced approach, which measures both strengths use and deficit correction in the same study.

Furthermore, the significance of the present study is pivotal, by ensuring the principles of fairness, inclusivity and equity are observed in organisation (Foxcroft & Roodt, 2009; Robbins, Judge, Odendaal, & Roodt, 2009). The research contributes to the organisational psychology profession by aiming to validate reliability, bias and structural equivalence of the instrument. The research findings will provide evidence, which may be relevant for the accreditation of SUDCO as a legally recognised psychological instrument to be applied in a South African context.

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## **CHAPTER 3**

### **CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS**

Chapter 3 as the final chapter of the present study, draws meaningful inferences from the study's objectives and the results presented in the preceding Chapters 1 and 2. Certain limitations of the study are pointed out. Finally, recommendations are made, particularly for organisations and future research on the specific research problem.

#### **3.1 CONCLUSION**

Research has indicated that in relation to Africa and the world, South Africa has the highest levels of disengaged employees (Gallup, 2013). In a favourable response to this situation, Brim and Asplundh (2009) suggest that positive psychology, particularly the strengths-based approach (SBA), reduces employees' work disengagement significantly. SBA is about managing employees' talents as unique assets to the company (Hodges & Clifton, 2004). As a result, organisations have begun considering the potential benefits of incorporating positive psychological principles to enhance work engagement and maximise profits (Mills, Fleck, & Kozikowski, 2013).

In this regard, different measuring instruments were found in the literature, including those that focus on individual strengths. These instruments are the Personal Growth Initiative Scale (PGIS) (Robitschek, 1998), Proactive Personality Scale (Bateman & Crant, 1993), and Strength Use Scale (Govindji & Linley, 2007). At organisational level, traditional measuring instruments of SBA were found to include the following: Gallup Strengths Finder of Clifton and Harter (2003), Values in Action (VIA) (Linley, et al., 2007), Strengthspotting Scale (Linley, et al., 2010), and recently, the Strengths-based Psychological Climate Scale (Van Woerkom & Meyers, 2015). These measuring instruments provide exceptionally valuable insights, yet a narrow approach to positive psychology. Each of these instruments focus on some aspect of measuring SBA, tailored towards strengths only, either individual or organisations, while positive psychology focuses on striking the balance between both strengths and weaknesses (Linley, Joseph, Harrington, & Wood, 2006; Seligman & Csikszentmihalyi, 2014). In addition, with the exception of the Strength-based Climate

questionnaire, none of these instruments have been adapted to the South African context. In order to bridge these gaps, Van Woerkom et al. (2016) developed the SUDCO.

### **First research objective**

The first objective of the present study was to determine how POS for strengths use, POS for deficit correction, strengths use behaviour and deficit correction behaviour are conceptualised in the literature. POS for strengths use is defined as the extent to which employees perceive their organisation to support them by utilising their strengths and talents in the workplace (Van Woerkom et al., 2016). Based on a wide range of research, findings show that the key to the success of employees and organisations lies in identifying individuals' unique strengths and building on it to achieve the company's full potential (Gallup, 2013). Thus, successful managers are investing in learning about their employees' strengths and managing with those unique talents in mind. This notion also underpins strengths-based development and positive psychology approaches (Hodges & Clifton, 2004).

Various studies support the significance and value of the strengths-based approach in the workplace (Seligman et al., 2005). Adopting the SBA in the workplace, correlates positively with the following benefits: work satisfaction (Ruch, Furrer, & Huwyler, 2004), performance (Clifton & Harter, 2003; Tombaugh, 2005), work engagement (Clifton & Harter, 2003), psychological capital (Meyer & Van Woerkom, 2016) and leaders-member relationships (Els, Viljoen, De Beer, & Brand-Labuschagne, 2016).

Positive psychology does not reject the correction of weaknesses. Therefore, Van Woerkom et al., (2016) developed the second dimension, POS for deficit correction. This dimension can be defined as the extent to which employees perceive their organisations to support them by developing or correcting their deficits at work. Although maximising the financial bottom line is crucial for organisations, the most successful companies also seek to enhance their employees' work experiences (Deloitte & Touché, 2014; Mills, Fleck, & Kozikowski, 2013). As a result, organisations adopt performance management systems to improve employees' weaknesses and drive performance improvements (Henry, 2004; Robison, 2007, Cravens, Oliver, & Stewart, 2010). In addition, organisations apply psychological wellness interventions for stress management (including physical health assessments, counselling) (Baicker, Cutler, & Song, 2010; Goetzel, et al., 2014). Favourably, a growing body of empirical evidence

indicates that the organisation's focus on correcting weaknesses is valuable because it leads to improved performance (Longenecker, 2010; Zenger, 2008), learning and innovation (Ellinger, 2003).

However, it is insufficient when only organisations take the responsibility to support employees by utilising their strengths and correcting their weaknesses. Individual employees themselves also need to present forms of self-starting behaviour in this regard (Belschak, 2010). The third dimension of the SUDCO, therefore, focuses on the strengths-use behaviour, which is conceptualised as the employees' proactive behaviour in developing their strengths. Strengths use behaviour can be directed at changing the individual's self (training, coaching, on-the-job training) or the environment (seeking feedback, suggestions for improvements) (Belschak, 2010). Proactive behaviour through strengths use improves employees' work engagement (Salanova & Schaufeli, 2005) and job performance, as well as the customers' loyalty (Salanova, Agut, & Peiró, 2005).

The fourth dimension of the SUDCO entails deficit correction behaviour, which is defined as those self-starting behaviour patterns to improve deficits in the workplace. SBA argues that employers should not avoid negative feedback but constrain its size and frequency it to ensure prevention and promote learning (Bouskila-Yam & Kluger, 2011). When employees take the initiative themselves to correct their weaknesses, this results in continuous learning, growth and career development (Rowold & Schilling, 2006). In addition, correcting deficits does improve performance and increases employees' tenure (Stefanyszyn, 2007).

## **Second research objective**

The second objective was to investigate whether the SUDCO has four factors consisting of POS for strengths use, POS for deficit correction, strengths use behaviour and deficit correction behaviour. Before undertaking the investigation on invariance, the present study began by confirming the dimensions of the SUDCO. During the development of this instrument, Van Woerkom et al. (2016) established that SUDCO has four dimensions, namely POS for strengths use, POS for deficit correction, strengths use behaviour and deficit correction behaviour. Using AMOS, statistical software for the testing of theory-based path models, analyses were done by comparing the relative fit of four distinct models: the hypothesised four-factor model; a one-factor model; a model with one person-oriented factor and one organisation-oriented factor;



and a model with one strengths and one deficit factor. Regarding Hypothesis 2, the results indicated that the four-factor model best fitted the data, which made the findings consistent with those of Van Woerkom et al. (2016). These findings were also confirmed by Stander and Mostert (2013) and Els, Mostert, and Brouwers (2016). In addition, Theron, Mostert, and De Beer (2015) adapted the two individual measures of strengths-use behaviour and deficit-correction behaviour in a sample of first-year employees, and confirmed a two-factor structure.

### **Third and fourth research objectives**

The third objective of the present research was to investigate whether items of the SUDCO are biased across the language groups: Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans). Linked to this, the fourth objective of the study was to investigate whether SUDCO has the same internal meaning (structural equivalence) for the mentioned language groups. The themes of fairness, equity, diversity and inclusivity are critical as well as significant in the South African context due to the historical background of the country, which favoured certain groups over others (Mor-Barak, 2014). As a result, the following legal frameworks were implemented: Ethical Code of Health Professionals (Health Professional Council of South Africa, 2007; Department of Health, 2006), the Constitution of the Republic of South Africa (Department of Justice, 1996), and the Employment Equity Act 55 of 1998, Section 8, (Government Gazette, 1998). These frameworks provide a foundation for legislation ensuring all psychometric instruments utilised in the country may be considered fair, equitable and not biased to any population group. In addition, recruitment processes, including the psychometric assessments, should be non-discriminate (bias free or equivalent) against any member of the society.

Applied to the theme of the present study, both the psychology professionals and the bank are required to comply with the above-mentioned legislation. This can be done by having a robust equity plan to address the mentioned issues. In this regard, the bank is expected to adopt the stipulated human capital practices that ensure equitable and fair representation of employees from diverse groups (e.g. gender, language, race, age) across all levels of the organisation.

For the purpose of this research, an instrument could be deemed biased if its scores do not have the same psychological meaning across the three language groups involved in this study (Van de Vijver, 1998; He & Van De Vijver, 2012). In order to achieve this, using CFA the theoretical

model is investigated to see if it fits the data. Model 0 includes all four parameters where none of the parameters are constrained. In Model 1 only the weights are constrained while in Model 2 weights and intercepts parameters are constrained. In Model 3 weights, intercepts and structural means parameters are constrained, while in Model 4 residuals, weights, intercepts and structural means parameters are constrained. All four models fitted the data well, with the best fit from Model 3.

In the literature, three types of bias were identified regarding the items, construct and method. These types have been discussed in the previous sections, and it became clear that the study focused on item bias. This is in line with the results of Van Woerkom et al. (2016). While developing the test, the scholars reported on the equivalence of the SUDCO for gender and age. Bias and equivalent studies were also conducted by Els et al. (2016) focusing on two racial groups (Blacks and Whites), and by Theron et al. (2015) on the two individual scales that are relevant for a sample of first-year students from the two language groups (grouped as West-Germanic and African), which are also linked to race. The outcomes of these studies were favourable towards the quality of the SUDCO.

The present study supports the results of the previous findings as discussed above. Thus, in conclusion it can be asserted that Hypothesis 3 and 4 are favourable: The items of the SUDCO are not biased against any of the language groups: Nguni (IsiZulu, IsiXhosa, IsiNdebele and SiSwati), Sesotho (Sesotho, Setswana and Sepedi) and West-Germanic (English and Afrikaans). It was also found that the SUDCO has the same internal meaning (structural equivalence) for the mentioned language groups.

### **Fifth research objective**

The fifth objective of the study was to investigate the reliability of the SUDCO among individuals of the above-mentioned language groups. In order to assess the reliability of the SUDCO, Cronbach's alpha coefficient of  $\geq 0.70$  was deemed acceptable (Nunnally & Bernstein, 1994). The present study thus determined that the SUDCO dimensions have Cronbach's alpha coefficients ranging between 0.93 and 0.94. In addition, SPSS was employed for regression analyses of the four SUDCO scales regarding the following groups: age and organisational tenure by gender (2), language group (3), and gender by language (6). The significance was determined regarding the coefficients and explained proportions of variance,

by  $p$  values smaller than 0.05 or 0.01. The findings indicated that the age-groups' main effect on all three language groups was statistically significant for the subscales of strengths, POS for strengths use and strengths use behaviour ( $p < 0.01$ ), while this group had no statistical significance on POS for deficit correction and deficit correction behaviour.

### **Sixth research objective**

The sixth objective was to examine the functioning of the SUDCO within each language group with regard to age, organisational tenure, and gender. The present study opted for a balanced approach to strengths use and deficit correction. Through the regression analyses, the SUDCO showed meaningful relationships with demographic variables such as age (Hypothesis 5) and organisational tenure (Hypothesis 6) in each of the gender, language, and gender by language groups. However, the findings of the regression analyses indicated that especially the effects for the two strengths-use dimensions have significant coefficients with age and organisational tenure, which differ between the two genders (Hypothesis 7).

The results above emphasise the relevance of a positive psychology for personal development, where the effects for strengths are persistently higher than for deficits. Consequently, Neufeld, et al., (2006) argue that the balancing of deficit correction models with positive, strengths-based approaches for work environments can improve role-players' understanding of how people thrive and experience well-being. This raises the question whether balancing means including both variables of strengths and deficits in equal proportions, and to which extent. Different scholars have debated the issue. Some of the notable contributions were made by Fredrickson and Losada (2005), who suggest a ratio of positive to negative between 7:1 and 3:1 respectively, while Page and Vella-Brodrick, (2008) suggests a ratio of 5:1, to ensure optimal human functioning.

## **3.2 LIMITATIONS OF THE RESEARCH**

The present research provided evidence for the applicability of strengths in addition to deficits in the assessment of personnel development and suitability of the SUDCO in the South African context. Nevertheless, certain limitations must be factored in.

Firstly, the study took place with a sample of bank employees, who have a minimum education

of high-school equivalent and who are expected to conduct business in the English language. The questionnaire was developed only in English, thus raising questions about the generalisation of the present findings to other organisations, where employees conduct business in other ten official South African languages besides English, and in other industries, for example, mining.

Secondly, it should be acknowledged that the sample is not fully representative of the complete South African language population, seeing that the Tshivenda and Xitsonga language groups were excluded due to low representation in the sample. However, the languages represented in this study account for 81.81% of the South African language groups (Prah, 2007), which provides a broader view with a fairly reasonable representation.

Thirdly, conclusions for regression analyses about organisational tenure in relation to the four dimensions and gender could not be correlated. This was possibly due to the low representation of males within each language group. However, the sample was diverse enough in terms of the three language groups to draw valid conclusions about the overall objective of this study. In order to resolve the issue of representation, the present findings should be replicated with a balanced sample of men and women across the three indicated language groups.

Fourthly, the study employed a cross-sectional design, which covers a single point in time. This means that internal states and past behaviours are reported simultaneously, which may lead to distorted relationships between constructs (Lindell & Whitney, 2001). This process is called 'common method variance' and it was not investigated or established in the present study (Spector, 2006; Rowland & Goss, 2013). Common method variance is a problem in behavioural research because it may systematically distort the relationships between constructs. However, Harrison, McLaughlin, 1996) argues that common method variance is not that severe and there are measures to circumvent this limitation.

The fifth limitation is that the study used a self-report instrument, where an electronic link was sent to participants to completed the survey without support or supervision. The limitation is that participants may find it difficult to aggregate the occurrence of a behaviour across times and situations (Vangelist, 2004). In addition, after completing the survey, the participants raised the issue that some of them consider more than one language as a home language due to the diversity of families. They would have preferred a rating that provided them a wider option

of descriptors in terms of language (home language(s), language used at home, proficient language, etc.). Such a rating would ensure them a consistent meaning of the variable home language.

Finally, limitations are also apparent in the item response. A striking example is the item, “In my job, I work on my shortcomings”. Rowland & Goss, (2000) argues that respondents do not report directly on their behaviour but on their sense of self as mediated by their personality in relation to their reasoning. This means that respondents provide answers based on their perceptions of what would be acceptable responses linked to their persona.

### **3.3 RECOMMENDATIONS**

Despite the limitations discussed above, the present study provides valuable insights for both organisations and employees. Based on the literature review, evidence for the link between human capital and management practices on the one hand, and positive psychology on the other hand, can impact favourably on organisational development and individual performance. Furthermore, tools, including psychometric measures used in organisations, need to ensure equivalence and avoid bias against any South African language group. In this regard, recommendations are offered to organisations, and for possible future research in the field of organisational psychology.

#### **3.3.1 Recommendations for organisations**

Gallup’s (2013) studies indicate that in relation to Africa and the world, South Africa has the highest levels of disengaged employees. The strength-based approach has several benefits such as improving employees’ engagement and performance (Bakker & Bal, 2010). In addition, literature indicates that currently, human capital practices, more specifically performance management and feedback, are largely used to identify employees’ deficits. However, investing in employees’ strengths and well-being has the power to boost the results that companies would achieve over and above an investment in increasing engagement alone Gallup (2013).

The second objective of the study was to validate the SUDCO. The four scales of this instrument will help determine whether employees perceive their organisation to support them by using their strengths, or by correcting their deficits. It will also ascertain whether employees

themselves use their strengths, and take measures to correct their deficits. Information obtained during the analyses can be used at organisational level to inform policies, procedures and practices. These include performance reviews, performance development plans, training and coaching. In this regard, principles of positive psychology could be applied to improve performance and deliver financial returns. Thus, when employees become aware of their strengths, they can hone their skills, which leads to career development.

Finally, the study was conducted amongst a group of South African employees consisting of the three language groups, namely Nguni, Sesotho and West-Germanic. It is important to promote an organisation's development and the wellbeing of its employees, and still comply with legislation. Therefore, organisations utilise psychometric instruments in the workplace, and these instruments need to be equivalent and not bias across different ethnic groups. Since the SUDCO has been validated for its cross-cultural adaptability, it is recommended that organisations adopt this instrument to measure perceptions about strengths and deficits use across language groups. In addition, on the level of individual employees, managers can measure whether their work force is proactive, and whether measures are necessary to correct deficiencies across the language groups.

### **3.3.2 Recommendations for future research**

It is suggested that further research be conducted across the South African regions, to ensure inclusivity and generalisation to the South African population as a whole. The different regions should have stronger language bases for the various languages. Moreover, incorporating all South African regions will ensure inclusion of the Tshivenda and Xitshonga language groups, which are not as dominant in the Gauteng region. Further cross-cultural research will be significant as there is a concerted effort to ensure that psychometric assessments used in South African organisations have been investigated thoroughly. It should be determined whether the measuring instruments are appropriate or whether they are biased in respect of the diverse socio-cultural, economic, educational and environmental factors (Foxcroft & Roodt, 2009).

It is also recommended that longitudinal studies be conducted, as it do not have problems with cohort effects and allow the researchers to assess changes in individuals or groups (Durand & Barlow, 2016). For instance, before an organisation implements interventions in the environment, it may be useful to conduct the assessment beforehand as well as afterwards, to

measure the impact on the organisation's staff.

Finally, a case could be made for types of measurements other than self-reports. Possible methods would be the use of more objective measuring instruments such as actual feedback from supervisors, or courses that were attended. Another possibility may be to observe actual interaction between colleagues and supervisors in the workspace, perhaps also employing ratings by co-workers and managers on any of the desired dimensions.

### **3.4 IN CONCLUSION**

A positive focus on strengths within measures of personnel development makes a substantial contribution to organizations' attempt at keeping their employees on top of their game and committed to their company. The SUDCO is a valid and reliable measure in the South African context to help orient managers in this attempt.

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