

# Strengths use and deficit improvement at work: A South African validation study

**C Els**

**12307521**

**MA Industrial Psychology**

Thesis submitted in fulfillment of the requirements for the degree *Philosophiae Doctor* in Industrial Psychology at the Potchefstroom Campus of the North-West University

Promoter: Prof K Mostert

Co-Promoter: Dr M van Woerkom

October 2015



## REMARKS

For the purpose of this thesis the reader is reminded of the following:

- The formatting guidelines specified by the postgraduate programme in Industrial Psychology of the North-West University, Potchefstroom Campus were followed in this thesis. The referencing style of this thesis followed the guidelines as prescribed in the Publication Manual (6th edition) of the American Psychological Association (APA).
- The thesis is submitted in the form of six chapters, which include an introductory chapter, four research articles and a concluding chapter.
- An adapted version of research article 1 was submitted for publication in the Journal of Vocational Behavior. This article was also presented at the 16<sup>th</sup> Congress of the European Association of Work and Organizational Psychology (EAWOP) in 2013 (Els, C., Mostert, K., Van Woerkom, M., Rothmann, S. (Jr.) & Bakker, A.B. (2013, May). *Organisational and individual orientation towards strengths use and deficit improvement: Development and validation of a new questionnaire*. Paper presented at the 16th Congress of the European Association of Work and Organizational Psychology (EAWOP), Munster, Germany).
- An adapted version of article 3 was submitted for publication in Personnel Review. The contents of this article were also presented at the 7<sup>th</sup> European Conference on Positive Psychology in 2014 (Els, C., Mostert, K., & Van Woerkom, M. (2014, July). *Strengths use, deficit improvement or a combination of both for positive organisational outcomes?*. Paper presented at the 7th European Conference on Positive Psychology (ECP), Amsterdam, the Netherlands).

## DECLARATION

I, Crizelle Els, hereby declare that this thesis **Strengths use and deficit improvement at work: A South African validation study** is my own work and that the views and opinions expressed in this work are my own and relevant literature references as reflected in the references.

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

A handwritten signature in black ink, consisting of a large, stylized 'E' followed by a smaller 's'.

**Crizelle Els**

**April 2015**

## ACKNOWLEDGEMENTS

Anyone reaching this point in their PhD studies where it is time to give recognition and thanks to all individuals and parties that were involved in contributing to the success of a study, may become overwhelmed not knowing where to start and with the fear of neglecting to acknowledge someone. Nonetheless, please allow me the opportunity to give thanks to a number of people:

- My Maker and Saviour, this journey has been completed with your purpose in mind. Thank You for the time and grace I so abundantly received to fulfil this promise.
- To Willem, my husband and true anchor. Thank you so much for the patience and love with which you have stood by me in the past few years. I know my absence, while working on this PhD, placed additional pressure on you with the household and raising Teagan, but I appreciate and admire your devotion. Your prayers and love have carried me through this research journey. Thank you.
- My family, and in particular my parents, Dirk and Heleen. Thank you for the continuous belief in me and your financial and emotional support. I am forever grateful for this leap you have given me in my career.
- To my promoter Prof. Karina Mostert, it is with sincere appreciation that I would like to thank you for the time, effort and resources you have invested in this study, as well as in my personal and professional development. I will be forever grateful for the opportunities you have given me. Although there were many tears, we had some fun along the way as well. This is a journey with you I will not forget.
- To Dr Marianne van Woerkom (Tilburg University, the Netherlands), my co-promoter, thank you for your inputs and expertise in this study. I appreciate the opportunity I had to learn from you. Thank you for your patience and guidance.
- A special word of thanks to Prof. Arnold Bakker. Thank you for your contribution and insights into research article 1 and your help and advice for other parts in the thesis. It was a great pleasure and privilege working with you.

- To my friends, and specifically Lelani, Charl, Jeanine, Jannie, Mariana, Melanie, Alewyn, Leon and Marissa. You always had an ear and a shoulder ready whenever I needed it. Thank you all so much for the support and encouragement, you each hold a very special place in my heart.
- Thank you to each of the staff members of the WorkWell Research Unit for Economic and Management Sciences, and to the Director, Prof. Jaco Pienaar, for the support you have given me throughout the completion of my studies. It is greatly appreciated.
- Dr Leon de Beer and Mr. Ian Rothmann (Jr.). Thank you for the expertise with which you have conducted the statistical analyses of the articles in this study. Also, thank you to Dr Symen Brouwers for the assistance with the analyses of the bias and equivalence results of research article 2 in this thesis.
- I would like to sincerely express my appreciation for each of the participants who became a part of this research project. Thank you for the willingness to expend time on this study, despite not receiving anything in return.
- And last, but certainly not least, a great thank you to Mrs Cecile van Zyl for the professional language editing of this thesis. It is highly appreciated.

Cecile van Zyl BA(PU for CHE); BA honours (NWU); MA(NWU)

Language editing and translation

072 389 3450

[Cecile.vanzyl@nwu.ac.za](mailto:Cecile.vanzyl@nwu.ac.za)

2015-04-24

To whom it may concern

Re: Language editing of PhD thesis: **Strengths use and deficit improvement at work:  
A South African validation study**

This serves to confirm that I language edited the above PhD thesis, in article format, by Mrs  
Crizelle Els (student number: 12307521).

Please feel free to contact me should you have any enquiries.

Kind regards

Cecile van Zyl

Language practitioner

# TABLE OF CONTENTS

	<b>Page</b>	
List of tables	viii	
List of figures	ix	
Summary	x	
Opsomming	xiii	
Appendix A: List of abbreviations	xvi	
<b>Chapter 1: Introduction</b>		
1.1	Problem statement	1
1.2	Contribution of this research	13
1.3	Research objectives	14
1.3.1	General objectives	14
1.3.2	Specific objectives	15
1.4	Research hypotheses	16
1.4.1	Research article 1	16
1.4.2	Research article 2	17
1.4.3	Research article 3	17
1.4.4	Research article 4	18
1.5	Research design	18
1.5.1	Research approach	18
1.5.2	Research method: Research article 1	19
1.5.2.1	Research participants and procedure	19
1.5.2.2	Measuring instruments	20
1.5.2.3	Statistical analysis	21
1.5.3	Research method: Research article 2	22
1.5.3.1	Research participants and procedure	22
1.5.3.2	Measuring instruments	22
1.5.3.3	Statistical analysis	23
1.5.4	Research method: Research article 3	24
1.5.4.1	Research participants and procedure	24
1.5.4.2	Measuring instruments	24
1.5.4.3	Statistical analysis	26

1.5.5	Research method: Research article 4	27
1.5.5.1	Research participants and procedure	27
1.5.5.2	Measuring instruments	27
1.5.5.3	Statistical analysis	28
1.6	Ethical considerations	29
1.7	Overview of chapters	29
1.8	Chapter summary	30
	References	31
 <b>Chapter 2: Research article 1</b>		 42
 <b>Chapter 3: Research article 2</b>		 77
 <b>Chapter 4: Research article 3</b>		 104
 <b>Chapter 5: Research article 4</b>		 138
 <b>Chapter 6: Conclusions, limitations and recommendations</b>		 175
6.1	Conclusions	175
6.2	Limitations of this research	183
6.3	Recommendations	185
6.3.1	Recommendations to the organisation	185
6.3.2	Recommendations for future research	188



## LIST OF TABLES

Table	Description	Page
<b>Chapter 2: Research article 1</b>		
Table 1	Factor loadings based on exploratory factor analyses	52
Table 2	Fit statistics for the hypothesised and comparison models	58
Table 3	Factor loadings, significance and variance explained	60
Table 4	Descriptive statistics and correlations between the SUDIQ dimensions	61
Table 5	Correlations between the SUDIQ dimensions and other constructs	61
<b>Chapter 3: Research article 2</b>		
Table 1	Characteristics of the participants	86
Table 2	Means, standard deviations and Cronbach's alpha coefficients of the SUDIQ dimensions	89
Table 3	Differential item functioning of the SUDIQ	91
Table 4	Fit statistics for the models	94
<b>Chapter 4: ChapResearch article 3</b>		
Table 1	Characteristics of participants	116
Table 2	Correlation matrix (r) of the latent variables	120
Table 3	Goodness-of-fit indices and structural paths investigated for the different outcome variables	123
Table 4	Between-group differences based on work engagement, learning, job satisfaction and turnover intention	125
<b>Chapter 5: Research article 4</b>		
Table 1	Characteristics of participants	152
Table 2	Fit statistics for the hypothesised model and four competing models	156
Table 3	Correlation matrix (r) of the latent variables	156
Table 4	Fit statistics for the hypothesised model and four competing models	158
Table 5	Estimates ( $\beta$ ) of the direct structural paths in model 1	158
Table 6	Indirect effects for Model 1	159

## LIST OF FIGURES

<b>Figure</b>	<b>Description</b>	<b>Page</b>
<b>Chapter 1: Introduction</b>		
Figure 1	Work engagement as predictor of PBSU and PBDI and possible mediator between POSSU and PBSU and POSDI and PBDI	11
Figure 2	Work engagement as outcome of PBSU and PBDI and PBSU and PBDI possible mediators between POSSU/POSDI and work engagement	11
<b>Chapter 5: Research article 4</b>		
Figure 1	Work engagement as predictor of PBSU and PBDI and possible mediator between POSSU and PBSU and POSDI and PBDI	149
Figure 2	Work engagement as outcome of PBSU and PBDI and PBSU and PBDI possible mediators between POSSU/POSDI and work engagement	150
Figure 3	Structural paths of model 1	158

## SUMMARY

**Title:** Strengths use and deficit improvement at work: A South African validation study

**Keywords:** perceived organisational support for strengths use; perceived organisational support for deficit improvement; proactive behaviour towards strengths use; proactive behaviour towards deficit improvement; reliability; validity; bias; equivalence; work engagement; learning; job satisfaction; turnover intention

The emergence of the positive psychology movement has brought the attention to individuals' strengths and their deficits. Specifically of interest within an organisational context is the extent to which employees' strengths are used and their deficits are improved. Specifically, organisations may provide their support for employees' strengths use and deficit improvement, and individuals themselves can also proactively seek opportunities to use their strengths and improve their deficits. However, little attention has been paid to strengths use and deficit improvement in empirical research. One reason for this may be a lack of a clear conceptualisation of organisational support for strengths use and deficit improvement and individuals' proactive strengths use and deficit improvement. Furthermore, this lacking conceptualisation hinders research to empirically measure these constructs, since no measuring instrument exists to measure strengths use and deficit improvement by the organisation and the individual. In addition, no empirical research has been conducted to determine whether strengths use or deficit improvement, or possibly a combined approach focusing on both, may be more beneficial for the organisation in terms of work-related outcomes such as work engagement, learning, job satisfaction and turnover intention. Moreover, the relationship between work engagement (a well-established positive psychology construct) with organisational support for strengths use and deficit improvement and specifically individuals' proactive strengths use and deficit improvement is unexplored.

In light of the above gaps in the literature, the primary objectives of this study were: (a) To conceptualise a taxonomy of strengths use and deficit improvement and to develop and validate the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) that measures four constructs, namely perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI); (b) to examine the

item bias, structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ among South African ethnic groups; (c) to examine whether POSSU, POSDI or a combination of these two will lead to the best organisational outcomes (i.e. work engagement, learning, job satisfaction and turnover intention); and (d) to determine whether (1) work engagement mediates the relationship between POSSU and PBSU and between POSDI and PBDI, or (2) whether proactive behaviour (PBSU and PBDI) mediates the relationship between POSSU and POSDI with work engagement.

The above research objectives were addressed in four empirical, quantitative research articles. For the purpose of research article 1, the Strengths Use and Deficit Improvement Scale (SUDIQ) was developed by following the guidelines of DeVellis (2003). A pilot study was conducted among a heterogeneous sample ( $N = 241$ ). The validation study was conducted among a heterogeneous sample ( $N = 699$ ) in various industries in South Africa. For research article 2, the item bias, construct equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ were assessed among a heterogeneous sample ( $N = 858$ ) in various South African industries. For the purpose of article 3, the relationships between POSSU, POSDI and a combined approach with the outcomes, work engagement, learning, job satisfaction and turnover intention were examined among a sample of 266 public school teachers in the Western Cape. Finally, to determine the relationships between work engagement and PBSU and PBDI and also the mediation effect in a structural model, a sample of 378 employees in the financial industry was investigated.

For the pilot study in article 1, an initial item pool of 33 items was generated. In the exploratory factor analysis of this pilot study, four distinct factors were extracted and were labelled perceived organisational support for strengths use (POSSU; eight items), perceived organisational support for deficit improvement (POSDI; eight items), proactive behaviour towards strengths use (PBSU; nine items) and proactive behaviour towards deficit improvement (PBDI; eight items). The factorial validity was confirmed with a confirmatory factor analysis that confirmed the hypothesised four-factor structure of the SUDIQ. The POSSU and POSDI dimensions were positively related to autonomy and participation in decision-making, two job resources, and confirming the convergent validity of these two scales. The PBSU and PBDI scales were found to be positively related to self-efficacy, establishing the convergent validity of these two scales. The criterion-related validity was established through the positive correlation of the four SUDIQ dimensions with work engagement and the negative correlation with burnout.

According to the results of the bias and equivalence analysis in article 2, the uniformly biased items included one POSSU item, two POSDI items, two PBSU items and three PBDI items. Three POSSU items were found to be non-uniformly biased. These items that were identified as having either uniform or non-uniform bias for black, white or coloured participants were discarded from further analyses. The results confirmed the SUDIQ to be equivalent across the three ethnic groups in terms of construct equivalence, measurement unit equivalence and scalar equivalence.

The results of research article 3 indicate that both strengths use and deficit improvement are important predictors of work engagement, learning, job satisfaction and turnover intention. Learning was higher and turnover intention lower for individuals experiencing a combined approach compared to those believing that their school does not support them to either use their strengths or improve their deficits. Furthermore, a combined approach was associated with higher job satisfaction than a strengths-based approach, and a deficit-based approach was shown to be associated with higher levels of work engagement and turnover intentions compared to an environment where neither employees' strengths nor deficits are addressed.

Finally, in article 4, two competing models were tested where in model 1 work engagement was specified as a mediator in the relationship between POSSU and PBSU and between POSDI and PBDI. In model 2, proactive behaviour (PBSU and PBDI) was specified as a mediator in the relationship between POSSU and POSDI with work engagement. The results indicated that model 1 fitted the data better compared to model 2. Therefore, it was found that work engagement mediates the relationship between POSSU and PBSU and also between POSDI and PBDI.

Recommendations were made for organisations and for future research.

## OPSOMMING

**Titel:** Sterkpuntgebruik en tekortkomingverbetering by die werk: 'n Suid-Afrikaanse geldigheidstudie

**Sleutelwoorde:** Ervaarde organisasie-ondersteuning vir sterkpuntgebruik; ervaaarde organisasie-ondersteuning vir tekortkomingverbetering; proaktiewe gedrag jeens sterkpuntgebruik; proaktiewe gedrag jeens tekortkomingverbetering; geldigheid; betroubaarheid; ekwivalensie, werksverbintenis; leer; werkstevredenheid; intensie om te bedank

Die ontluiking van die positiewe sielkunde-beweging het die aandag gevestig op individue se sterkpunte en tekortkominge. Spesifiek van belang binne die organisasiekonteks is die mate waartoe werknemers se sterkpunte gebruik word en hulp tekortkominge verbeter word. Organisasies verskaf moontlik hul ondersteuning aan werknemers se sterkpuntgebruik en tekortkomingverbetering, en individue kan self ook proaktief poog om hul sterkpunte te gebruik en hul tekortkominge te verbeter. Min aandag is egter al geskenk aan empiriese navorsing ten opsigte van sterkpuntgebruik en tekortkomingverbetering. Een rede hiervoor kan wees weens 'n tekort aan 'n duidelike konseptualisering van organisasie-ondersteuning van sterkpuntgebruik en tekortkomingverbetering. Hierdie tekort aan konseptualisering van organisasie-ondersteuning vir sterkpuntgebruik en tekortkomingverbetering en individue se proaktiewe sterkpuntgebruik en tekortkomingverbetering kan verder navorsers belemmer om hierdie konstrunkte empiries te meet, aangesien geen meetinstrument bestaan om sterkpuntgebruik en tekortkomingverbetering deur die organisasie en die individu te meet nie. Verder is geen empiriese navorsing al gedoen om te bepaal of sterkpuntgebruik of tekortkomingverbetering, of moontlik 'n gekombineerde benadering wat op beide fokus, meer voordelig vir die organisasie sal wees nie in terme van werkverwante uitkomstes soos werksbegeestering, leer, werkstevredenheid en omset-intensie. Verder is die verhouding tussen werksverbintenis ('n goedgevestigde positiewe sielkunde-konstruk) met organisasie-ondersteuning vir sterkpuntgebruik en tekortkomingverbetering en spesifiek individue se proaktiewe sterkpuntgebruik en tekortkomingverbetering nog nie ondersoek nie.

Gesien in die lig van die bogenoemde leemtes in die literatuur, was die primêre doelstellings van hierdie navorsing: (a) om 'n taksonomie van sterkpuntgebruik en tekortkomingverbetering te konseptualiseer en om die Strengths Use and Deficit Improvement Questionnaire (SUDIQ), wat

vier konstruksie meet, naamlik ervare organisasie-ondersteuning vir sterkpuntgebruik (POSSU), ervare organisasie-ondersteuning vir tekortkomingverbetering (POSDI), proaktiewe gedrag jeens sterkpuntgebruik (PBSU) en proaktiewe gedrag jeens tekortkomingverbetering (PBDI), te ontwikkel en te valideer; (b) om die itempartydigheid, strukturele ekwivalensie, metingseenheid-ekwivalensie en skaal-ekwivalensie van die SUDIQ tussen Suid-Afrikaanse etniese groepe te ondersoek; (c) om te ondersoek of POSSU, POSDI of 'n kombinasie daarvan sal lei tot die beste organisasie-uitkomst (i.e. werksverbintenis, leer, werkstevredenheid en omset-intensie); en (d) om te bepaal of (1) werksbegeestering die verhouding tussen POSSU en PBSU en tussen POSDI en PBDI medieer, of (2) of proaktiewe gedrag (PBSU en PBDI) die verhouding tussen POSSU en POSDI met werksbegeestering medieer.

Die bogenoemde navorsingsdoelstellings is aangespreek in vier empiriese, kwantitatiewe navorsingsartikels. Vir die doeleindes van artikel 1, is die SUDIQ ontwikkel deur die riglyne van DeVellis (2003) te volg. 'n Loodstudie is uitgevoer in 'n heterogene steekproef (N = 241). Die valideringstudie is uitgevoer in 'n heterogene steekproef (N = 699) in verskeie industrieë in Suid-Afrika. Vir navorsingsartikel 2 is die itempartydigheid, konstruk-ekwivalensie, metingseenheid-ekwivalensie en skaal-ekwivalensie van die SUDIQ geassesseer in 'n heterogene steekproef (N = 858) in verskeie Suid-Afrikaanse industrieë. Vir doeleindes van artikel 3 is die verhoudings tussen POSSU, POSDI en 'n gekombineerde benadering met die uitkomst, werksbegeestering, leer, werkstevredenheid, en intensie om te bedank ondersoek in 'n steekproef van 266 openbare skool-onderwysers in die Wes-Kaap. Laastens, om die verhoudings tussen werksbegeestering en PBSU en PBDI en ook die mediasie-effek in 'n strukturele model te bepaal, is 'n steekproef van 38 werknemers in die finansies-industrie ondersoek.

Vir die proefstudie in artikel 1 is 'n aanvanklike poel van 33 items gegenereer. In die ondersoekende faktoranalise van hierdie proefstudie is vier spesifieke faktore bekom en is geëtiketteer as organisasie-ondersteuning vir sterkpuntgebruik (POSSU; agt items), organisasie-ondersteuning vir sterkpuntgebruik (POSDI; agt items), proaktiewe gedrag jeens sterkpuntgebruik (PBSU; nege items), en proaktiewe gedrag jeens tekortkomingverbetering. Die faktorgeldigheid is bevestig met 'n bevestigende faktoranalise wat die hipotetiese vier-faktorstruktuur van die SUDIQ bevestig het. Die POSSU- en POSDI-dimensies was positief verbandhoudend met outonomie en deelname in besluitneming, twee werksbronne, en die bevestiging van die konvergente validiteit van hierdie twee skale. Die PBSU- en PBDI-skale was positief verbandhoudend met selfeffektiwiteit, wat die konvergente validiteit van hierdie twee

skale bevestig het. Die kriteriumverwante validiteit is bevestig deur die positiewe korrelasie van die vier SUDIQ-dimensies met werksverbintenis en die negatiewe korrelasie met uitbranding.

Volgens die resultate van die partydigheid en ekwivalensie-analise in artikel 2, het die uniformig-partydige items een POSSU-item, twee POSDI-items, twee PBSU-items en drie PBDI-items bevat. Drie POSSU-items is as nie-uniformig-partydig gevind. Hierdie items wat geïdentifiseer is as óf uniform óf nie-uniform vir swart, wit of kleurling-deelnemers, is weggelaat uit verdere analises. Hierdie resultate bevestig die SUDIQ as ekwivalent regoor drie etniese groepe in terme van konstruk-ekwivalensie, metingseenheid-ekwivalensie en skaal-ekwivalensie.

Die resultate van navorsingsartikel 3 toon dat beide sterkpuntgebruik en tekortkomingverbetering belangrike voorspellers van werksverbintenis, leer, werkstevredenheid en omset-intensie is. Leer was hoër en omset-intensie laer vir individue wat 'n gekombineerde benadering ervaar, teenoor dié wat glo dat hul werkgewer hulle nie ondersteun om óf hul sterkpunte te gebruik óf hul tekortkominge te verbeter nie. Verder is 'n gekombineerde benadering geassosieer met hoër werkstevredenheid as 'n sterkpuntgebaseerde benadering, en 'n tekortkoming-gebaseerde benadering is geassosieer met hoër vlakke van werksverbintenis en omset-intensie in vergelyking met 'n omgewig waar nóg werknemers se sterkpunte nóg hul tekortkominge aangespreek is.

Uiteindelik, in artikel 4, is twee mededingende modelle getoets, waar, in model 1, werksbegeestering gespesifiseer is as mediator in die verhouding tussen POSSU en PBSU en tussen POSDI en PBDI. In model 2 is proaktiewe gedrag (PBSU en PBDI) gespesifiseer as 'n mediator tussen POSSU en POSDI met werksbegeestering. Die resultate toon dat model 1 beter by die data gepas het in vergelyking met model 2. Dus is gevind dat werksbegeestering die verhouding tussen POSSU en PBSU sowel as tussen POSDI en PBDI medieer.

Aanbevelings is gemaak vir organisasies en toekomstige navorsing.



## APPENDIX A: LIST OF ABBREVIATIONS

Below please find a list of the unfamiliar abbreviations and definitions of the four constructs, perceived organisational support for strengths use, perceived organisational support for deficit improvement, proactive behaviour towards strengths use and proactive behaviour towards deficit improvement, conceptualised in article 1 of this thesis.

<b>POSSU</b>	Perceived organisational support for strengths use	The extent to which employees perceive their organisation to be supportive of them using their strengths.
<b>POSDI</b>	Perceived organisational support for deficit improvement	The extent to which employees perceive their organisation to be supportive of them improving their deficits.
<b>PBSU</b>	Proactive behaviour towards strengths use and	Employees' self-starting behaviour to use their strengths in the workplace.
<b>PBDI</b>	Proactive behaviour towards deficit improvement	Employees' self-starting behaviour to improve their deficits in the workplace.

**CHAPTER 1**

**INTRODUCTION**

# **CHAPTER 1**

## **INTRODUCTION**

The focus of this thesis is the conceptualisation of a taxonomy of strengths use and deficit improvement and to develop and validate the Strengths Use and Deficit Improvement Questionnaire (SUDIQ). Furthermore, the relationships of the four SUDIQ dimensions with important organisational outcomes are examined.

In this chapter, an overview of the research problem is presented, followed by the research questions and research objectives. The contribution of this study is also discussed. The research design followed in each of the four research articles of this thesis is discussed. Finally, the ethical considerations are explained and the chapter division of this thesis is presented.

### **1.1 PROBLEM STATEMENT**

Positive psychology is continually growing in popularity. The emergence of the positive psychology movement brought a shift in focus from the negative, to a focus on the positive; from repairing what is wrong, to taking advantage of what is right (Seligman & Csikszentmihalyi, 2000). Similarly, where the focus has been on individuals' deficits, positive psychology has urged a consideration for human strengths (Linley, Joseph, Harrington & Wood, 2006; Lopez, Snyder & Rasmussen, 2003). Deficits refer to those aspects of the job an individual is not good at or needs to improve upon – e.g. weaknesses (Aguinis, Gottfredson & Joo, 2012). Strengths are defined as the ability to consistently provide good performance on a given activity (Clifton & Harter, 2003). It is a combination of talents, knowledge and skills individuals excel in, which come naturally to them and that assist in goal attainment (Linley & Harrington, 2006; Lopez, Hodges & Harter, 2005).

Traditionally employee weaknesses were identified through the process of performance appraisal and attempts were made to redress these deficits by sending the employee through training and development (Noe, Wilk, Mullen & Wanek, 2014; Thornton & Rupp, 2005). The improvement of employee deficits may hold some advantages for both the individual and the

organisation. The opportunity to receive training may increase employees' motivation (Salas, Tannenbaum, Kraiger & Smith-Jentsch, 2012), and make them feel valued by the organisation (Metz, Burkhauser & Bowie, 2009). The benefits of training and development also include increased employee performance (Al-Kahtani & Khan, 2014), organisational performance (Aguinis & Kraiger, 2009), higher work engagement (Schaufeli & Bakker, 2004), job satisfaction (Schmidt, 2007) and organisational commitment (Benson, 2006).

In addition, it is also suggested that organisations use their employees' strengths to the benefit of the organisation. These strengths have little value if they are not mined and applied. Previous studies have found that strengths use is associated with positive outcomes. Acknowledging and using an individual's strengths increase self-efficacy (Kaslow, Falender & Grus, 2012), possibly because such a person feels confident in his or her abilities. Strengths use can be associated with increased positive affect, since people naturally enjoy applying their strengths in their daily activities. This increased positive affect may explain why strengths use is associated with increased subjective well-being and vitality (Govindji & Linley, 2007; Proctor, Maltby & Linley, 2011). Moreover, using one's strengths requires less effort since it comes naturally (Govindji & Linley, 2007), and one exerts less effort and consequently experiences higher levels of vitality (Ryan & Deci, 2008). A study by Seligman, Steen, Park and Peterson (2005) suggests that a focus on strengths increases happiness and reduces depressive symptoms, and again this can be because using one's strengths makes you feel good (Linley & Harrington, 2006). This may also explain why the use of one's strengths is associated with increased life satisfaction (Park, Peterson, & Seligman, 2004). Work engagement is another positive outcome associated with strengths use. This is confirmed by previous studies (Botha & Mostert, 2014; Sonnentag, 2003; Stander & Mostert, 2013) that found that strengths use predicts both vigour and dedication (the two core dimensions of work engagement; Llorens, Schaufeli, Bakker & Salanova, 2007). Possible reasons for this may again be that when individuals use their strengths they enjoy their work more, and feel more energetic when their job tasks fall within their areas of strengths.

It is of course reasonable to expect that an organisation that both improves their employees' deficits and uses their strengths may have employees with more positive attitudes toward the organisation, since these employees feel more valued and appreciated by the organisation (Santos & Stuart, 2003; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007) and enjoy

their work more (Harzer & Ruch, 2013; Schmidt, 2007), since they can do what comes natural to them, and can work on the things that they are less skilled at. However, despite the support for a combined approach focusing on both strengths use and deficit improvement (Rust, Diessner & Reade, 2009; Sirmon, Hitt, Arregle & Campbell, 2010), very little empirical research has been done to examine this phenomenon in the workplace. It is therefore suggested that research should address this gap by investigating the role that both strengths use and deficit improvement play within the organisational context.

It can be argued that this lack in research described above may be due to the absence of a theoretical framework to understand the dynamics between the individual and the organisation in terms of employees' strengths use and their deficit improvement. Specifically, it is suggested that a clear conceptualisation should be made to clarify the roles and responsibilities related to strengths use and deficit improvement by both the individual and the organisation. It can be argued that to make use of one's strengths and improve one's deficits at work, one will need the approval and support of the organisation to do so. However, a supportive organisational environment to use one's strengths and improve one's deficits alone may not be sufficient, since employees will actually also need to engage in this behaviour. Therefore, it seems as if strengths use and deficit improvement from an organisational perspective (organisational support for strengths use and organisational support for deficit improvement) and from an individual perspective (individuals' proactive behaviour to use their strengths and improve their deficits) should be clearly conceptualised and defined to be able to study these concepts. Therefore, an aim of research article 1 in this study is to conceptualise a taxonomy (i.e. a classification) of strengths use and deficit improvement consisting of four related constructs, namely:

- *Perceived organisational support for strengths use (POSSU)*, defined as the extent to which employees perceive their organisation to be supportive of them using their strengths.
- *Perceived organisational support for deficit improvement (POSDI)*, defined as the extent to which employees perceive their organisation to be supportive of them improving their deficits.
- *Proactive behaviour towards strengths use (PBSU)*, defined as employees' self-starting behaviour to use their strengths in the workplace.
- *Proactive behaviour towards deficit improvement (PBDI)*, defined as employees' self-starting behaviour to improve their deficits in the workplace.

Another reason why research regarding strengths use and deficit improvement of employees is lacking, is that currently no measuring instrument exists to measure both organisations' support for strengths use and deficit improvement, and employees' proactive behaviour towards strengths use and deficit improvement. More specifically, no reliable and valid instrument that measures POSSU, POSDI, PBSU and PBDI, as outlined above, could be found in the literature. Consequently, another aim of this study is to develop and validate a questionnaire that measures the four dimensions outlined above, namely the Strengths Use and Deficit Improvement Questionnaire (SUDIQ).

A measuring instrument is reliable when an assessment instrument gives similar results each time it is used in a similar setting with similar subjects (Sullivan, 2011). Reliability is therefore concerned with the consistency or stability of a measure. The validity of measures refers to the accuracy of measuring instruments. Validity refers to how well the instrument measures the underlying construct (Sullivan, 2011). For the purpose of this study, the reliability and factorial (construct) validity, convergent validity and criterion-related (predictive validity) of the SUDIQ were examined.

The factorial validity of a measure is confirmed when the hypothesised number of underlying factors, the correlation structure among the factors, and the correlations of each test item with the factors are confirmed (Kasper & Ünlü, 2013). As it is hypothesised that the SUDIQ will consist of four distinct dimensions (i.e. POSSU, POSDI, PBSU and PBDI), the construct validity will be assessed by means of factor analysis to confirm the factorial validity of the SUDIQ.

The convergent validity of the SUDIQ will be investigated by relating the SUDIQ to theoretically-related constructs (Cozby, 2009). POSSU and POSDI are classified as job resources, since, like other resources, both POSSU and POSDI are (a) functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate personal growth, learning and development (Bakker & Demerouti, 2007). Therefore, it can be expected that these two constructs will be positively related to other job resources, including autonomy and participation in decision-making, two widely recognised job resources (Demerouti, Bakker & Fried, 2012; Bakker, Van Veldhoven & Xanthopoulou, 2010).

PBSU and PBDI, on the other hand, are conceptualised as proactive behaviour. More specifically, it can be argued that employees who actively look for opportunities to use their strengths within the work context also display proactive behaviour. Proactive behaviour is displayed when employees take initiative in improving their current circumstances or creating new favourable circumstances for themselves (Crant, 2000). In an attempt to demonstrate the convergent validity of the two proactive behaviour dimensions, the correlation between PBSU and PBDI with self-efficacy is examined. It is argued that individuals with high levels of self-efficacy feel that they are able to control their environment by taking adaptive action (Bandura, 1992). Similarly, self-efficacious individuals have confidence in their own abilities, and tend to believe that their actions will be successful (e.g. Morrison & Phelps, 1999). This may encourage them to engage in behaviour where they take initiative (i.e. proactive behaviour; Parker, Williams & Turner, 2006). Therefore, it is expected that PBSU and PBDI will be related to self-efficacy.

Finally, the criterion-related validity of the SUDIQ is investigated by means of investigating the relationships between POSSU, POSDI, PBSU and PBDI with the outcome variables work engagement and burnout. Work engagement refers to a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication and absorption (Schaufeli, Salanova, González-Romá & Bakker, 2002; Schaufeli & Bakker, 2010). Recent studies suggest that vigour and dedication are the core dimensions of work engagement (Llorens et al., 2007; Schaufeli & Bakker, 2004; Van Wijhe, Peeters, Schaufeli & Van den Hout, 2011) and that absorption is considered to play a less central role in engagement (González-Romá, Schaufeli, Bakker & Lloret, 2006). Vigour is characterised by high energy levels and a willingness to invest extra effort in one's work. Dedication refers to a strong involvement in one's work and experiencing feelings such as enthusiasm, inspiration and pride. Burnout is often considered to be the negative antipode of work engagement and is defined as "a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterised by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work" (Schaufeli & Enzmann, 1998: 36). The two core dimensions of burnout include exhaustion and cynicism (Lee & Ashforth, 1996; Schaufeli & Taris, 2005). Exhaustion refers to fatigue and individual stress that result from the depletion of emotional and physical resources. Cynicism is described as an indifferent or negative attitude towards one's work owing to the inability to deal with job demands (Schaufeli, Leiter, Maslach &

Jackson, 1996).

It is expected that POSSU will lead to increased work engagement since it can be argued that when employees are allowed by the organisation to use their strengths, they may tend to feel good about themselves and are motivated (Linley & Harrington, 2006), which may lead to higher work engagement. Similarly, POSDI may be associated with increased work engagement since the opportunity for employees to improve their deficits at work may stimulate professional growth and development, which is associated with work engagement (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). It is also expected that POSSU and POSDI may lead to lower levels of burnout. It is reasoned that using one's strengths may reduce employees' stress, which is associated with burnout (Buick & Muthu, 1997; Proctor et al., 2011; Wood, Linley, Maltby, Kashdan & Hurling, 2011). Likewise, constantly performing tasks that fall within your areas of weakness without the opportunity to improve these weaknesses could have a negative impact on goal achievement, which may increase feelings of incompetence, which, in turn, could lead to burnout (Maslach, 2006; Schaufeli & Peeters, 2000). Therefore, developing one's weaknesses may reduce an individual's burnout levels.

Similar to POSSU and POSDI, it is also expected that PBSU and PBDI may be related to work engagement and burnout. To illustrate, it is expected that employees are happier, feel good about themselves and are motivated toward fulfilling their potential when they are able to use their strengths (Linley & Harrington, 2006; Seligman et al., 2005). Developing one's weaknesses may create a sense of mastery or accomplishment. In turn, these positive emotions elicited through using one's strengths and improving one's deficits may increase one's enthusiasm and energy, which are associated with work engagement (Langelaan, Bakker, Schaufeli & Van Doornen, 2006; Schaufeli & Salanova, 2007). In addition, these positive feelings as a result of strengths use and deficit improvement may reduce the negative effects of burnout (Erickson & Grove, 2007), and may reduce stress. Therefore, it is expected that PBSU and PBDI will likely reduce employees' levels of burnout.

The above arguments provide a clear basis for the assessment of the reliability and validity of the SUDIQ. However, once the SUDIQ has been proven to be reliable and valid, it is essential that the instrument is free from bias and equivalence, especially within a multicultural context such as South Africa. Bias refers to differences in scores obtained from



measures that do not correspond to differences in the underlying trait or ability being measured (Van de Vijver & Tanzer, 1997). Equivalence, on the other hand, is the absence of bias (Van de Vijver & Tanzer, 2004). For the purpose of this study, the item bias, structural equivalence (also addressing the construct bias), measurement unit equivalence and full score equivalence (Van de Vijver & Tanzer, 2004) of the SUDIQ will be assessed. *Item bias* (the presence of differential item functioning) is mostly found as a result of the poor translation of items, ambiguous items, differences in the connotative meaning and/or appropriateness of the item content, etc. (Van de Vijver & Leung, 2011). Two types of item bias relevant to this study are uniform bias and non-uniform bias. Uniform bias is present when the bias on scores is consistently the same for all score levels on an instrument. Non-uniform bias is present when the size of the difference varies across different levels, and consequently the bias is not identical for all score levels (Matsumoto & Van de Vijver, 2011; Mellenbergh, 1982; Van de Vijver & Leung, 1997). *Structural equivalence* (also known as configural invariance; Van Herk, Poortinga & Verhallen, 2005) assesses whether the same factor structure of the instrument is valid (i.e. the same number of factors, with the same items loading on each factor) for each of the groups. *Measurement unit equivalence* (or metric invariance; Van Herk, Poortinga & Verhallen, 2005) indicates the equivalence of the factorial loading parameters across the three ethnic groups. Scalar or *full-score equivalence* (also known as scalar invariance; Van Herk et al., 2005) tests whether the item intercepts and factor loadings are equal across groups when the same item is regressed on the latent factor (Schmitt & Kuljanin, 2008; Vandenberg, 2002; Vandenberg & Lance, 2000). The confirmation of scalar equivalence allows the researcher to safely draw the conclusion that the average scores obtained in two cultures are different or equal (Van de Vijver, 2011).

Only when empirical research has demonstrated that the SUDIQ is unbiased and equivalent for use among the different ethnic groups in South Africa can the results from future research using this instrument be interpreted more accurately. Therefore, the primary objective of research article 2 of this thesis is to examine the item bias, structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ.

The existence of an instrument to measure POSSU, POSDI, PBSU and PBDI that is reliable, valid, free from bias and is equivalent, may pave the way to explore the possible outcomes of these constructs. As mentioned earlier, previous studies have demonstrated some positive outcomes of strengths use and deficit improvement. However, these mentioned studies

focused exclusively on the effect of either strengths or weaknesses on outcomes. Many researchers, however, promote a balanced approach where both employee strengths and deficits are considered equally important (Rust et al., 2009; Sirmon et al., 2010), and that an exclusive focus on either one of the two would be inappropriate. Despite this promotion of a combined approach, no previous empirical research has been done to examine whether an exclusive focus on strengths, an exclusive focus on deficits or a combined approach where both strengths and deficits receive an equal amount of attention, may be more beneficial for the individual or the organisation.

In the current study, it is argued that using strengths and improving deficits (and therefore considering strengths use and deficit improvement as equally important) may yield more positive results for the organisation than an exclusive focus on either strengths use or deficit improvement. This argument is based on the hypothesis that the whole is greater than the sum of its parts. Considering POSSU and POSDI as complimentary to each other may strengthen its effect on organisational outcomes. Following this argument, the focus of research article 3 of this thesis is to examine whether an exclusive focus on POSSU, an exclusive focus on POSDI, or a combination of these two will lead to the best organisational outcomes. The four organisational outcomes relevant to this study include work engagement, learning, job satisfaction and turnover intention.

In this study, it is argued that strengths use and deficit improvement will lead to higher work engagement. This argument follows previous research that suggested that when employees apply their strengths at work they tend to feel more energised, and are therefore more vigorous (Biswas-Diener, 2010), and may derive more enjoyment from their work (which is associated with dedication). Similarly, when employees experience growth and learning they are likely to have higher work engagement (Bakker, 2011; Bakker, Demerouti & Schaufeli, 2003; Mauno, Kinnunen, Mäkikangas & Feldt, 2010; Schaufeli, Bakker & Van Rhenen, 2009). It can therefore be expected that the growth and learning as a result of deficit improvement may yield similar results. Therefore, it is reasonable to expect POSSU and POSDI to increase the work engagement levels of employees.

Secondly, this study will examine whether POSSU and POSDI is associated with increased learning. Learning is a component of thriving. Thriving is marked both by a sense of learning and a sense of vitality. Learning is the dimension of thriving used to describe the acquiring

and application of knowledge and skills (Spreitzer, Sutcliffe, Dutton, Sonenshein & Grant, 2005). Vitality, on the other hand, is a concept very similar to the vigour dimension of work engagement, and for this reason this study will only focus on the learning component of thriving. It is reasoned that both POSSU and POSDI may be related to learning, since individuals acquire new skills when improving their deficits. Furthermore, when using one's strengths, one would typically apply your knowledge. Therefore, it is hypothesised that both POSDI and POSSU will lead to higher levels of learning.

Job satisfaction can be defined as the “positive (or negative) evaluative judgment one makes about one's job or job situation” (Weiss, 2002, p. 175). On the other hand, turnover intention is “a conscious and deliberate wilfulness to leave the organisation” (Tett & Meyer, 1993, p. 262). Using one's strengths and improving one's deficits are both associated with increased positivity towards one's job. When employees feel that they can use their strengths at work, they typically enjoy their work more and may feel more optimistic about their job (Littman-Ovadia & Steger, 2010; Peterson & Seligman, 2004). Similarly, when employees feel that their organisation provides them with opportunities to improve their weaknesses they may feel more valued by the organisation (Metz et al., 2009; Xanthopoulou et al., 2007) and may feel that this will increase their skills and levels of competence to do their jobs. This, in turn, may leave them feeling more positive and optimistic about their jobs and the organisation. Previous research has consistently shown that individuals who are satisfied with their work are less likely to leave the organisation (Egan, Yang & Bartlett, 2004; Lambert, Hogan & Barton, 2001). Therefore, the positive attitude towards employees' job may increase their levels of job satisfaction and may discourage turnover intentions of employees. It is therefore expected that strengths use (POSSU) and deficit improvement (POSDI) may be associated with higher levels of job satisfaction and lower levels of turnover intention.

In line with the above arguments, the objective of research article 3 of this thesis is to examine whether an exclusive focus on POSSU, an exclusive focus on POSDI, or a combination of these two will lead to higher levels of work engagement, learning and job satisfaction, and to lower levels of turnover intention.

From the above arguments, it becomes clear that POSSU and POSDI (the organisational dimensions of strengths use and deficit improvement) may be related to work engagement. It is, however, not clear what the relationships between PBSU and PBDI (the two individual

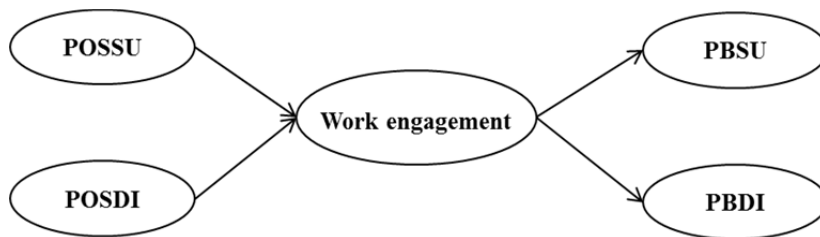
dimensions of strengths use and deficit improvement) with work engagement are. Indeed, the constructs PBSU and PBDI have been unexplored in the literature, and have not been contextualised in empirical studies, and therefore its relationships with other constructs are yet to be examined. Of interest in this study is to examine the role of PBSU and PBDI in the relationship between POSSU and POSDI, and work engagement. More specifically, it is of interest whether PBSU and PBDI are antecedents or outcomes of work engagement, since sound arguments can be made for both. It can be expected that (1) work engagement mediates the relationship between POSSU and PBSU and between POSDI and PBDI. On the other hand, it can be argued that (2) PBSU mediates the relationship between POSSU and work engagement and PBDI mediates the relationship between POSDI and work engagement.

In the literature, arguments can be found for both possibilities. In the first instance, it is argued that POSSU and POSDI may lead to increased work engagement, and, in turn, that work engagement influences the proactive behaviour of employees (i.e. PBSU and PBDI). In this instance, proactive behaviour (and in this case PBSU and PBDI) is an outcome of work engagement, and engagement a possible mediator between POSSU/POSDI and PBSU and PBDI. These relationships are supported by previous research, which suggested that when employees enjoy their work and care about their job (i.e. dedication), they will be expected to be willing to exert extra effort in work-related activities to keep their work conditions positive (Bakker, 2011; Sonnentag, 2003), of which the latter may include opportunities to use their strengths and improve their deficits. Furthermore, to engage in proactive behaviour at work, it is necessary for employees to have the energy (i.e. vigour) to exert extra effort in additional activities (Sonnentag, 2003) such as strengths use and deficit improvement.

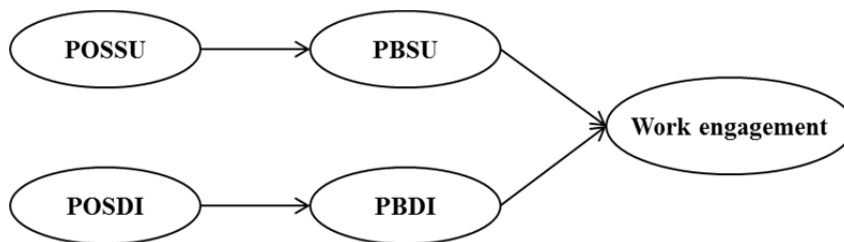
In the second instance, it can be reasoned that in an organisation where employees are provided with the opportunity to use their strengths and improve their deficits, employees feel more comfortable to do so, and consequently may display more proactive behaviour to use their strengths and improve their deficits at work – therefore, POSSU will lead to PBSU and POSDI will lead to PBDI. In turn, it can be expected that PBSU and PBDI may lead to work engagement. In this case, work engagement is the outcome of PBSU and PBDI, where proactive behaviour (PBSU and PBDI) is the possible mediator in the relationship between POSSU/POSDI and work engagement. In support of this possibility, it can be argued that individuals who display proactive behaviour may tend to adapt their work environment, and specifically their job demands and job resources, to create a better congruence between

themselves and their jobs, a process termed job crafting (Tims & Bakker, 2010). This, in turn, may lead to higher work engagement. This relationship between proactive behaviour and work engagement has been confirmed in previous research (Bakker, Tims & Derks, 2012).

From the above, it is clear that both these models are viable (see Figure 1 and Figure 2 below). Therefore, to clarify the relationships between these variables, the primary objective of research article 4 of this study is to determine which of the following two models is a better fitting structural model: (a) a model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI or (b) a model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement?



*Figure 1: Work engagement as predictor of PBSU and PBDI and possible mediator between POSSU and PBSU and POSDI and PBDI*



*Figure 2: Work engagement as outcome of PBSU and PBDI and PBSU and PBDI possible mediators between POSSU/POSDI and work engagement*

The above problem statement has raised a number of research questions, which will be addressed in this thesis:

The research questions of research article 1 are:

- How can perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) be conceptualised?
- What will the properties of a questionnaire that measures the four constructs, POSSU, POSDI, PBSU and PBDI (i.e. the Strengths Use and Deficit Improvement Questionnaire; SUDIQ) be?
- What is the reliability, construct validity, convergent and criterion-related validity of the SUDIQ?
- What recommendations can be made for future research?

The research questions of research article 2 are:

- Is the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) free from item bias, and does it prove to have construct equivalence, measurement unit equivalence and full-score equivalence in a heterogeneous working population in South Africa?
- What recommendations can be made for future research?

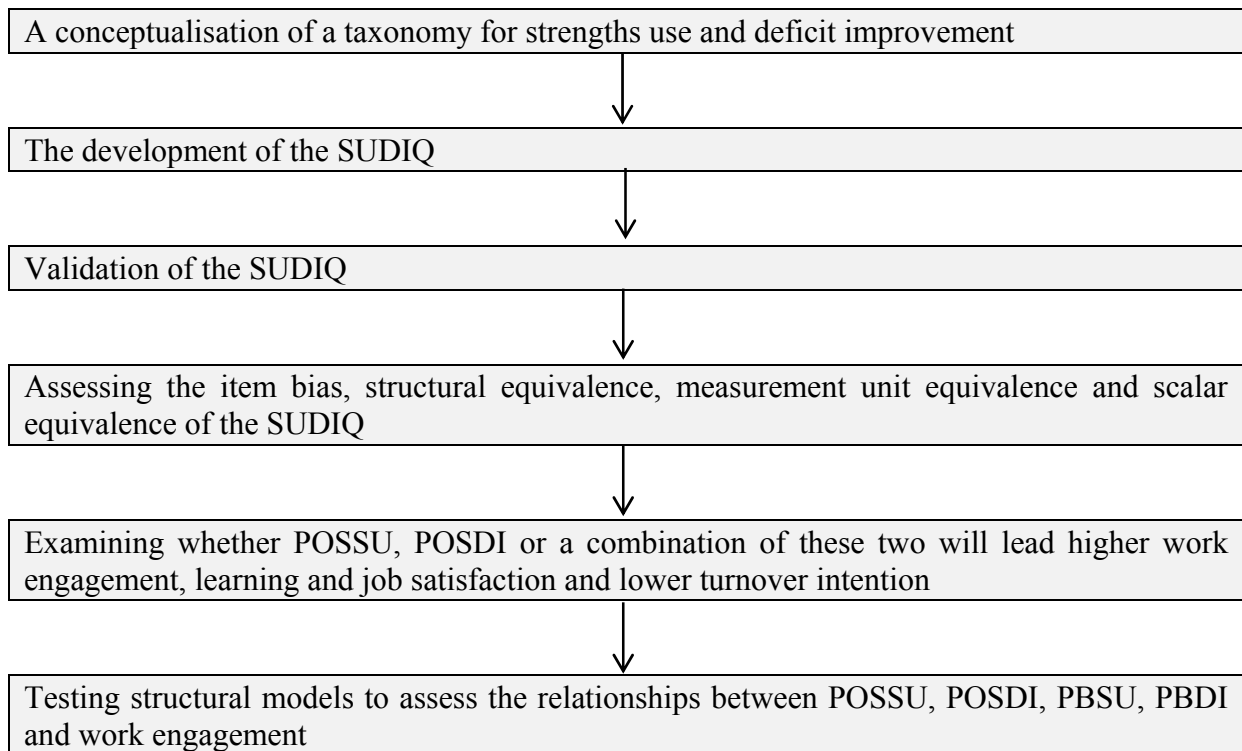
The research questions of research article 3 are:

- Do POSSU and POSDI predict work engagement, learning, job satisfaction and turnover intention among teachers in South Africa?
- Which of POSSU, POSDI or a combined approach is associated with higher levels of work engagement, learning and job satisfaction and lower turnover intention among teachers in South Africa?
- What recommendations can be made for future research?

The research questions of research article 4 are:

- Which of the following two models is a better fitting structural model: (a) a model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI or (b) a model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement?
- What recommendations can be made for future research?

The above research questions is summarised in the flowchart below, presenting the research process followed in this study:



## 1.2 CONTRIBUTION OF THIS RESEARCH

Addressing the above research questions will contribute significantly to the literature and practice of industrial and organisational psychology, and specifically to the positive psychology literature. More specifically, contextualising and defining employees' strengths use and deficit improvement provides the opportunity to conduct future research on these constructs in a systematic manner and within a specific framework. Therefore, the results from future studies may provide insight into the phenomena of strengths and deficits and the dynamic functioning of these constructs within an organisational context.

In addition, by formulating a clear definition of POSSU, POSDI, PBSU and PBDI, it is possible to develop a measuring instrument (the Strengths Use and Deficit Improvement Questionnaire – SUDIQ) to study these variables in future research. The validation of this instrument also demonstrates the dependability of the SUDIQ for use within the South Africa context.

In addition, by providing evidence that the SUDIQ is free from bias and is equivalent across ethnic groups in South Africa, it will allow future research utilising this instrument to draw more accurate and less subjective conclusions in their empirical studies.

The newly conceptualised constructs POSSU, POSDI, PBSU and PBDI have not been examined in the literature. In this research, it is attempted to start exploring the relationships between these four constructs and other variables of interest in organisational literature and practice. More specifically, by examining whether strengths use, deficit improvement or a focus on both may yield more positive results for the organisation in terms of employees' work engagement, learning, job satisfaction and turnover intentions, will provide organisations with information on whether it would be more beneficial to spend resources on the use of employees' strengths, on the improvement of their deficits, or whether an equal amount of attention should be spent on both for optimal organisational outcomes. The benefits of high levels of work engagement, learning and job satisfaction and low turnover intentions are well documented in the literature, and this study may provide insight into how organisations can manage employees' strengths and deficits to optimise these outcomes.

Finally, this study will compare two competing models, where, in model 1 work engagement mediates the relationship between POSSU and PBSU, and between POSDI and PBDI and, in model 2, where proactive behaviour (PBSU and PBDI) mediates the relationship between POSSU and POSDI with work engagement. This will clarify the contrasting results in the literature as to whether proactive behaviour (in the form of PBSU and PBDI) is an antecedent or outcome of work engagement. The clarification of this relationship will add to existing literature by expanding on the theoretical models related to these constructs. Furthermore, this will pave the way for future research to examine the causal relationship between these variables through longitudinal studies.

## **1.3 RESEARCH OBJECTIVES**

### **1.3.1 General objectives**

The general objective of this research is to develop and validate the Strengths Use and Deficit Improvement Questionnaire (SUDIQ), and to examine the relationships of the four SUDIQ



dimensions with important organisational outcomes. More specifically, the general objective of each article will be as follows:

- Research article 1: To conceptualise a taxonomy of strengths use and deficit improvement and to develop and validate the Strengths Use and Deficit Improvement Questionnaire (SUDIQ).
- Research article 2: To examine the item bias, structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ.
- Research article 3: To examine whether POSSU, POSDI or a combination of these two will lead to the best organisational outcomes (i.e. work engagement, learning, job satisfaction and turnover intention).
- Research article 4: To determine which of the following two models is a better fitting structural model: (a) a model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI or (b) a model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement.

### **1.3.2 Specific objectives**

The general objectives can be divided into specific objectives for each of the research articles of this thesis. For each of the articles, a thorough literature review was done to determine how the variables included in this research are conceptualised in the literature.

The specific objectives of research article 1 are:

- To conceptualise perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI).
- To develop a questionnaire that measures the four constructs, POSSU, POSDI, PBSU and PBDI (i.e. the Strengths Use and Deficit Improvement Questionnaire; SUDIQ).
- To assess the reliability, construct validity, convergent validity and criterion-related validity of the SUDIQ in a heterogeneous working population in South Africa.
- To make recommendations for future research.

The specific objectives of research article 2 are:

- To examine the item bias, construct equivalence, measurement unit equivalence and full-score equivalence of the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) in a heterogeneous working population in South Africa.
- To make recommendations for future research.

The specific objectives of research article 3 are:

- To explore the relationships between POSSU, POSDI, work engagement, learning, job satisfaction and turnover intention.
- To determine whether POSSU and POSDI predict work engagement, learning, job satisfaction and turnover intention among teachers in South Africa.
- To determine whether POSSU, POSDI or a combined approach is associated with higher levels of work engagement, learning and job satisfaction and lower turnover intention among teachers in South Africa.
- To make recommendations for future research.

The specific objectives of research article 4 are:

- To determine which of the following two models is a better fitting structural model: (a) a model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI or (b) a model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement.
- To make recommendations for future research.

## **1.4 RESEARCH HYPOTHESES**

### **1.4.1 Research article 1:**

- H1: The SUDIQ consists of four distinct factors (i.e. confirming the factorial validity).
- H2: POSSU (2a) and POSDI (2b) will be positively related to autonomy and participation in decision-making (i.e. confirming the convergent validity).
- H3: PBSU (3a) and PBDI (3b) will be positively related to self-efficacy (i.e. confirming the convergent validity).

- H<sub>4</sub>: POSSU (4a) and POSDI (4b) will be positively related to work engagement (i.e. confirming the criterion-related validity).
- H<sub>5</sub>: POSSU (5a) and POSDI (5b) will be negatively related to burnout (i.e. confirming the criterion-related validity).
- H<sub>6</sub>: PBSU (6a) and PBDI (6b) will be positively related to work engagement (i.e. confirming the criterion-related validity).
- H<sub>7</sub>: PBSU (7a) and PBDI (7b) will be negatively related to burnout (i.e. confirming the criterion-related validity).

#### **1.4.2 Research article 2:**

- H<sub>1</sub>: The SUDIQ is an unbiased instrument to measure POSSU, POSDI, PBSU and PBDI across ethnic groups in South Africa.
- H<sub>2</sub>: The SUDIQ has construct equivalence, measurement unit equivalence and full-score equivalence to measure POSSU, POSDI, PBSU and PBDI across ethnic groups in South Africa.

#### **1.4.3 Research article 3:**

- H<sub>1a</sub>: There is a positive relationship between POSSU and work engagement
- H<sub>1b</sub>: There is a positive relationship between POSDI and work engagement
- H<sub>1c</sub>: In organisations where a combined approach (focusing on both POSSU and POSDI) is followed, employees will have higher levels of work engagement compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follow a deficit-based approach (exclusive focus on deficits)
- H<sub>2a</sub>: There is a positive relationship between POSDI and learning
- H<sub>2b</sub>: There is a positive relationship between POSSU and learning
- H<sub>2c</sub>: In organisations where a combined approach (focusing on both POSSU and POSDI) is followed, employees will have higher levels of learning compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follows a deficit-based approach (exclusive focus on deficits).

- H3a: There is a positive relationship between POSSU and job satisfaction.
- H3b: There is a positive relationship between POSDI and job satisfaction.
- H4a: There is a negative relationship between POSSU and turnover intention.
- H4b: There is a negative relationship between POSDI and turnover intention
- H5a: In organisations where a combined approach (focusing on both POSSU and POSDI) is followed, employees will have higher levels of job satisfaction compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follows a deficit-based approach (exclusive focus on deficits).
- H5b: In organisations where a combined approach (focusing on both POSSU and POSDI) is followed, employees will have lower levels of turnover intention compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follows a deficit-based approach (exclusive focus on deficits).

#### **1.4.4 Research article 4:**

- H1: A structural model with engagement as a predictor of PBSU and PBDI (and therefore a possible mediator between POSSU and PBSU and between POSDI and PBDI) will be a better model compared to a structural model where proactive behaviour (PBSU and PBDI) is the predictor of work engagement (and therefore possible mediator between POSSU/POSDI and work engagement).

## **1.5 RESEARCH DESIGN**

### **1.5.1 Research approach**

In this research, a quantitative deductive research approach was followed for the purpose of using numeric data to test theory and examine the relationships between the variables relevant to this research (Saunders, Lewis & Thornhill, 2009). A cross-sectional survey design was followed suggesting that the variables in this study were examined at one particular point in time, and not across time. The data was collected by means of questionnaires (Saunders et al., 2009). This research was exploratory and descriptive in nature. The purpose of exploratory research is to gain a better understanding of a

phenomenon, whereas descriptive research aims to describe a situation by providing measures of an event or activity (Hair, Celsi, Money, Samouel & Page, 2011).

## **1.5.2 Research method: Research article 1**

### ***1.5.2.1 Research participants and procedure***

To reach the objectives of research article 1, both a pilot study and a validation study were conducted. For the purpose of the pilot study a total of 33 preliminary items were developed to measure POSSU, POSDI, PBSU and PBDI. The instrument was then administered to a heterogeneous sample of 241, consisting of employees from various occupational and biographical backgrounds. After the data was collected the items were assessed by means of exploratory factor analysis. Since all the items performed well, none of the items were omitted. Subsequently a validation study was conducted to determine the suitability of the instrument for use in the South African context.

In the validation study a heterogeneous sample was drawn based on the availability of the participants ( $N = 699$ ). The sample was diverse in terms of age, gender, language, ethnicity, education and industry. All participants were full-time employees working under a superior across different industries in South Africa. All participants had to have a good command of the English language, since all the instruments were in English. This was based on the participants' own evaluation of their English proficiency.

The various organisations' management gave their consent to be included in the study. The surveys were delivered by hand or in electronic format, depending on the participants' preference. Questionnaires were distributed to employees who were available at their respective workplaces at the given time of questionnaire distribution. Previous research has indicated that the method bias associated with paper-and-pencil versus electronic measures was minimal (Davis, 1999; Hardré, Crowson, Xie & Ly, 2006; Richman, Kiesler, Weisband & Drasgow, 1999); therefore, this was not considered to be problematic. The participants were allowed to complete the questionnaires at a time and place convenient to them. Each participant was informed of the purpose of the study and that they could withdraw at any stage of the research process. Their anonymity and confidentiality were also assured. A response rate of 46.6% was obtained.

### 1.5.2.2 Measuring instruments

A *biographical questionnaire* was included to collect the personal information of the participants, including age, race, gender, language, education level and job tenure.

The self-developed *Strengths Use and Deficit Improvement Questionnaire* (SUDIQ) was used to measure the following four dimensions: Perceived organisational support for strengths use (POSSU; 8 items, i.e. “This organisation uses employees’ strengths”), perceived organisational support for deficit improvement (POSDI; 8 items, i.e. “In this organisation, employees receive training to improve their weak points”), proactive behaviour towards strengths use (PBSU; 9 items, i.e. “In my job, I try to apply my talents as much as possible”) and proactive behaviour towards deficit improvement (PBDI; 8 items, i.e. “I engage in activities to develop my weak points at work”). The SUDIQ is measured on a seven-point Likert-type scale that ranges from 0 (almost never) to 6 (almost always).

*Job resources* were measured with the Experience and Evaluation of Work (VBBA; Van Veldhoven & Meijman, 1994; Van Veldhoven, De Jonge, Broersen, Kompier & Meijman, 2002). The two job resources included in this study are autonomy (6 items; e.g. “Do you have influence in the planning of your work activities?”) and participation in decision-making (4 items; e.g. “Can you participate in decisions affecting issues related to your work?”). These items were measured on a four-point Likert scale ranging from (1) always to (4) never. In previous studies, Cronbach’s alpha coefficients of 0.91 were obtained for autonomy (Van Emmerik, Schreurs, De Cuyper, Jawahar & Peeters, 2012) and 0.87 for participation in decision-making (Van Veldhoven, Meijman, Broersen & Fortuin, 1997). Sufficient reliabilities were also found for autonomy ( $\alpha = 0.88$ ) and participation ( $\alpha = 0.82$ ) in South Africa (Botha & Mostert, 2014).

*Occupational self-efficacy* was measured with the short version of the Occupational Self-Efficacy Scale (Rigotti, Schyns & Mohr, 2008). This is a six-item instrument (i.e. “At my job, I am mentally very resilient”), measured on a scale from 1 (not at all true) to 6 (completely true). Cronbach’s alpha coefficients ranging from 0.85 to 0.90 were reported.

*Work engagement* was assessed with the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2002). This study focused on the two core dimensions of work engagement, namely

vigour and dedication (c.f. Llorens et al., 2007; Schaufeli & Bakker, 2004; Van Wijhe et al., 2011). Vigour is measured with six items (e.g. “At my work, I feel that I am bursting with energy”) and dedication with five items (e.g. “I am enthusiastic about my job”), and all items are measured on a seven-point frequency scale ranging from 0 (never) to 6 (everyday). This two-factor structure of the UWES has been confirmed in previous South African studies, with Cronbach’s alpha coefficients ranging from 0.73 to 0.78 for vigour and 0.85 to 0.89 for dedication (Mostert, Peeters & Rost, 2011; Rothmann, 2008; Storm & Rothmann, 2003).

*Burnout* was measured with the Maslach Burnout Inventory – General Survey (MBI-GS; Schaufeli et al., 1996) and included the following two core dimensions of burnout (c.f. Schaufeli & Enzmann, 1998; Schaufeli et al., 2002): Exhaustion (5 items, e.g. “I feel emotionally drained by my work”;  $\alpha = 0,87$ ) and cynicism (4 items, e.g. “I have become less enthusiastic about my work”;  $\alpha = 0,84$ ). Burnout as a two-dimensional construct has also been proven within the South African context (i.e. Demerouti, Mostert & Bakker, 2010; Mostert et al., 2011) and Cronbach’s alpha coefficients ranged from 0.82 to 0.83 for exhaustion and 0.73 to 0.78 for cynicism (De Beer, Pienaar & Rothmann (Jr), 2014; Demerouti, et al., 2010).

### **1.5.2.3 Statistical analysis**

The IBM SPSS 22.0 program (IBM SPSS, 2013) and the Mplus 7.2 program (Muthén & Muthén, 2014) were used to determine the psychometric properties of the newly developed SUDIQ. The factorial validity was assessed through exploratory factor analysis (EFA) and confirmatory factor analyses (CFA). For EFA, eigenvalues of  $\geq 1$  and the scree plot were used as an indicator of the number of factors to extract. The following fit indices were considered to assess the goodness of model fit in the CFA analysis:  $\chi^2$  statistic, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA) and the Standardised Root Mean Square Residual (SRMR). For the CFI and TLI, acceptable fit is considered at a value of 0.90 and above (Hoyle, 1995; Byrne, 2010). According to Browne and Cudeck (1993), for the RMSEA, a value of 0.05 or less indicates a good fit, but values of 0.08 and lower are also considered an acceptable model fit. The cut-off point for SRMR was set at smaller than 0.05 (Hu & Bentler 1999). The Akaike

information criterion (AIC) and sample adjusted Bayesian information criterion (BIC) were used to compare the fit of competing models.

The relationships between the constructs for the assessment of convergent validity and criterion-related validity were assessed with Pearson correlations. The statistical significance was set at the 95% confidence interval ( $p \leq 0.05$ ), and practical significance  $r \geq 0.30$  for medium effect and  $r \geq 0.50$  for large effect

### **1.5.3 Research method: Research article 2**

#### **1.5.3.1 *Research participants and procedure***

A heterogeneous sample of 858 employees from various sectors, including mining, banking, retail, manufacturing, and education in South Africa was drawn based on availability to participate. The sample was also diverse in terms of age, ethnicity, gender, language, education level and job tenure. The instrument used in this study was only available in English; therefore, all the participants had to have a good command of English. This was based on the participants' own evaluation of their English proficiency.

Permission was obtained from the various organisations to collect the data. Participants had been given the choice of completing the survey on paper or electronically. As previous research suggested that the method bias between these two modes of administration is minimal (Davis, 1999; Hardré et al., 2006; Richman et al., 1999), this was not considered to be problematic. The surveys were delivered by hand and again collected from the participants. Informed consent was obtained from the participants and their confidentiality and anonymity were assured.

#### **1.5.3.2 *Measuring instruments***

A *biographical questionnaire* was included to collect the personal information of the participants, including age, race, gender, language, education level and job tenure.

The newly developed *Strengths Use and Deficit Improvement Questionnaire* (SUDIQ) was used to examine perceived organisational support for strengths use (POSSU), perceived



organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI). The SUDIQ is a 33-item instrument that measures items on a seven-point Likert-type scale ranging from 0 (almost never) to 6 (almost always). Example items include: POSSU: “This organisation uses employees’ strengths”, POSDI “In this organisation, employees receive training to improve their weak points”, PBSU “In my job, I try to apply my talents as much as possible” and PBDI “I engage in activities to develop my weak points at work”.

### **1.5.3.3 Statistical analysis**

To investigate the differential item functioning (DIF) of the items (i.e. to determine the presence of uniform and non-uniform item bias), stepwise multiple regression in SPSS 22.0 (IBM SPSS, 2013) was performed. For each of the items, a three-step regression was conducted. In step 1, the scale score was regressed on the item score; in step 2, ethnicity was included; and in step 3, an interaction between the scale score and ethnicity was included. If step 2 in the regression is significant, the item is uniformly biased, and in the case where step 3 is significant, it can be concluded that the item is non-uniformly biased (Van de Vijver & Poortinga, 1997). Significance was set at the value  $p \geq 0.05$ .

To test the equivalence (i.e. configural, metric and scalar invariance) of the SUDIQ, confirmatory factor analysis (CFA) was conducted with Mplus 7.2 (Muthén & Muthén, 2014). Maximum likelihood estimation was implemented and the fit indices were considered: the  $\chi^2$  statistic, the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI), and CFI and TLI values above 0.90 were considered an acceptable fit (Byrne, 2010; Hoyle, 1995). Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR) were also considered and values below 0.08 are indicative of an acceptable model fit (Browne & Cudeck, 1993). The Akaike information criterion (AIC) and sample adjusted Bayesian information criterion (BIC) were used to compare the fit of competing models. However, it should be noted that these cut-off points should only be considered as guidelines, as there is little consensus regarding the values for adequate fit (Lance, Butts & Michels, 2006). The model fit of the configural, metric and scalar invariance models is compared to each other (metric against configural, scalar against configural and

scalar against metric), and if in all cases the model significance is  $p \geq 0.05$ , the presence of configural, metric and scalar invariance is confirmed.

### **1.5.4 Research method: Research article 3**

#### **1.5.4.1 *Research participants and procedure***

The convenient availability sample consisted of public school teachers in the Western Cape in South Africa ( $N = 266$ ). The sample was diverse in terms of age, gender, ethnicity, level of education and job tenure. Only participants with a good command of English were included in this study, since all the measuring instruments were in English. This was based on the participants' own evaluation of their English proficiency.

Permission was obtained from the Western Cape Department of Education as well as the principals of the participating schools. Participants were assured that participation is voluntary and that they can withdraw at any time. Their anonymity was also guaranteed. The measuring instrument took approximately 40 minutes to complete and a response rate of 54.20% was obtained.

#### **1.5.4.2 *Measuring instruments***

A *biographical questionnaire* was included to collect the personal information of the participants, including age, race, gender, language, education level and job tenure.

The new *Strengths Use and Deficit Improvement Questionnaire* (SUDIQ) was used to measure perceived organisational support for strengths use (POSSU) and perceived organisational support for deficit improvement (POSDI). The biased items identified in article 2 of this thesis were omitted from this study. These constructs were measured on a seven-point Likert-type scale ranging from 0 (never) to 6 (almost always). POSSU was measured with five items (e.g. "This organisation makes the most of people's talents"). POSDI was also measured with five items (e.g. "In this organisation employees receive training to improve their weak points").

*Work engagement* was measured with two scales from the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2002). The two core constructs of work engagement (c.f. Llorens et al., 2007; Schaufeli & Bakker, 2004; Van Wijhe et al., 2011), namely vigour (six items, e.g. “At my work, I feel that I am bursting with energy”) and dedication (five items, e.g. “I am enthusiastic about my job”) were measured as an indication of work engagement. All items are measured on a seven-point frequency scale ranging from 0 (never) to 6 (everyday). Previous South African studies confirmed the suitability of the UWES with Cronbach’s alpha coefficients ranging from 0.73 to 0.78 for vigour and from 0.85 to 0.89 for dedication (Mostert et al., 2011; Rothmann, 2008; Storm & Rothmann, 2003).

*Learning* was measured with the *Thriving at Work Scale* (Porath, Spreitzer, Gibson & Garnett, 2011). Thriving is measured with learning, consisting of five items (e.g. “I continue to learn more and more as time goes by”) and vitality, measured with five items (e.g. “I have energy and spirit”). The items are assessed on a scale from 0 (strongly disagree) to 6 (strongly agree). The internal consistency of the instrument was confirmed in previous studies with Cronbach’s alpha coefficients ranging from 0.88 to 0.93 (Paterson, Luthans & Jeung, 2014; Porath, et al., 2011).

The *Job Satisfaction Scale*, developed by Hellgren, Sjöberg and Sverke (1997) (based on Brayfield & Rothe, 1951), was used to examine job satisfaction. This instrument consists of three items on a Likert scale from 1 (strongly agree) to 5 (strongly disagree). An example item includes “I am satisfied with my job”. The reliability of this instrument has been confirmed in South Africa ( $\alpha = 0.75$ ; Masia & Pienaar, 2011).

*Turnover intention* was measured with a scale developed by Sjöberg and Sverke (2000). The items are measured on a five-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). A total of three items are included in this instrument (e.g. “I am actively looking for other jobs”). This scale has been proven to be reliable within the South African context with Cronbach’s alpha coefficients ranging between 0.74 (Pienaar, Sieberhagen & Mostert, 2007) and 0.79 (Diedericks & Rothmann, 2014).

#### **1.5.4.3 Statistical analysis**

The data was analysed by means of the SPSS program (IBM SPSS, 2013) and Mplus 7.2 (Muthén & Muthén, 2014). The reliability of the instruments was assessed with Cronbach's alpha coefficients, with values larger than 0.70 indicating satisfactory internal consistency (Nunnally & Bernstein, 1994). Relationships between the variables were examined with Pearson correlations and cut-off points of 0.30 (medium effect) and 0.50 (large effect) were set for the practical significance of coefficients (Cohen, 1988). The confidence interval level for statistical significance was set at a value of 95% ( $p \leq 0.05$ ).

Structural equation modelling (SEM) was used to assess the relationships between the variables. The goodness-of-fit of the models was tested using the traditional  $\chi^2$  statistic, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardised root mean square residual (SRMR). Although there is no consensus regarding the cut-off values for adequate fit exists (Lance et al., 2006), general guidelines were followed and fit was considered adequate if CFI and TLI values were larger than 0.90 (Byrne, 2010; Hoyle, 1995). A RMSEA value of 0.05 or less indicates a good fit, while values between 0.05 and 0.08 represent a moderately good model fit (Browne & Cudeck, 1993; Van de Schoot, Lugtig & Hox, 2012). According to Hu and Bentler (1999), the SRMR value should be smaller than 0.05. The Akaike information criterion (AIC) and sample adjusted Bayesian information criterion (BIC) were used to compare the fit of competing models, where the model with the lowest value suggests superior fit (Van de Schoot et al., 2012).

One-way multivariate analysis of variance (MANOVA) was used to assess whether differences exist in the work engagement, learning, vitality, job satisfaction and turnover intention between different groups (representing different levels of POSSU and POSDI). The Wilk's Lambda statistic was used as an indicator of the significance of group differences (Mayers, 2013). Subsequent analysis of variance (ANOVA) was then conducted to examine the differences for each outcome variable. In the case where significant differences were found, the Games-Howell post hoc test was used to examine the nature of these differences.

## **1.5.5 Research method: Research article 4**

### **1.5.5.1 *Research participants and procedure***

The data was collected among various organisations in the financial industry, including accounting firms, insurance companies and banks in South Africa. This convenient sample (N = 378) was diverse in terms of age, race, gender, education levels and job tenure. All the instruments used to collect the data were in English, and therefore only employees with a good command of English were included in the study. This was based on the participants' own evaluation of their English proficiency.

The various organisations were contacted and permission was obtained to collect the data. Employees had a choice of completing the questionnaire electronically or on paper. Previous research found method bias between these two administration modes to be minimal, (Davis, 1999; Hardré et al., 2006; Richman et al., 1999), and therefore it was decided to allow for both. Participation was completely voluntary and the participants were assured of the confidentiality of their information. The questionnaires took approximately 40 minutes to complete.

### **1.5.5.2 *Measuring instruments***

A *biographical questionnaire* was included to collect the personal information of the participants, including age, race, gender, language, education level and job tenure.

*Strengths use and deficit improvement* were measured by means of the newly developed Strengths Use and Deficit Improvement Questionnaire (SUDIQ). The biased items identified in article 2 of this thesis were omitted from this study. POSSU was measured with five items (e.g. "This organisation makes the most of people's talents"), POSDI with six items ("In this organisation employees receive training to improve their weak points"), PBSU with seven items (e.g. "I seek opportunities to do my work in a manner that best suits my strong points") and PBDI with five items (e.g. "In my job, I make an effort to improve my limitations"). All items were measured on a seven-point Likert-type scale ranging from 0 (almost never) to 6 (almost always).

*Work engagement* was assessed with two dimensions of the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2002). The core constructs of work engagement, vigour and dedication (c.f. Llorens et al., 2007; Schaufeli & Bakker, 2004; Van Wijhe et al., 2011) were assessed on a seven-point frequency scale ranging from 0 (never) to 6 (everyday). Vigour was measured with six items (e.g. “At my work, I feel that I am bursting with energy”) and dedication with five items (e.g. “I am enthusiastic about my job”). Previous South African studies confirmed the reliability of the UWES with Cronbach’s alpha coefficients ranging from 0.73 to 0.78 for vigour and from 0.85 to 0.89 for dedication (Mostert et al., 2011; Rothmann, 2008; Storm & Rothmann, 2003).

### **1.5.5.3 Statistical analysis**

The data was analysed by means of the SPSS program (IBM SPSS, 2013) and Mplus 7.2 (Muthén & Muthén, 2014). The reliability of the instruments was assessed with Cronbach’s alpha coefficients, with values larger than 0.70 indicating satisfactory internal consistency (Nunnally & Bernstein, 1994). Relationships between the variables were examined with Pearson correlations and cut-off points of 0.30 (medium effect) and 0.50 (large effect) were set for the practical significance of coefficients (Cohen, 1988). The confidence interval level for statistical significance was set at a value of 95% ( $p \leq 0.05$ ).

Confirmatory factor analysis (CFA) was conducted to assess the fit of the measurement model. Furthermore, structural equation modelling (SEM) was used to test the structural mediation model. The goodness-of-fit of the models was tested using the traditional  $\chi^2$  statistic, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardised root mean square residual (SRMR). Although there is no consensus regarding the cut-off values for adequate fit (Lance et al., 2006), general guidelines were followed and fit was considered adequate if CFI and TLI values were larger than 0.90 (Byrne, 2010; Hoyle, 1995). An RMSEA value of 0.05 or less indicates a good fit, and values between 0.08 and 0.05 represent a moderately good model fit (Browne & Cudeck, 1993; Van de Schoot et al., 2012). According to Hu and Bentler (1999), the SRMR value should ideally be smaller than 0.05. The Akaike information criterion (AIC) and sample adjusted Bayesian information criterion (BIC) were used to compare the fit of competing models, where the model with the lowest value suggests superior fit (Van de Schoot, et al., 2012). The conclusion regarding the best fitting model will be based on the

significance of  $\Delta\chi^2$ , and will be corroborated with a comparison of the various fit indices discussed above. Bootstrapping analysis was applied to determine the indirect or mediating effects with confidence intervals at the 95% level (Preacher & Hayes, 2008), and it was decided to set the bootstrapping at 5 000 draws. This implies that the indirect estimates of the model have been calculated by repeatedly resampling the data (in this study bootstrapping was set to 5 000 draws) and estimating the indirect effect in each resampled dataset (Preacher & Hayes, 2008).

## **1.6 ETHICAL CONSIDERATIONS**

In this study, the researcher aimed at conducting research in an ethical manner with a high ethical standard. The following principles were followed (Trochim & Donnelly, 2007; Walliman, 2011):

- *Academic honesty and integrity*: The researcher presents this work as her own and academic honesty was maintained in the writing of this thesis. This work is free from plagiarism and the original authors of work cited in this thesis were referenced appropriately.
- *Voluntary participation*: The participants were assured that their participation is completely voluntary, and that they will not suffer any consequences if they decided not to participate in this study. Furthermore, participants could withdraw at any stage in the research process.
- *Informed consent*: All participants were duly informed of the purpose of this research and they were welcomed to ask any questions in case of uncertainty.
- *Confidentiality and anonymity*: The surveys completed as part of this study were anonymous, and the identities of the participants were treated confidentially.

## **1.7 OVERVIEW OF CHAPTERS**

In Chapter 2 (research article 1) of this thesis, strengths use and deficit improvement are conceptualised and the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) is developed and validated. In Chapter 3 (research article 2), the bias and equivalence of the SUDIQ among ethnic groups in South Africa are examined. Chapter 4 (research article 3) focuses on the investigation of whether an exclusive focus on strengths use, an exclusive

focus on deficit improvement or a combined approach focusing on both will yield higher levels of work engagement, learning and job satisfaction and lower turnover intentions among teachers in South Africa. In Chapter 5 (research article 4), two competing models will be tested to examine whether PBSU and PBDI are antecedents or outcomes of work engagement. In this article, it will be discussed whether model 1, where work engagement mediates the relationship between POSSU and PBSU, and between POSDI and PBDI, or model 2, where proactive behaviour (PBSU and PBDI) mediates the relationship between POSSU and POSDI with work engagement is the best-fitting model. Final conclusions, limitations and recommendations of the study follow in Chapter 6.

## **1.8 CHAPTER SUMMARY**

This chapter provided an overview of the research problem of this study and the contributions of this study were discussed. The research questions, research objectives and hypotheses for each of the search articles in this thesis were presented. The research design followed in each of the four research articles of this thesis was also discussed. Finally, the ethical considerations relevant to this study were explained.



## REFERENCES

- Aguinis, H., & Kraiger, K. (2009). Benefits of training and development for individuals and teams, organizations, and society. *Annual Review of Psychology*, *60*(1), 451-474. doi: 10.1146/annurev.psych.60.110707.163505.
- Aguinis, H., Gottfredson, R. K., & Joo, H. (2012). Delivering effective performance feedback: The strengths-based approach. *Business Horizons*, *55*(2), 105-111. doi: 10.1016/j.bushor.2011.10.004
- Al-Kahtani, N. S., & Khan, N. A. (2014). An empirical investigation into human resource development practices in public telecom organisations in Saudi Arabia: A case study of private sector. *European Scientific Journal*, *10*(1), 341-355.
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309-328. doi: 10.1108/02683940710733115
- Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, *65*(10), 1359-1378. doi: 10.1177/0018726712453471
- Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, *20*(4), 265-269. doi: 10.1177/0963721411414534
- Bakker, A., Demerouti, E., & Schaufeli, W. (2003). Dual processes at work in a call centre: An application of the Job Demands–Resources model. *European Journal of Work and Organizational Psychology*, *12*(4), 393-417. doi: 10.1080/13594320344000165
- Bakker, A. B., Van Veldhoven, M., & Xanthopoulou, D. (2010). Beyond the demand-control model: Thriving on high job demands and resources. *Journal of Personnel Psychology*, *9*(1), 3-16. doi: 10.1027/1866-5888/a000006
- Bandura, A. (1992). *Exercise of personal agency through the self-efficacy mechanism*. Washington, DC: Hemisphere Publishing Corp.
- De Beer, L. T., Pienaar, J., & Rothmann, S. (2014). Job burnout, work engagement and self-reported treatment for health conditions in South Africa. *Stress and Health*. DOI: 10.1002/smi.2576
- Benson, G. S. (2006). Employee development, commitment and intention to turnover: A test of ‘employability’ policies in action. *Human Resource Management Journal*, *16*(2), 173-192. doi: 10.1111/j.1748-8583.2006.00011.x

- Biswas-Diener, R. (2010). *Practicing positive psychology coaching: Assessment and strategies for succes*. Hoboken, NJ: John Wiley & Sons Inc.
- Botha, C., & Mostert, K. (2014). A structural model of job resources, organisational and individual strengths use and work engagement. *SA Journal of Industrial Psychology*, 40(1), 01-11. doi:10.4102/sajip.v40i1.1135
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. Scott Long (Eds.), *Testing structural equation models* (pp. 1-9). Newbury Park, CA: Sage Publications.
- Buick, I., & Muthu, G. (1997). An investigation of the current practices of in-house employee training and development within hotels in Scotland. *Service Industries Journal*, 17(4), 652-668. doi: 10.1080/02642069700000039
- Byrne, B. (2010). *Structural equation modeling with AMOS*. New York, NY: Routledge.
- Clifton, D. O., & Harter, J. K. (2003). Investing in strengths. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 111-121). San Francisco: Berrett Koehler Publishers.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cozby, P. C. (2009). *Methods in behavioural research*. Boston: McGraw-Hill,
- Crant, J. M. (2000). Proactive behaviour in organizations. *Journal of Management*, 26(3), 435-462. doi: 10.1177/014920630002600304
- Davis, R. N. (1999). Web-based administration of a personality questionnaire: Comparison with traditional methods. *Behavior Research Methods, Instruments, & Computers*, 31(4), 572-577. doi: 10.3758/BF03200737
- Demerouti, E., Bakker, A. B., & Fried, Y. (2012). Work orientations in the job demands-resources model. *Journal of Managerial Psychology*, 27(6), 557-575. doi: 10.1108/02683941211252428
- Demerouti, E., Mostert, K., & Bakker, A. B. (2010). Burnout and work engagement: a thorough investigation of the independency of both constructs. *Journal of Occupational Health Psychology*, 15(3), 209-222. doi: 10.1037/a0019408
- Diedericks, E., & Rothmann, S. (2014). Flourishing of information technology professionals: Effects on individual and organisational outcomes. *South African Journal of Business Management*, 45(1), 27-41.

- Egan, T. M., Yang, B., & Bartlett, K. R. (2004). The effects of organizational learning culture and job satisfaction on motivation to transfer learning and turnover intention. *Human Resource Development Quarterly*, *15*(3), 279-301. doi: 10.1002/hrdq.1104
- Erickson, R., & Grove, W. (2007). Why emotions matter: age, agitation, and burnout among registered nurses. *Online Journal of Issues in Nursing*, *13*(1). doi: 10.3912/OJIN.Vol13No01PPT01
- González-Romá, V., Schaufeli, W. B., Bakker, A. B., & Lloret, S. (2006). Burnout and work engagement: Independent factors or opposite poles? *Journal of Vocational Behavior*, *68*(1), 165-174. doi:10.1016/j.jvb.2005.01.003
- Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review*, *2*(2), 143-153.
- Hair, J. F., Celsi, M. W., Money, A. H., Samouel, P., & Page, M. J. (2003). *Essentials of business research methods*. New York, NY: ME Sharpe Inc.
- Hardré, P. L., Crowson, H. M., Xie, K., & Ly, C. (2006). Testing differential effects of computer-based, web-based and paper-based administration of questionnaire research instruments. *British Journal of Educational Technology*, *38*(1), 5-22. doi: 10.1111/j.1467-8535.2006.00591
- Harzer, C., & Ruch, W. (2013). The application of signature character strengths and positive experiences at work. *Journal of Happiness Studies*, *14*(3), 965-983. doi:10.1007/s10902-012-9364-0
- Hellgren, J., Sjöberg, A., & Sverke, M. (1997). Intention to quit: Effects of job satisfaction and job perceptions. In F. Avallone, J. Arnold, & K. de Witte (Eds.), *Feelings work in Europe* (pp. 415-423). Milano, Italy: Guerini.
- Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage.
- Hu, L., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus structural equation modeling, *A Multidisciplinary Journal*, *6*(1), 1-55. doi: 10.1080/10705519909540118
- IBM SPSS. (2013). SPSS 22.0 [computer software]. Chicago, IL: SPSS.
- Kaslow, N. J., Falender, C. A., & Grus, C. L. (2012). Valuing and practicing competency-based supervision: A transformational leadership perspective. *Training and Education in Professional Psychology*, *6*(1), 47-54. doi: 10.1037/a0026704

- Kasper, D., & Ünlü, A. (2013). On the relevance of assumptions associated with classical factor analytic approaches. *Frontiers in Psychology*, 4(1), 1-20. doi: 10.3389/fpsyg.2013.00109
- Lambert, E. G., Hogan, N. L., & Barton, S. M. (2001). The impact of job satisfaction on turnover intent: A test of a structural measurement model using a national sample of workers. *The Social Science Journal*, 38(2), 233-250. doi:10.1016/S0362-3319(01)00110-0
- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria what did they really say? *Organizational Research Methods*, 9(2), 202-220. doi: 10.1177/1094428105284919
- Langelaan, S., Bakker, A. B., Schaufeli, W. B., & Van Doornen, L. J. P. (2006). Burnout and work engagement: Do individual differences make a difference? *Personality and Individual Differences*, 40(3), 521-532. doi: 10.1016/j.paid.2005.07.009
- Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of burnout. *Journal of Applied Psychology*, 81(2), 123–133. doi: 10.1037/0021-9010.81.2.123
- Linley, P. A., & Harrington, S. (2006). Strengths coaching: A potential-guided approach to coaching psychology. *International Coaching Psychology Review*, 1(1), 37-46.
- Linley, P. A., Joseph, S., Harrington, S., & Wood, A. M. (2006). Positive psychology: Past, present, and (possible) future. *The Journal of Positive Psychology*, 1(1), 3-16. doi:10.1080/17439760500372796
- Littman-Ovadia, H., & Steger, M. (2010). Character strengths and well-being among volunteers and employees: Toward an integrative model. *The Journal of Positive Psychology*, 5(6), 419-430. doi:10.1080/17439760.2010.516765
- Llorens, S., Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exist? *Computers in Human Behavior*, 23(1), 825-841. doi:10.1016/j.chb.2004.11.012
- Lopez, S. J., Hodges, T., & Harter, J. (2005). *Clifton StrengthsFinder technical report: Development and validation*. Princeton, NJ: The Gallup Organization.
- Lopez, S. J., Snyder, C. R., & Rasmussen, H. N. (2003). Striking a vital balance: Developing a complementary focus on human weakness and strength through positive psychological assessment. In S. J. Lopez, & C. R. Snyder (Eds.), *Positive psychological assessment: A*

- handbook of models and measures* (pp. 3-20). Washington, DC: American Psychological Association.
- Masia, U., & Pienaar, J. (2011). Unravelling safety compliance in the mining industry: Examining the role of work stress, job insecurity, satisfaction and commitment as antecedents. *SA Journal of Industrial Psychology*, 37(1), 1-10. doi: 10.4102/sajip.v37i1.937
- Maslach, C. (2006). Understanding job burnout in stress and quality of working life. In A. M. Rossi, P. L. Perewé, & S. L. Sauter (Eds.), *Current perspectives in occupational health* (pp. 37-51). Greenwich: Information Age Publishing.
- Matsumoto, D., & Van de Vijver, F. J. R. (2011). *Cross-cultural research methods in psychology*. New York, NY: Cambridge University Press.
- Mauno, S., Kinnunen, U., Mäkikangas, A., & Feldt, T. (2010). Job demands and resources as antecedents of work engagement: A qualitative review and suggestions for future research. In S. Albrecht (Eds.), *Handbook of employee engagement: Perspectives, issues, research and practice* (pp. 111–128). Cheltenham, England: Elgar.
- Mayers, A. (2013). *Introduction to statistics and SPSS in psychology*. London: Pearson.
- Mellenbergh, G. J. (1982). Contingency table models for assessing item bias. *Journal of Educational and Behavioral Statistics*, 7(2), 105-118. doi: 10.3102/10769986007002105
- Metz, A. J., Burkhauser, M., & Bowie, L. (2009). *Training out-of-school time staff*. Child Trends: Washington, DC.
- Morrison, E. W., & Phelps, C. C. (1999). Taking charge at work: Extrarole efforts to initiate workplace change. *Academy of Management Journal*, 42(4), 403-419. doi: 10.2307/257011
- Mostert, K., Peeters, M., & Rost, I. (2011). Work–home interference and the relationship with job characteristics and well-being: A South African study among employees in the construction industry. *Stress and Health*, 27(3), e238-e251. doi: 10.1002/smi.1374
- Muthén, L. K., & Muthén, B. O. (2014). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén,
- Noe, R. A., Wilk, S. L., Mullen, E. J., & Wanek, J. E. (2014). Employee development: Issues in construct definition and investigation of antecedents. In J. K. Ford, S. W. J. Kozlowski, K. Kraiger, E. Salas, & MS Teachout (Eds.), *Improving training effectiveness in work organizations* (pp. 153-189). New York, NY: Psychology Press.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw-Hill.

- Park, N., Peterson, C., & Seligman, M. E. (2004). Strengths of character and well-being. *Journal of Social and Clinical Psychology, 23*(5), 603-619. doi: 10.1521/jscp.23.5.603.50748
- Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology, 91*(3), 636-652. doi: 10.1037/0021-9010.91.3.636
- Paterson, T. A., Luthans, F., & Jeung, W. (2014). Thriving at work: Impact of psychological capital and supervisor support. *Journal of Organizational Behavior, 35*(3), 434-446. doi: 10.1002/job.1907
- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press.
- Pienaar, J., Sieberhagen, C. F., & Mostert, K. (2007). Investigating turnover intentions by role overload, job satisfaction and social support moderation. *SA Journal of Industrial Psychology, 33*(2), 62-67. doi: 10.4102/sajip.v33i2.378
- Porath, C., Spreitzer, G., Gibson, C., & Garnett, F. G. (2012). Thriving at work: Toward its measurement, construct validation, and theoretical refinement. *Journal of Organizational Behavior, 33*(2), 250-275. doi: 10.1002/job.756
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891. doi: 10.3758/BRM.40.3.879
- Proctor, C., Maltby, J., & Linley, P. A. (2011). Strengths use as a predictor of well-being and health-related quality of life. *Journal of Happiness Studies, 12*(1), 153-169. doi: 10.1007/s10902-009-9181-2
- Richman, W. L., Kiesler, S., Weisband, S., & Drasgow, F. (1999). A meta-analytic study of social desirability distortion in computer-administered questionnaires, traditional questionnaires, and interviews. *Journal of Applied Psychology, 84*(5), 754-775. doi: 10.1037/0021-9010.84.5.754
- Rigotti, T., Schyns, B., & Mohr, G. (2008). A short version of the occupational self-efficacy scale: Structural and construct validity across five countries. *Journal of Career Assessment, 16*(2), 238-255. doi: 10.1177/1069072707305763
- Rothmann, S. (2008). Job satisfaction, occupational stress, burnout and work engagement as components of work-related wellbeing: empirical research. *SA Journal of Industrial Psychology, 34*(3), 11-16. doi: 10.4102/sajip.v34i3.424
- Rust, T., Diessner, R., & Reade, L. (2009). Strengths only or strengths and relative

- weaknesses? A preliminary study. *The Journal of Psychology: Interdisciplinary and Applied*, 143(5), 465-476. doi: 10.3200/JRL.143.5.465-476
- Ryan, R. M., & Deci, E. L. (2008). From ego depletion to vitality: Theory and findings concerning the facilitation of energy available to the self. *Social and Personality Psychology Compass*, 2(2), 702-717.
- Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in tThe Public Interest*, 13(2), 74-101. doi: 10.1177/1529100612436661
- Santos, A., & Stuart, M. (2003). Employee perceptions and their influence on training effectiveness. *Human Resource Management Journal*, 13(1), 27-45. doi: 10.1111/j.1748-8583.2003.tb00082.x
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Harlow, England: Pearson Education Ltd.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25(3), 293-315. doi: 10.1002/job.248
- Schaufeli, W. B., & Bakker, A. B. (2010). The conceptualization and measurement of work engagement. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp.10-24). New York, NY: Psychology Press.
- Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London, England: Taylor & Francis.
- Schaufeli, W. B., & Peeters, M. C. (2000). Job stress and burnout among correctional officers: A literature review. *International Journal of Stress Management*, 7(1), 19-48. doi: 10.1023/A:1009514731657
- Schaufeli, W. B., & Peeters, M. C. (2000). Job stress and burnout among correctional officers: A literature review. *International Journal of Stress Management*, 7(1), 19-48. doi: 10.1023/A:1009514731657
- Schaufeli, W. B., & Salanova, M. (2007). Work engagement: An emerging psychological concept and its implications for organizations. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki (Eds.), *Research in social issues in management: Managing social and ethical issues in organizations* (Vol. 5, pp. 135-177). Greenwich, CT: Information Age Publishers.

- Schaufeli, W. B. & Taris, T. W. (2005). The conceptualization and measurement of burnout: common ground and worlds apart. *Work and Stress*, 19(3), 256-262. doi:10.1080/02678370500385913
- Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, 30(7), 893-917. doi: 10.1002/job.595
- Schaufeli, W. B., Leiter, M.P., Maslach, C. & Jackson, S. E. (1996). Maslach Burnout Inventory - General Survey. In C. Maslach, S. E. Jackson & M.P. Leiter (Eds.), *The Maslach Burnout Inventory - test manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92. doi: 10.1023/A:1015630930326
- Schmidt, S. W. (2007). The relationship between satisfaction with workplace training and overall job satisfaction. *Human Resource Development Quarterly*, 18(4), 481-498. doi: 10.1002/hrdq.1216
- Schmitt, N., & Kuljanin, G. (2008). Measurement invariance: Review of practice and implications. *Human Resource Management Review*, 18(4), 210-222. doi: 10.1016/j.hrmr.2008.03.003.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5-14. doi: 10.1037//0003-066X.55.1.5
- Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of intervention. *American Psychologist*, 60(5), 410-421. doi: 10.1037/0003-066X.60.5.410
- Sirmon, D. G., Hitt, M. A., Arregle, J. L., & Campbell, J. T. (2010). The dynamic interplay of capability strengths and weaknesses: Investigating the bases of temporary competitive advantage. *Strategic Management Journal*, 31(13), 1386-1409. doi: 10.1002/smj.893
- Sjöberg, A., & Sverke, M. (2000). The interactive effect of job involvement and organizational commitment on job turnover revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology*, 41(3), 247-252. doi: 10.1111/1467-9450.00194
- Sonnentag, S. (2003). Recovery, work engagement, and proactive behaviour: A new look at the interface between nonwork and work. *Journal of Applied Psychology*, 88(3), 518. doi: 10.1037/0021-9010.88.3.518



- Spreitzer, G., Sutcliffe, K., Dutton, J., Sonenshein, S., & Grant, A. M. (2005). A socially embedded model of thriving at work. *Organization Science*, *16*(5), 537-549. doi: 10.1287/orsc.1050.0153
- Stander, F. W., & Mostert, K. (2013). Assessing the organisational and individual strengths use and deficit improvement amongst sport coaches. *SA Journal of Industrial Psychology*, *39*(2), 1-13. doi: 10.4102/sajip.v39i2.1160
- Storm, K., & Rothmann, S. (2003). A psychometric analysis of the Utrecht Work Engagement Scale in the South African police service. *SA Journal of Industrial Psychology*, *29*(4), 62-70. doi: 10.4102/sajip.v29i4.129
- Sullivan, G. M. (2011). A primer on the validity of assessment instruments. *Journal of Graduate Medical Education*, *3*(2), 119-120. doi: 10.4300/JGME-D-11-00075.1
- Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta-analytic findings. *Personnel Psychology*, *46*(2), 259-293. doi: 10.1111/j.1744-6570.1993.tb00874.x
- Thornton, G. C. & Rupp, D. E. (2005). *Assessment centres in human resource management: Strategies for prediction, diagnosis and development*. Mahwah, NJ: Erlbaum.
- Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology*, *36*(2), 1-9. doi: 10.4102/sajip.v36i2.841
- Trochim, W. M. K., & Donnelly, J. P. (2007). *The research methods knowledge base* (3rd ed.). Mason, OH: Thompson Custom Solutions.
- Van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology*, *9*(4), 486-492. doi: 10.1080/17405629.2012.686740
- Van de Vijver, F. J. R., & Leung, K. (1997). *Methods and data analysis for cross-cultural research*. Newbury Park, CA: Sage.
- Van de Vijver, F. J. R., & Leung, K. (2011). Equivalence and bias: A review of concepts, models, and data analytic procedures. In D. Matsumoto, & F. J. R. van de Vijver, *Cross-cultural research methods in psychology* (pp. 17-45). New York, NY: Cambridge University Press.
- Van de Vijver, F. J., & Poortinga, Y. H. (1997). Towards an integrated analysis of bias in cross-cultural assessment. *European Journal of Psychological Assessment*, *13*(1), 29-37. doi: 10.1027/1015-5759.13.1.29

- Van de Vijver, F., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *European Review of Applied Psychology / Revue Européenne de Psychologie Appliquée*, 54(2), 119-135. doi:10.1016/j.erap.2003.12.004
- Van de Vijver, F., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology*, 54(2), 119-135. doi: 10.9707/2307-0919.1111
- Van de Vijver, F. J. (2011). Capturing bias in structural equation modeling. In E. Davidov, P. Schmidt, & J. Billiet (Eds.), *Cross-cultural analysis: Methods and applications* (pp. 3-34). New York, NY: Routledge.
- Van Emmerik, I. J., Schreurs, B., De Cuyper, N., Jawahar, I. M., & Peeters, M. C. (2012). The route to employability: Examining resources and the mediating role of motivation. *Career Development International*, 17(2), 104-119. doi: 10.1108/13620431211225304
- Van Herk, H., Poortinga, Y. H., & Verhallen, T. M. (2005). Equivalence of survey data: Relevance for international marketing. *European Journal of Marketing*, 39(3/4), 351-364. doi: 10.1108/03090560510581818
- Van Veldhoven, M., Meijman, T.F., Broersen, J.P.J., & Fortuin, R.J.V. (1997). Handleiding VBBA: Onderzoek naar de beleving van psychosociale arbeidsbelasting en werkstress met behulp van de vragenlijst beleving en beoordeling van arbeid [Manual VBBA: The measurement of psychosocial strain at work: The questionnaire experience and evaluation of work]. Amsterdam, Netherlands: SKB.
- Veldhoven, M. V., Jonge, J. D., Broersen, S., Kompier, M., & Meijman, T. (2002). Specific relationships between psychosocial job conditions and job-related stress: A three-level analytic approach. *Work & Stress*, 16(3), 207-228. doi:10.1080/02678370210166399
- Van Veldhoven, M., & Meijman, T. F. (1994). Het meten van psychosociale arbeidsbelasting met een vragenlijst: De Vragenlijst Beleving en Beoordeling van de Arbeid (VBBA) [The measurement of psychosocial strain at work: The questionnaire experience and evaluation of work]. Amsterdam, Netherlands: Nederlands Instituut voor Arbeidsomstandigheden.
- Van Wijhe, C., Peeters, M., Schaufeli, W., & Van den Hout, M. (2011). Understanding workaholism and work engagement: the role of mood and stop rules. *Career Development International*, 16(3), 254-270. doi: 10.1108/13620431111140156
- Vandenberg, R. J. (2002). Toward a further understanding of and improvement in measurement invariance methods and procedures. *Organizational Research Methods*, 5(2), 139-158. doi: 10.1177/1094428102005002001

- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*(1), 4-70. doi: 10.1177/109442810031002
- Walliman, N. S. R. (2011). *Research methods: The basics*. New York, NY: Taylor & Francis.
- Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs and affective experiences. *Human Resource Management Review, 12*(2), 173-194. doi:10.1016/S1053-4822(02)00045-1
- Wood, A. M., Linley, P. A., Maltby, J., Kashdan, T. B., & Hurling, R. (2011). Using personal and psychological strengths leads to increases in well-being over time: A longitudinal study and the development of the strengths use questionnaire. *Personality and Individual Differences, 50*(1), 15-19. doi: 10.1016/j.paid.2010.08.004
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the Job Demands-Resources model. *International Journal of Stress Management, 14*(2), 121-141. doi: 10.1037/1072-5245.14.2.121
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behaviour, 74*(3), 235-244. doi: 10.1016/j.jvb.2008.11.003

## **CHAPTER 2**

### **RESEARCH ARTICLE 1**

# THE DEVELOPMENT OF A STRENGTHS USE AND DEFICIT IMPROVEMENT QUESTIONNAIRE

## ABSTRACT

**Purpose:** Empirical research regarding the use of employees' strengths and the improvement of their deficits is virtually lacking. This lacking research could be due to the absence of a measuring instrument designed to assess these phenomena. The purpose of this study was to develop and validate the Strengths Use and Deficit Improvement Questionnaire (SUDIQ), which is designed to measure four dimensions, namely perceived organisational support for strengths use, perceived organisational support for deficit improvement, proactive behaviour towards strengths use, and proactive behaviour towards deficit improvement.

**Design:** The process proposed by DeVellis (2003) was used to generate and refine the items of the questionnaire. A pilot study was then conducted among a heterogeneous sample of 241 employees to determine the factorial validity and reliability of the questionnaire. This was followed by a validation study where data was collected from another heterogeneous sample consisting of 699 participants.

**Findings:** The results from the exploratory factor analysis of the pilot study revealed four distinct factors, which were confirmed with the CFA results from the validation study. The SUDIQ has proven to be a reliable instrument and evidence was found for the convergent and criterion validity of the SUDIQ.

**Originality:** The results from this study allow future research to validly and reliably measure strengths use and deficit improvement by both the organisation and the individual.

**Keywords:** strengths use, deficit improvement, organisational support, proactive behaviour, autonomy, participation in decision-making, occupational self-efficacy, employee engagement, burnout, positive psychology, scale development

## INTRODUCTION

The emergence of the positive psychology approach has ignited an interest in the study of human strengths, as opposed to the exclusive focus on weaknesses (Cameron, 2003; Carr, 2004). The upswing in scholarly publications on strengths-based development and interventions is a testament to this fact (Biswas-Diener, Kashdan & Minhas, 2011). Of central concern in positive psychology in organisations is the question as to how an organisation, within which people are able to flourish, differs from those in which they merely survive, or deteriorate (Lewis, 2011). Some authors argue that the answer lies in a focus on human strengths (Cameron, Dutton & Quinn, 2003).

The results of previous studies have indicated that when individuals' strengths are used, they may experience higher levels of job satisfaction and work engagement, as well as reduced levels of stress and depression (Harzer & Ruch, 2012; Peterson, Stephens, Park, Lee & Seligman, 2009; Seligman, Steen, Park & Peterson, 2005; Wood, Linley, Maltby, Kashdan & Hurling, 2011). When employees are able to use their strengths, they also feel good about themselves and are motivated toward fulfilling their potential (Linley & Harrington, 2006). These findings indicate that it may be important for employees to perceive organisational support (Eisenberger, Huntington, Hutchison & Sowa, 1986) for using their strengths.

Although the positive psychology movement argues for a focus on employees' strengths, it is a reality that employees are sometimes confronted with job tasks that do not fall within their areas of strengths. Therefore, many organisations use performance appraisals as a tool to identify employees' deficits, and provide training and development programmes to improve these deficits (Glen, 1990; Santos & Stuart, 2003). Past research has shown that training and development are associated with increased performance (Abdullah, Ahsan & Alam, 2009), indicating that employees are indeed capable of improving their deficits. Organisations that are committed to the development of their employees reap the benefits in the form of employees' increased willingness to extend themselves for the organisation and increased organisational effectiveness (Woods & De Menezes, 1998), increased job satisfaction (Lee & Bruvold, 2003), increased organisational commitment (Tansky & Cohen, 2001), and reduced intentions to leave the organisation (Lee & Bruvold, 2003). This indicates that, in spite of

positive psychology's call for an emphasis on strengths, it may also be important for employees to perceive organisational support for improving their deficits.

Apart from the organisational support that employees may perceive regarding their strengths use and deficit improvement, employees themselves can also display proactive behaviour towards using their own strengths and improving their deficits (i.e. looking for opportunities to use their strengths and improve their deficits at work). Individuals may be interested in applying their strengths in their work due to the potential of experiencing positive emotions and personal well-being as a result (Govindji & Linley, 2007; Proctor, Maltby & Linley, 2011). One can further argue that employees may also actively search for opportunities to improve their deficits, as these developmental activities may lead to them experiencing personal mastery and growth (Senge, 1990).

Considering the positive outcomes of focusing on employees' strengths and weaknesses as outlined above, it becomes clear that neither strengths nor deficits can be ignored (Duckworth, Steen & Seligman, 2005; Rust, Diessner & Reade, 2009) in the work environment. However, research on the extent to which organisations use their employees' strengths (Wood et al., 2011) and improve their deficits, and the extent to which employees themselves use their strengths and improve their deficits in the workplace is virtually lacking. Govindji and Linley (2007) have developed the Strengths Use Scale to assess how much people use their strengths in a variety of settings. This scale, however, was developed and validated among college students and not working individuals (Govindji & Linley, 2007; Wood et al., 2011). It exclusively focuses on the use of strengths and therefore excludes the development of deficits. Furthermore, this instrument does not measure the extent to which individuals themselves are oriented towards using their strengths and improving their deficits.

The aim of this study was to develop an instrument aimed at addressing the above identified gap. Such a measuring instrument would create the opportunity for future empirical studies to investigate possible conditions under which it would be best to focus on strengths (as suggested by the positive psychology literature), to improve deficits (as is suggested by the training and development literature), or employ a combination of both to optimise organisational and individual outcomes.

## LITERATURE REVIEW

### Conceptualising and contextualising strengths use and deficit improvement

#### *Perceived organisational support for strengths use and deficit improvement as job resources*

Perceived organisational support refers to employees' general beliefs regarding the extent to which their organisation values their contributions and cares about their well-being (Eisenberger et al., 1986). Employees tend to assign humanlike qualities to the organisation, and based on this personification, employees view the favourable or unfavourable treatment by organisational agents as an indication that the organisation favours or disfavors them (Levinson, 1965). When employees experience organisational support, they may perceive the organisation as having a general positive orientation toward them, and, in turn, may tend to feel obliged to strive towards achieving the organisation's goals (Rhoades & Eisenberger, 2002). Employees can experience different forms of organisational support, for example perceived organisational support for innovation (Henkin & Holliman, 2009), perceived organisational support for creativity (Zhou & George, 2001), and perceived organisational support for personal development (Hung & Mondejar, 2001). In this study, the researcher argue that two additional forms of perceived organisational support might exist, namely perceived organisational support for strengths use (POSSU) and perceived organisational support for deficit improvement (POS DI).

Strengths are the characteristics that allow persons to perform at their personal best (Wood et al., 2011). When one refines one's natural talents with knowledge and skills, these talents become one's strengths (Hodges & Clifton, 2004). The use of employees' strengths may be beneficial to the organisation, since capitalising on the workforce's strengths may be functional in assisting the organisation to achieve its goals, since less time will be spent on training employees' new skills and competencies. Furthermore, employees who are allowed to use their strengths feel good about themselves and are motivated (Linley & Harrington, 2006), which may, in turn, lead to a more positive workforce. However, organisations will only reap the benefits of employees' strengths when the organisation provides its employees with the opportunity to apply their strengths in the workplace.



Organisations can provide their employees with support to use their strengths by changing the allocation of tasks in line with their individual strengths, and by making use of complementary partnering and team-working with others (Linley & Harrington, 2006). This may shift the performance requirements for an individual employee within a team to another domain, while the team as a whole is still responsible for the same task, making individual weaknesses less relevant for individual task performance. Based on the above, we define perceived organisational support for strengths use (POSSU) as the extent to which employees perceive their organisation to be supportive of them using their strengths in the workplace.

Deficits (or weaknesses) refer to anything that gets in the way of excellent performance (Buckingham & Clifton, 2001). Deficits are therefore disadvantages or impairments in a functional capacity (Merriam-Webster Dictionary, 2012). To optimise organisational performance, the performance of each individual must be optimal. However, when employees constantly perform tasks they are not good at, their performance may be compromised. This can be addressed by providing employees with the necessary opportunities and support to address their weaknesses. Therefore, employees are dependent on the organisation's support or approval to improve their deficits in the workplace. Therefore, we define perceived organisational support for deficit improvement (POSDI) as the extent to which employees perceive their organisation to be supportive of them developing their deficits in the workplace. Organisations may support the improvement of employee deficits that compromise their performance by addressing these deficits in performance appraisals and by making development plans to improve these deficits by means of feedback, training and practice in the workplace.

Perceived organisational support is a widely researched concept, and is often described as a job resource (Karatepe, 2009; Jackson, Rothmann & Van de Vijver, 2006; Rothmann, Strydom & Mostert, 2006; Saks, 2006). Drawing on the Job Demands-Resources (JD-R) model, job resources are those aspects of the job that are (a) functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate personal growth, learning and development (Bakker & Demerouti, 2007, 2013). Research has shown that strengths use is associated with goal attainment and performance (Clifton & Harter, 2003; Linley 2008; Linley, Nielsen, Wood, Gillett & Biswas-Diener, 2010) and using strengths in the workplace can foster positive affect (Wood et al., 2011).

Therefore, using one's strengths may buffer against stress (Folkman & Moskowitz, 2000; Khosla, 2006; Proctor et al., 2011), and therefore POSSU can be conceptualised as a job resource.

POSDI can also be seen as a job resource since employee development as part of the organisation's human resource strategy also contributes to the attainment of goals and increases individual growth through learning (Harrison, 1992). In addition, when individuals are expected to perform certain aspects of the job they are not good at, training and development opportunities to address these weaknesses and the prospect of better performance (Abdullah, et al., 2009) may lead to reduced stress levels.

### ***Proactive behaviour towards strengths use and deficit improvement***

Proactive behaviour is displayed when employees take initiative in improving their current circumstances or creating new favourable circumstances for themselves, rather than passively adapting to present conditions (Crant, 2000). Research suggests that proactive behaviour in the workplace is characterised by self-starting behaviour of an employee aimed at, among other things, improving working conditions and developing personal prerequisites to meet work demands, as well as seeking learning opportunities (Frese, Kring, Soose & Zempel, 1996; Parker, 2000). Furthermore, proactive behaviour involves personal initiative, which is defined as "work behaviour characterised by its self-starting nature, its proactive approach and by being persistent in overcoming difficulties that arise in the pursuit of a goal" (Frese & Fay, 2001, p. 134).

In the literature, a range of different types of proactive behaviour is discussed, including seeking feedback (Ashford, Blatt & Van de Walle, 2003), demonstrating initiative (Frese & Fay, 2001), building networks (Ashford & Black, 1996), seeking information (Morrison, 1993), helping others (Organ, 1988), taking charge (Morrison & Phelps, 1999) and redefining work (Ashford & Black, 1996; Wrzesniewski & Dutton, 2001). In this study, it is argued that employees who actively look for opportunities to use their strengths within the work context also display proactive behaviour. For example, a business consultant with an individual strength in building relationships may go about her task of selling consulting services by engaging in one-on-one dialogues with individual clients she already knows, instead of giving presentations to large audiences. In light of the above, we define proactive behaviour

towards strengths use as employees' self-starting behaviour directed towards using their strengths in the workplace.

Similarly, employees might also display proactive behaviour to improve their working conditions by means of improving their deficits. For example, the same business consultant discussed above who has difficulties with giving presentations to large audiences might also proactively look for opportunities to practice her presentation skills in front of her colleagues. Therefore, we can define proactive behaviour towards deficit improvement as employees' self-starting behaviour directed towards improving their deficiencies in the workplace.

In the following sections the research methods and the results for the pilot study is discussed. This is followed by the research method and results of the validation study. Then the results of this study are discussed. Finally the conclusions, limitations and recommendations are discussed.

## **STUDY 1: ITEM DEVELOPMENT AND PILOT STUDY**

The primary purpose of the first study was to develop a questionnaire to accurately measure perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU), and proactive behaviour towards deficits improvement (PBDI).

H<sub>1</sub>: The Strengths Use and Deficit Improvement Questionnaire consists of four distinct factors, namely POSSU, POSDI, PBSU and PBDI (i.e. confirming the factorial validity).

To attain this goal, the procedure of questionnaire development suggested by DeVellis (2003) was followed and included the conceptualisation of the constructs, generation of items, choosing a scaling format and refining items.

### **Research method**

#### ***Step 1: Conceptualisation of the dimensions***

Based on the theoretical notions above, the dimensions of the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) include POSSU, POSDI, PBSU and PBDI.

### ***Step 2: Item generation***

Based on the definitions of the constructs, preliminary items were generated by tapping into the literature on strengths use and deficit improvement within the organisational context (i.e. POSSU, POSDI, PBSU and PBDI), as well as the expert feedback of industrial psychologists, human resource specialists and leading researchers in the field of organisational psychology.

### ***Step 3: Scaling format***

After deliberation with research experts and statisticians, a Likert-type response format was chosen. The response options were worded to signify roughly equal intervals with respect to frequency of occurrence (DeVellis, 2003), and included a seven-point rating scale, an appropriate number of categories (Fink, 1995; Foddy, 1994; Green & Frantom, 2002). The chosen response scale consists of the following: (0) almost never, (1) rarely, (2) occasionally, (3) sometimes, (4) frequently, (5) usually, (6) almost always.

### ***Step 4: Item refinement***

After the items were developed, a panel of three subject experts (i.e. researchers in the field of strengths-based development and organisational studies) and five master's students in industrial psychology were provided with a definition of the four dimensions and then requested to classify the items, in so doing also identifying unclear or ambiguous items. In the case of problematic items, the panel members were asked to clarify issues with items and propose an alternative to the specific item. After the evaluation phase, the items were scrutinised and adapted where necessary and the final item pool of 33 items for the purpose of the pilot study was generated and submitted to an accredited language editor.

After the items were finalised, a pilot study was conducted to assess the factorial validity and reliability of the new questionnaire.

### **Procedure and participants**

A cross-sectional design with a survey as the data collection technique was used. The participants consisted of a heterogeneous sample of 241 participants across different industries in South Africa. Participants from the general working population were recruited to complete the survey. The surveys were distributed and again collected by hand to employees who were available at their respective workplaces at the given time of questionnaire

distribution. The participants were allowed to complete the questionnaires at a time and place convenient to them. Participation was voluntary and anonymous.

The majority of the sample consisted of females (61%). The racial distribution of the participants was white (58.09%), African (28.63%), coloured (7.88%) and Asian (2.90%). Most of the participants were Afrikaans (53.94%) and English (15.35%), followed by Setswana (9.54%), Sepedi (5.39%), Sesotho (4.15%), Tshivenda (3.32%), isiXhosa (2.49%), isiZulu (1.66%), isiNdebele (0.83%) and SiSwati (0.83%). A total of 42.32% of the sample had a grade 12 qualification (41.10%), 12.30% held a university degree, and 20.33% had a postgraduate degree.

### **Measuring instruments**

*A biographical questionnaire* was administered to collect the personal data of participants, including gender, ethnicity, language and educational level.

*The Strengths Use and Deficit Improvement Questionnaire:* The newly developed 33-item questionnaire was used to measure POSSU, POSDI, PBSU and PBDI.

### **Statistical analysis**

An exploratory factor analysis with a principal-axis extraction was carried out with the SPSS program (IBM SPSS, 2013). The criteria used to determine the number of factors were based on the scree plot and Eigen values of  $\geq 1.00$  rule (Kaiser, 1960). The factors were then rotated using the direct Oblimin rotation method, which allowed the factors to be correlated (Gorsuch, 1997).

### **Pilot study: Results**

The exploratory factor analysis resulted in a four-factor solution. Therefore, hypothesis 1 was confirmed. These factors and their loadings are presented in Table 1.

**TABLE 1:** Factor loadings based on exploratory factor analyses

Items	Factor 1	Factor 2	Factor 3	Factor 4
1. This organisation uses employees' strengths	-0.82	-0.06	0.02	0.01
2. In this organisation, employees can do their jobs in a manner that best suits their strong points	-0.78	0.01	0.12	-0.03
3. This organisation provides employees with the opportunity to do what they are good at	-0.74	0.10	0.20	0.08
4. In this organisation, people can use their talents	-0.84	0.07	0.04	0.06
5. In this organisation, people's job tasks are aligned with their strengths	-0.81	0.07	0.05	-0.08
6. This organisation makes the most of people's talents	-0.90	0.04	-0.02	-0.07
7. This organisation ensures that people can apply their strong points in their jobs	-0.92	0.04	-0.03	-0.02
8. This organisation focuses on what people are good at	-0.92	0.02	0.00	-0.03
9. I actively look for job tasks I am good at	0.01	-0.05	0.58	-0.11
10. I use my strengths at work	-0.19	0.07	0.65	0.02
11. In my job, I try to apply my talents as much as possible	-0.08	-0.03	0.70	-0.04
12. I organise my job to suit my strong points	0.02	0.03	0.82	-0.01
13. I draw on my talents in the workplace	-0.13	-0.08	0.79	0.02
14. At work, I focus on the things I do well	0.02	0.04	0.85	0.01
15. In my job, I make the most of my strong points	-0.04	0.01	0.81	-0.01
16. I capitalise on my strengths at work	-0.01	0.02	0.90	0.03
17. I seek opportunities to do my work in a manner that best suits my strong points	0.09	0.03	0.89	0.01
18. This organisation emphasises the development of employees' weak points	-0.11	0.71	0.01	-0.03
19. In this organisation, employees receive training to improve their weak points	0.05	0.86	0.02	0.03
20. This organisation focuses on people's areas of development	-0.04	0.82	0.05	-0.01
21. In this organisation, people are required to work on their shortcomings	0.12	0.88	0.05	0.02
22. In this organisation, development plans are aimed to better people's weaknesses	0.04	0.86	0.08	-0.02
23. In this organisation, people are expected to improve the things they are not good at	-0.01	0.74	-0.01	-0.08
24. In this organisation, performance appraisals address people's areas of development	-0.18	0.71	-0.05	-0.03
25. In this organisation, employees receive feedback regarding their limitations	-0.23	0.63	-0.17	-0.06
26. In my job, I concentrate on my areas of development	-0.03	0.07	-0.00	-0.80
27. At work, I focus on developing the things I struggle with	-0.06	-0.06	-0.00	-0.86
28. I engage in activities to develop my weak points at work	0.02	0.05	-0.01	-0.84
29. In my job, I work on my shortcomings	-0.05	-0.06	0.00	-0.83
30. At work, I seek training opportunities to improve my weaknesses	0.18	0.20	0.15	-0.60
31. I reflect on how I can improve the things in my job that I am not good at	-0.13	-0.10	0.01	-0.87
32. In my job, I make an effort to improve my limitations	0.05	0.03	0.03	-0.86
33. At work, I seek feedback regarding my areas of development	0.09	0.14	0.06	-0.69

Factor one was labelled perceived organisational support for strengths use (POSSU; eight items) and explained 14.32% of the variance. The second factor was termed perceived organisational support for deficit improvement (POS DI; eight items) and explained 12.36% of the variance. Factor three was labelled proactive behaviour towards strengths use (PBSU; nine items), which explained 42.30% of the variance. Finally, factor four was termed proactive behaviour towards deficit improvement (PB DI; eight items) and explained 4.59% of the variance. The results of the exploratory factor analyses revealed that all the items had factor loadings of higher than 0.30, and that there were no cross-loadings of items. Therefore, all the items were retained. The internal consistency reliabilities of the four subscales were calculated. The Cronbach's alpha coefficients were: POSSU,  $\alpha = 0.96$ ; POS DI,  $\alpha = 0.93$ ; PBSU,  $\alpha = 0.94$ ; and PB DI,  $\alpha = 0.94$ .

Based on the results from the pilot study, the questionnaire was finalised. In the next step, it was administered to a larger population for the purpose of validating the scale. This study is discussed next.

## **STUDY 2: CONFIRMATORY FACTOR ANALYSES AND QUESTIONNAIRE VALIDITY**

The purpose of study 2 was to investigate the factor structure, validity and reliability of the SUDIQ. More specifically, the factorial validity, convergent validity and criterion-related validity were examined.

Firstly, the hypothesised four-factor structure of the SUDIQ found in the pilot study was tested in a new sample by means of confirmatory factor analysis (CFA). Secondly, the convergent validity of the SUDIQ was investigated by relating the SUDIQ to theoretically-related constructs (Cozby, 2009). Since we classify POSSU and POS DI as job resources, it can be expected that these two constructs will be positively related to other job resources, including autonomy and participation in decision-making, two widely recognised job resources (Bakker, Van Veldhoven & Xanthopoulou, 2010; Demerouti, Bakker & Fried, 2012).

H<sub>2</sub>: POSSU (2a) and POSDI (2b) will be positively related to autonomy and participation in decision-making (i.e. confirming the convergent validity).

In an attempt to demonstrate the convergent validity of the two proactive behaviour dimensions, the correlation between PBSU and PBDI with self-efficacy was examined. Bandura (1992) argued that individuals high on self-efficacy feel that they are able to control their environment by taking adaptive action. Furthermore, it can be expected that self-efficacious individuals have confidence in their own abilities, and tend to believe that their actions will be successful (e.g. Morrison & Phelps, 1999). This may encourage them to engage in behaviour where they take initiative (i.e. proactive behaviour; Parker, Williams & Turner, 2006).

H<sub>3</sub>: PBSU (3a) and PBDI (3b) will be positively related to self-efficacy (i.e. confirming the convergent validity).

Secondly, the criterion-related, or predictive validity, was examined by determining the extent to which the SUDIQ dimensions correlate with potential outcome variables. To achieve this, the basic assumptions of the JD-R model were drawn upon. The JD-R model posits that job resources, due to their motivational potential, lead to work engagement. Work engagement refers to a positive, fulfilling, work-related state of mind that is characterised by vigour and dedication (Schaufeli & Bakker, 2010; Schaufeli, Salanova, González-Romá & Bakker, 2002). Vigour is characterised by high energy levels and a willingness to invest extra effort in one's work. Dedication refers to a strong involvement in one's work and experiencing feelings such as enthusiasm, inspiration and pride. When employees are allowed by the organisation to use their strengths, they may tend to feel good about themselves and are motivated (Linley & Harrington, 2006), which may increase work engagement. In contrast, when we are in a job that does not utilise our strengths, we may perceive the position to be boring (Kerfoot, 2007), and one may become less enthusiastic about one's job (lack of dedication) and even dread going to work (lack of vigour), which could be an indication of low work engagement (Schaufeli et al., 2002). Similarly, the opportunity for employees to improve their deficits at work may stimulate professional growth and development, which is associated with work engagement (Xanthopoulou, Bakker, Demerouti



& Schaufeli, 2009). Therefore, it is anticipated that POSSU and POSDI will be positively related to work engagement.

H<sub>4</sub>: POSSU (4a) and POSDI (4b) will be positively related to work engagement (i.e. confirming the criterion-related validity).

Furthermore, when employees experience a lack of job resources, they may be prone to higher levels of burnout (Bakker, Demerouti & Euwema, 2005; Schaufeli & Bakker, 2004). Burnout is a stress-related concept and is defined by Schaufeli and Enzmann (1998) as “a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterised by exhaustion, which is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work” (p. 36). Since the use of one’s strengths in the workplace is associated with lower stress levels (Buick & Muthu, 1997; Proctor et al., 2011; Wood et al., 2011), it is expected that POSSU will be negatively related to burnout. Similarly, constantly performing tasks that fall within your areas of weakness without the opportunity to improve these weaknesses could have a negative impact on goal achievement so that personal accomplishment diminishes and feelings of incompetence increase, which, in turn, could lead to burnout (Maslach, 2006; Schaufeli & Peeters, 2000). Therefore, it is expected that POSDI will also be negatively related to burnout.

H<sub>5</sub>: POSSU (5a) and POSDI (5b) will be negatively related to burnout (i.e. confirming the criterion-related validity).

When employees are able to use their strengths they are happier, feel good about themselves and are motivated toward fulfilling their potential (Linley & Harrington, 2006; Seligman et al., 2005). Similarly, developing one’s weaknesses may create a sense of mastery or accomplishment. In turn, these positive emotions elicited through using one’s strengths and improving one’s deficits may increase one’s enthusiasm and energy, which are associated with work engagement (Langelaan, Bakker, Schaufeli & Van Doornen, 2006; Schaufeli & Salanova, 2007). Furthermore, these positive feelings may reduce the negative effects of burnout (Erickson & Grove, 2007). Using one’s strengths and improving the things you are less good at may lead to a higher level of perceived competence in your job, which, in turn,

may reduce stress. Therefore, it is expected that PBSU and PBDI will likely reduce employees' levels of burnout.

H<sub>6</sub>: PBSU (6a) and PBDI (6b) will be positively related to work engagement (i.e. confirming the criterion-related validity).

H<sub>7</sub>: PBSU (7a) and PBDI (7b) will be negatively related to burnout (i.e. confirming the criterion-related validity).

### **Research method**

Again, a quantitative research approach was followed to validate the questionnaire. A cross-sectional, survey design was employed, implying that the participants were studied at a particular point in time (Du Plooy, 2002).

### **Research participants and procedure**

The data was collected among a heterogeneous, random availability sample ( $N = 699$ ) across different industries in South Africa. Only individuals working under the supervision of someone else (and therefore not owners of businesses, CEOs etc.) with a minimum of a grade 10 high school qualification were requested to complete the questionnaires. Participants were selected from the general working population and participation was completely voluntary and anonymous. Employees who were available at their respective workplaces at the given time of questionnaire distribution were included in the study. The participants were allowed to complete the questionnaires at a time and place convenient to them.

Consent was obtained from the management of each organisation within various occupational groups, and the surveys were delivered by hand or in electronic format to the participants. Enclosed in each survey was a letter explaining the purpose of the study and informed consent was obtained from the participants. The completed surveys were then collected. To ensure fair, unbiased and ethical practices during the research procedure, careful attention was paid to aspects such as voluntary participation, informed consent, doing no harm, confidentiality and privacy (De Vaus, 2002). A total of approximately 1 500 questionnaires were distributed and a response rate of 46.6% was obtained.

The majority of the sample consisted of female participants (57.40%), while 41.20% were males. The sample comprised a majority of white (42.80%) and African (39.30%) participants, whereas 12.20% were coloured and 3.00% were of Asian descent. Most of the participants were Afrikaans (36.10%) and English (23.60%), followed by Sesotho (12.60%), Setswana (8.40%), isiXhosa (6.40%), isiZulu (5.20%), Sepedi (2.90%), Xitsonga (1.00%), Tshivenda (0.70%), SiSwati (0.40%) and isiNdebele (0.30%). A total of 51.30% of the sample had a high school education, with the majority holding a grade 12 qualification (41.10%). A total of 47.20% had some form of tertiary education of which the majority held a university degree (12.40%) and a postgraduate degree (12.60%).

### **Measuring instruments**

*A biographical questionnaire* was administered to collect the personal data of participants, including gender, ethnicity, language and educational level.

The newly developed *Strengths Use and Deficit Improvement Questionnaire* (SUDIQ) was used to measure perceived organisational support for strengths use (POSSU; eight items), perceived organisational support for deficit improvement (POSIDI; eight items), proactive behaviour towards strengths use (PBSU; nine items), and proactive behaviour towards deficit improvement (PBDI; eight items).

### **Statistical analysis**

The SPSS program (IBM SPSS, 2013) and Mplus 7.2 (Muthén & Muthén, 2014) were used to determine the psychometric properties of the newly developed questionnaire. Confirmatory factor analyses (CFA) were used to determine the factorial validity. The robust maximum likelihood (MLR) estimator was used to accommodate the lack of multivariate normality in the item distribution and the covariance matrix was used for input (Muthén & Muthén, 2014). To assess the goodness of model fit, the following fit indices were considered:  $\chi^2$  statistic, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA) and the Standardised Root Mean Square Residual (SRMR). For the CFI and TLI, acceptable fit is considered at a value of 0.90 and above (Hoyle, 1995; Byrne, 2010). According to Browne and Cudeck (1993), for the RMSEA, a value of 0.05 or less indicates a good fit, but values of 0.08 and less are also considered to be an acceptable model fit. The cut-off point for SRMR was set at smaller than 0.05 (Hu & Bentler 1999). The

Akaike information criterion (AIC) and sample adjusted Bayesian information criterion (BIC) were used to compare the fit of competing models. However, it should be noted that these cut-off points should only be considered as guidelines, as there is little consensus regarding the values for adequate fit (Lance, Butts & Michels, 2006).

## RESULTS

The factorial validity of the SUDIQ was investigated by means of CFA. Firstly, the proposed four-factor model was tested. This model consisted of four correlated factors, namely perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI). In order to test whether alternative models do not provide more plausible explanations for the observed inter-item covariance matrix, competing models were tested. Alternative model 2 proposed two higher-order factors, i.e. strengths use (consisting of POSSU and PBSU) and deficit improvement (consisting of POSDI and PBDI). Alternative model 3 consisted of a two-factor model, namely strengths use and deficit improvement by the organisation (consisting of POSSU and POSDI), and strengths use and deficit improvement by the individual (consisting of PBSU and PBDI). The results are displayed in Table 2.

**TABLE 2:** Fit statistics for the hypothesised and comparison models

Model	$\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	RMSEA	SRMR	AIC	BIC
Model 1	1717.73	489	0.00	0.90	0.89	0.06	0.05	70274.39	70752.10
Model 2	1791.00	490	0.00	0.89	0.88	0.06	0.06	70373.55	70516.50
Model 3	1808.20	490	0.00	0.89	0.88	0.06	0.08	70397.42	70870.58
Model 4	1311.95	371	0.00	0.91	0.91	0.06	0.05	61174.73	61302.56

$\chi^2$  = chi-square; *df* = degrees of freedom; *p* = statistical significance; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardised root mean square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion

As can be seen in Table 2, the CFI value of Model 1 was larger than 0.90 and the TLI value was just below the cut-off point of 0.90. RMSEA is above 0.05 and the SRMR is 0.05. Model 1 therefore shows acceptable model fit (except for the slightly below optimal level of the TLI fit index) and can be considered as a plausible explanation for the observed inter-item covariance matrix. Furthermore, the results suggest that Model 1 (hypothesised model) fitted

the data significantly better compared to Model 2 ( $\Delta\chi^2 = 73.27$ ;  $\Delta df = 1$ ;  $p < 0.05$ ) and Model 3 ( $\Delta\chi^2 = 90.47$ ;  $\Delta df = 1$ ;  $p < 0.05$ ). Accordingly, the AIC and BIC values for Model 1 are the lowest.

However, in an attempt to obtain better model fit and reduce the number of items, Model 1 was adapted by excluding the weakest items. This was done by excluding items with the lowest factor loadings and communalities. The following items were omitted: POSSU 1 (loading of 0.59;  $R^2 = 0.35$ ), PBSU 1 (loading of 0.57;  $R^2 = 0.32$ ), PBSU 2 (loading of 0.58;  $R^2 = 0.34$ ) and PBDI 1 (loading of 0.76;  $R^2 = 0.59$ ). Therefore, the final revised hypothesised model (Model 4) consisted of four factors, namely perceived organisational support for strengths use (seven items), perceived organisational support for deficit improvement (eight items), proactive behaviour towards strengths use (seven items) and proactive behaviour towards deficit improvement (seven items). Based on the AIC and BIC values, the revised hypothesised model (Model 4) fitted the data the best.

In Table 3 below, the standardised factor loadings, significance and communalities (variance explained) of Model 4 are presented.

**TABLE 3:** Factor loadings, significance and variance explained

Model	Standardised loading	$R^2$
<b>Perceived organisational support for strengths use</b>		
POSSU 2	0.74	0.55
POSSU 3	0.85	0.72
POSSU 4	0.87	0.75
POSSU 5	0.90	0.81
POSSU 6	0.91	0.83
POSSU 7	0.89	0.80
POSSU 8	0.89	0.79
<b>Perceived organisational support for deficit improvement</b>		
POSDI 1	0.72	0.51
POSDI 2	0.85	0.72
POSDI 3	0.88	0.77
POSDI 4	0.81	0.65
POSDI 5	0.81	0.65
POSDI 6	0.77	0.59
POSDI 7	0.75	0.56
POSDI 8	0.74	0.55
<b>Proactive behaviour towards strengths use</b>		
PBSU 3	0.72	0.51
PBSU 4	0.83	0.69
PBSU 5	0.79	0.62
PBSU 6	0.76	0.58
PBSU 7	0.87	0.75
PBSU 8	0.85	0.72
PBSU 9	0.80	0.63
<b>Proactive behaviour towards deficit improvement</b>		
PBDI 2	0.78	0.60
PBDI 3	0.86	0.74
PBDI 4	0.86	0.73
PBDI 5	0.80	0.64
PBDI 6	0.72	0.52
PBDI 7	0.78	0.61
PBDI 8	0.77	0.59

Table 3 shows that all the communalities were sufficient ( $R^2 > 0.50$ ; Hair, Black, Babin, Anderson & Tatham, 2006), with factor loadings above 0.70. Therefore, no further items were excluded from subsequent analyses.

The descriptive statistics (means and standard deviations) and correlations between the dimensions of the questionnaire are presented below.

**TABLE 4:** Descriptive statistics and correlations between the SUDIQ dimensions

Dimension	<i>M</i>	<i>SD</i>	POSSU	POSDI	PBSU	$\alpha$
POSSU	3.92	1.49	-	-	-	0.95
POSDI	3.21	1.52	0.50*	-	-	0.93
PBSU	4.60	1.15	0.51*	0.32*	-	0.92
PBDI	4.02	0.30	0.34*	0.60*	0.50*	0.93

\* Correlation is significant at the 0.01 level

Table 4 indicates that all the dimensions of the SUDIQ are moderately and positively correlated. All correlations are statistically significant ( $p \leq 0.01$ ). Sufficient Cronbach's alpha coefficients ( $\alpha \geq 0.70$ ) (Nunnally & Bernstein, 1994) were obtained for all the dimensions.

The correlations between the four SUDIQ dimensions and other variables to determine the convergent validity and criterion validity are presented in Table 5.

**TABLE 5:** Correlations between the SUDIQ dimensions and other constructs

Dimension	1	2	3	4	5	6	7	8	9	10	11
1. POSSU	(0.95)	-	-	-	-	-	-	-	-	-	-
2. POSDI	0.50**	(0.93)	-	-	-	-	-	-	-	-	-
3. PBSU	0.51**	0.32**	(0.92)	-	-	-	-	-	-	-	-
4. PBDI	0.34**	0.60**	0.50**	(0.93)	-	-	-	-	-	-	-
5. Autonomy	0.48**	0.24**	0.32**	0.19**	(0.84)	-	-	-	-	-	-
6. Participation	0.51**	0.35**	0.33**	0.29**	0.53**	(0.88)	-	-	-	-	-
7. Self-efficacy	0.30**	0.21**	0.38**	0.32**	0.30**	0.24**	(0.93)	-	-	-	-
8. Vigour	0.39**	0.36**	0.40**	0.37**	0.27**	0.29**	0.42**	(0.71)	-	-	-
9. Dedication	0.48**	0.45**	0.42**	0.40**	0.31**	0.34**	0.36**	0.76**	(0.85)	-	-
10. Exhaustion	-0.19**	-0.18**	-0.11**	-0.06	-0.12**	-0.10**	-0.19**	-0.22**	-0.29**	(0.82)	-
11. Cynicism	-0.32**	-0.25**	-0.19**	-0.11**	-0.16**	-0.15**	-0.24**	-0.34**	-0.47**	0.68**	(0.81)

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

The Cronbach's alpha coefficients are presented on the diagonal in brackets

All the instruments used in this study were reliable ( $\alpha \geq 0.70$ ). The results suggest significant positive correlations between POSSU and POSDI with both autonomy and participation in decision-making. Therefore, Hypothesis 2 was confirmed. Furthermore, PBSU and PBDI were positively related to self-efficacy, confirming Hypothesis 3. The results further reveal that all four SUDIQ dimensions are positively related to vigour and dedication and negatively related to exhaustion and cynicism, except the relationship between PBDI and exhaustion, which was not significant. Therefore, Hypotheses 4, 5, 6 and 7 are confirmed.

## DISCUSSION

Although the positive psychology tradition emphasises the importance of both strengths and weaknesses (Cameron et al., 2003; Linley, Joseph, Harrington & Wood, 2006), the majority of studies in organisational research exclusively focus on either employees' strengths or their deficits, not treating both of these aspects as equally important. Furthermore, the use of employees' strengths and improvement of their deficits within the organisational context is not addressed adequately in empirical research. To address these gaps in the literature, the purpose of this study was to develop and validate the Strengths Use and Deficit Improvement Questionnaire (SUDIQ).

It was argued that employees are dependent on support from organisations to use their strengths and improve their deficits in the workplace. These concepts are referred to as perceived organisational support for strengths use (POSSU) and perceived organisational support for deficit improvement (POSDI), and were conceptualised as job resources. Similarly, employees can display proactive behaviour by actively looking for opportunities to use their strengths and improve their deficits at work. These two dimensions were labelled as proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI).

The Strengths Use and Deficit Improvement Questionnaire (SUDIQ) was developed to measure POSSU, POSDI, PBSU and PBDI. The process by DeVellis (2003) was followed and the questionnaire items were developed. Based on an assessment of the face validity of these items by industrial psychologists and master's students, the items were refined. A revised version of the SUDIQ, consisting of 33 preliminary items, was then administered in a pilot study. The results of this study showed a four-factor structure of the SUDIQ. The final SUDIQ consisted of eight POSSU items, eight POSDI items, nine PBSU items and eight PBDI items. The factorial validity and internal consistency of the SUDIQ were confirmed in a second study. For the purpose of this validation study, a larger heterogeneous sample was chosen. The results confirmed the factorial validity of the SUDIQ through confirmatory factor analysis, with a four-factor model fitting the data best when compared to one-factor and two-factor models. None of the items were problematic, and therefore all 33 items were retained for the subsequent analyses.



As can be reasonably expected, POSSU, POSDI, PBSU and PBDI were all significantly related. The practically and statistically significant positive relationship between these variables can be attributed to a conceptual overlap between the variables. The CFA results, however, suggested that POSSU, POSDI, PBSU and PBDI are still four distinct constructs, confirming that the shared variance of the construct is not problematic (Hoyle & Smith, 1994; Tabachnick & Fidell, 2007). It can therefore be concluded that POSSU, POSDI, PBSU and PBDI are theoretically-related constructs that are sufficient indicators of strengths use and deficit improvement.

To determine the convergent validity, the two job resource dimensions of the SUDIQ (POSSU and POSDI), which were conceptualised as job resources, were correlated with autonomy and participation in decision-making, two widely used job resources (Bakker et al., 2010; Demerouti et al., 2012). A positive relationship between POSSU and POSDI with both autonomy and participation in decision-making was found. This positive correlation can be ascribed to the fact that POSSU and POSDI share some conceptual overlap with autonomy and participation in decision-making, since all these variables are conceptualised as job resources (Bakker & Demerouti, 2007). All four these constructs, i.e. POSSU, POSDI, autonomy and participation in decision-making are measured by items that reflect a sense of freedom/independence in the workplace, for example freedom to work independently (autonomy), freedom to make decisions that may influence their work, and freedom to use their strengths (POSSU) and improve their deficits (POSDI) at work. The slightly stronger positive correlation between POSSU with autonomy and participation in decision-making, compared to the correlation between POSDI with autonomy and participation in decision-making may be attributed to the way in which strengths use is perceived by superiors. It may be expected that employers will be more likely to provide employees with autonomy and let them participate in decisions that are related to their strengths than they would be when activities fall within their area of weakness. Drawing on the common nature of job resources, as explained by Bakker and Demerouti (2007), it can also be reasonably expected that POSSU and POSDI will be related to other job resources, such as autonomy and participation in decision-making. They state that job resources are (a) functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate personal growth, learning and development (Bakker & Demerouti, 2007, 2013). As

previously argued, POSSU, POSDI, autonomy and participation in decision-making share these characteristics.

In addition, the convergent validity of the two proactive behaviour scales (i.e. PBSU and PBDI) was also examined. It was found that PBSU and PBDI were positively related to self-efficacy. Therefore, the convergent validity of PBSU and PBDI was confirmed. This positive relationship can be explained by the fact that when an individual actively uses his strengths, he may experience a sense of competence, since he is good at the activity. Similarly, when an employee develops his weaknesses, he may feel that he is becoming more skilled in that area. This increased sense of competence can be described as self-efficacy, considering that self-efficacy refers to the confidence an individual has in his ability to cope with difficult tasks or problems (Bandura, 1977). Occupational self-efficacy is “the competence that a person feels concerning the ability to successfully fulfil the tasks involved in his or her job” (Rigotti, Schyns & Mohr, 2008) Therefore, it is reasonable to expect PBSU and PBDI are related to occupational self-efficacy.

To determine the criterion validity, the four dimensions of the SUDIQ were related to theoretically expected outcomes. Drawing on the Job Demands-Resources model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001), it was expected that both job resources (perceived organisational support for strengths use and perceived organisational support for deficit improvement) and proactive behaviour (for strengths use and deficit improvement) will be related to work engagement and burnout (Bakker et al, 2005; Schaufeli & Bakker, 2010; Schaufeli et al., 2002; Sonnentag, 2003). The results confirmed the criterion validity of the SUDIQ, since all four SUDIQ dimensions positively correlated with work engagement and negatively correlated with burnout. There is, however, one exception in this study where PBDI was not significantly correlated with exhaustion. Although a negative correlation between these two constructs was expected, this relationship was not statistically significant. It was expected that when employees engage in activities to improve their weaknesses, they may experience a sense of mastering a skill and this positive emotion may generate some energy. However, the results of the current study suggested that this was not the case. One reason for this may be that working on one's deficits is hard work and requires some effort. Therefore, the potential of deficit improvement to lower exhaustion levels may be counteracted by the extra energy spent on improving these deficits, resulting in a net non-

significant relationship. Although the dimensions of the SUDIQ show positive correlations with engagement and negative correlations with burnout as possible outcome variables, future research is essential to confirm the predictive validity of the SUDIQ, and to provide support for the proposed underlying processes.

The results indicate that when employees feel supported to use their strengths and improve their deficits, they are more likely to experience higher levels of work engagement and lower levels of burnout. Similarly, employees who take initiative to use their strengths at work and improve their deficits at work may have higher levels of work engagement and lower levels of burnout. These results are not unexpected, since it can be argued that individuals who experience their organisation as supportive of them using their strengths and improving their deficits may tend to be more positive about their work, and this may consequently be associated with positive outcomes such as work engagement. It can furthermore be argued that POSSU and POSDI can assist employees in achieving their work goals, since strengths use and deficit improvement are associated with increased performance (Bakker, 2011; Bakker, Demerouti & Schaufeli, 2003), and previous research has confirmed that the motivational nature and propensity of job resources to assist in goal attainment may lead to higher work engagement. In addition, employees who apply their strengths at work tend to feel energised, and therefore more vigorous (Biswas-Diener, 2010), and may derive more enjoyment from their work (which is associated with dedication), since they can do what comes naturally to them. Similarly, the fostering of growth and learning (associated with the development of your weaknesses) has been proven in previous research to positively influence work engagement (Bakker, 2011; Bakker et al., 2003; Mauno, Kinnunen, Mäkikangas & Feldt, 2010; Schaufeli, Bakker & Van Rhenen, 2009).

In conclusion, this work contributes to the existing research on strengths use and deficit improvement in several ways. The development and validation of a measure of strengths use and deficit improvement by both the organisation and the employees themselves, provides researchers with the opportunity to empirically investigate the four dimensions represented in the SUDIQ. The potential positive implications that strengths use and deficit improvement may have for the organisation may assist organisations in optimising their approach to employee development.

## **Limitations and recommendations**

Given that the results of this study were based on a convenience, cross-sectional sample, the generalisability of the findings could not be determined. It is also suggested that future research confirms the factor structure of the SUDIQ across different populations, where the specific organisational context can be taken into account. Furthermore, the predictive validity of the four SUDIQ dimensions should be confirmed with longitudinal studies, as opposed to the cross-sectional design followed in this study. Another limitation in this study was the use of self-report measures, as this threatens the validity of the findings through possible response bias (Bolt & Johnson, 2009). It would therefore be ideal to assess strengths use and deficit improvement of employees with objective measures. This, however, would likely prove to be time and resources intensive. It is also suggested that future studies should examine potential bias and the equivalence of the SUDIQ to be able to draw accurate conclusions in studies that use this instrument.

In addition to the recommendations made above, it is also recommended that future research should explore the relationships between POSSU, POSDI, PBSU and PBDI to gain an understanding of the factors hindering or promoting strengths use and deficit improvement within the work context, as well as to determine potential benefits not previously identified. This information will provide organisations with an understanding of the organisational factors that are important for optimal organisational outcomes.

## **AUTHOR'S NOTE**

The first author, Me. Crizelle Els fulfilled the role of the primary researcher, and this study formed part of her PhD research. She was responsible for the conceptualisation of the article, collecting of the data, the interpretation of the research results, and the writing of the article. Prof. Karina Mostert acted as promoter to this study, whereas Dr Marianne van Woerkom acted as co-promoter. Prof. Mostert and Dr Van Woerkom played an advisory role in this study and assisted in the conceptualisation of the study and the writing of the research article. Mr Ian Rothmann (Jr.) conducted the statistical analysis for this article and assisted with the interpretation thereof. Finally, Prof. Arnold Bakker played an advisory role in this study with specific reference to the conceptualisation of the four constructs relevant in this study, as well

as with the development of the Strengths Use and Deficit Improvement Questionnaire (SUDIQ).

## **ACKNOWLEDGEMENTS**

The material in this article is based on work that the National Research Foundation (NRF) supported. Any opinions, findings, conclusions or recommendations in this article are those of the author(s). Therefore, the NRF does not accept any liability for them.

## REFERENCES

- Abdullah, Z., Ahsan, N., & Alam, S. S. (2009). The effect of human resource management practices on business performance among private companies in Malaysia. *International Journal of Business and Management*, 4(6), 65-72. doi: 10.5539/ijbm.v4n6p65
- Ashford, S. J., & Black, J. S. (1996). Proactivity during organizational entry: Antecedents, tactics, and outcomes. *Journal of Applied Psychology*, 81(2), 199-214. doi: 10.1037/0021-9010.81.2.199
- Ashford, S. J., Blatt, R., & Van de Walle, D. (2003). Reflections on the looking glass: A review of research on feedback-seeking behaviour in organizations. *Journal of Management*, 29(6), 769-799. doi: 10.1016/S0149-2063(03)00079-5
- Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, 20(4), 265-269. doi: 10.1177/0963721411414534
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309-328. doi: 10.1108/02683940710733115
- Bakker, A. B., & Demerouti, E. (2014). Job Demands-Resources theory. In C. Cooper, & P. Chen (Eds.), *Wellbeing: A complete reference guide* (Vol. 3, pp. 37–64). Chichester, UK: John Wiley & Sons Ltd.
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, 10(2), 170-180. doi: 10.1037/1076-8998.10.2.170
- Bakker, A. B., Van Veldhoven, M., & Xanthopoulou, D. (2010). Beyond the demand-control model: Thriving on high job demands and resources. *Journal of Personnel Psychology*, 9(1), 3-16. doi: 10.1027/1866-5888/a000006
- Bakker, A., Demerouti, E., & Schaufeli, W. (2003). Dual processes at work in a call centre: An application of the Job Demands–Resources model. *European Journal of Work and Organizational Psychology*, 12(4), 393-417. doi: 10.1080/13594320344000165
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. doi: 10.1037/0033-295X.84.2.191
- Bandura, A. (1992). *Exercise of personal agency through the self-efficacy mechanism*. Washington, DC: Hemisphere Publishing Corp.
- Biswas-Diener, R. (2010). *Practicing positive psychology coaching: Assessment and strategies for succes*. Hoboken, NJ: John Wiley & Sons Inc.

- Biswas-Diener, R., Kashdan, T. B., & Minhas, G. (2011). A dynamic approach to psychological strength development and intervention. *The Journal of Positive Psychology, 6*(2), 106-118. doi: 10.1080/17439760.2010.545429
- Bolt, D. M., & Johnson, T. R. (2009). Addressing score bias and differential item functioning due to individual differences in response style. *Applied Psychological Measurement, 33*(5), 335-352. doi: 10.1177/0146621608329891
- Buckingham, M., & Clifton, D. O. (2001). *Now, discover your strengths*. New York: Free Press.
- Buick, I., & Muthu, G. (1997). An investigation of the current practices of in-house employee training and development within hotels in Scotland. *Service Industries Journal, 17*(4), 652-668. doi: 10.1080/02642069700000039
- Byrne, B. (2010). *Structural equation modeling with AMOS*. New York, NY: Routledge.
- Cameron, K. S. (2003). Organizational virtuousness and performance. In K. S. Cameron, J. E. Dutton & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 48-65). San Francisco: Berrett-Koehler Publishers.
- Cameron, K. S., Dutton, J. E., & Quinn, R. E. (2003). Foundations of positive organizational scholarship. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 3-13). San Francisco: Berrett-Koehler Publishers.
- Carr, A. (2004). *Positive psychology: The science of happiness and human strengths*. East Sussex, England: Brunner-Routledge.
- Clifton, D. O., & Harter, J. K. (2003). Investing in Strengths. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 111-121). San Francisco: Berrett Koehler Publishers.
- Cozby, P. C. (2009). *Methods in behavioural research*. Boston: McGraw-Hill,
- Crant, J. M. (2000). Proactive behaviour in organizations. *Journal of Management, 26*(3), 435-462. doi: 10.1177/014920630002600304
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. Scott Long (Eds.), *Testing structural equation models* (pp. 1-9). Newbury Park, CA: Sage Publications.
- Demerouti, E., Bakker, A. B., & Fried, Y. (2012). Work orientations in the job demands-resources model. *Journal of Managerial Psychology, 27*(6), 557-575. doi: 10.1108/02683941211252428

- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The Job Demands-Resources model of burnout. *Journal of Applied Psychology, 86*(3), 499-512. doi: 10.1037/0021-9010.86.3.499
- DeVellis, R. F. (2003). *Scale development: Theory and applications*. Thousand Oaks, CA: Sage Publications.
- De Vaus, D. (2002). *Surveys in social research* (5th ed.). Sydney, Australia: Allen & Unwin.
- Du Plooy, G. M. (2002). *Communication research: Techniques, methods and applications*. Cape Town, South Africa: Juta & Co. Ltd.
- Duckworth, A. L., Steen, T. A., & Seligman, M. E. P. (2005). Positive psychology in clinical practice. *Annual Review of Clinical Psychology, 1*, 629-651. doi: 10.1146/annurev.clinpsy.1.102803.144154
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500-507. doi: 10.1037/0021-9010.71.3.500
- Erickson, R., & Grove, W. (2007). Why emotions matter: age, agitation, and burnout among registered nurses. *Online Journal of Issues in Nursing, 13*(1). doi: 10.3912/OJIN.Vol13No01PPT01
- Fink, A. (1995). *How to sample in surveys*. Thousand Oaks, CA: Sage Publications.
- Foddy, W. (1994). *Constructing questions for interviews and questionnaires: Theory and practice in social research*. Cambridge: Cambridge University Press.
- Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist, 55*(6), 647-654. doi: 10.1037//0003-066X.55.6.647
- Frese, M., & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. *Research in Organizational Behaviour, 23*(4), 133-187. doi: 10.1016/S0191-3085(01)23005-6
- Frese, M., Kring, W., Soose, A., & Zempel, J. (1996). Personal initiative at work: Differences between East and West Germany. *Academy of Management Journal, 39*(1), 37-63. doi: 10.2307/256630
- Glen, R. M. (1990). Performance appraisal: An unnerving yet useful process. *Public Personnel Management, 19*(1), 1-10.
- Gorsuch, R. L. (1997). Exploratory factor analysis: Its role in item analysis. *Journal of Personality Assessment, 68*(3), 532-560. doi: 10.1207/s15327752jpa6803\_5



- Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review*, 2(2), 143-153.
- Green, K. E., & Frantom, C. G. (2002, November). Survey development and validation with the Rasch model. Paper presented at the International Conference on Questionnaire Development, Evaluation and Testing, Charleston, SC.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2006). *Multivariate data analysis*. New Jersey, Hoboken: Pearson Education.
- Harrison, R. (1992). *Employee development*. London, England: Institute of Personal Management.
- Harzer, C., & Ruch, W. (2012). When the job is a calling: The role of applying one's signature strengths at work. *The Journal of Positive Psychology*, 7(5), 362-371. doi: 10.1080/17439760.2012.702784
- Henkin, A. B., & Holliman, S. L. (2009). Urban teacher commitment exploring associations with organizational conflict, support for innovation, and participation. *Urban Education*, 44(2), 160-180. doi: 10.1177/0042085907312548
- Hodges, T. D., & Clifton, D. O. (2004). Strengths-based development in practice. In A. Linley, & S. Joseph (Eds.), *Handbook of positive psychology in practice* (pp. 256-268). Hoboken, NJ: John Wiley and Sons.
- Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage Publications.
- Hoyle, R. H., & Smith, G. T. (1994). Formulating clinical research hypotheses as structural equation models: A conceptual overview. *Journal of Consulting and Clinical Psychology*, 62(3), 429. doi: 10.1037/0022-006X.62.3.429
- Hu, L., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus structural equation modeling, *A Multidisciplinary Journal*, 6(1), 1-55. doi: 10.1080/10705519909540118
- Hung, H., & Mondejar, R. (2001). An investigation into the inter-relationship among work, family and part-time education in Hong Kong. *Journal of Vocational Education and Training*, 53(4), 561-576. doi: 10.1080/13636820100200177
- IBM SPSS. (2013). *SPSS 22.0* [computer software]. Chicago, IL: SPSS.

- Jackson, L. T. B., Rothmann, S., & Van de Vijver, F. J. R. (2006). A model of work-related well-being for educators in South Africa. *Stress and Health, 22*(4), 263-274. doi:10.1080/14330237.2014.980617
- Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*(1), 141-151. doi: 10.1177/001316446002000116
- Karatepe, O. M. (2009). An investigation of the joint effects of organizational tenure and supervisor support on work-family conflict and turnover intentions. *Journal of Hospitality and Tourism Management, 16*(1), 73-81.
- Kerfoot, K. (2007). Staff engagement: It starts with the leader. *Nursing Economics, 25*(1), 47-48.
- Khosla, M. (2006). Positive affect and coping with stress. *Journal of the Indian Academy of Applied Psychology, 32*(3), 185-192.
- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria what did they really say? *Organizational Research Methods, 9*(2), 202-220. doi: 10.1177/1094428105284919
- Langelaan, S., Bakker, A. B., Schaufeli, W. B., & Van Doornen, L. J. P. (2006). Burnout and work engagement: Do individual differences make a difference? *Personality and Individual Differences, 40*(3), 521-532. doi: 10.1016/j.paid.2005.07.009
- Lee, C. H., & Bruvold, N. T. (2003). Creating value for employees: Investment in employee development. *The International Journal of Human Resource Management, 14*(6), 981-1000. doi:10.1080/0958519032000106173
- Levinson, H. (1965). Reciprocation: The relationship between man and organization. *Administrative Science Quarterly, 9*(4), 370-390. doi: 10.1037/11848-002
- Lewis, S. (2011). *Positive psychology at work: How positive leadership and appreciative inquire create inspiring organizations*. Oxford, England: Wiley-Blackwell.
- Linley, A. (2008). *Average to A+: Realising strengths in yourself and others*. London, England: CAPP Press.
- Linley, P. A., & Harrington, S. (2006). Strengths coaching: A potential-guided approach to coaching psychology. *International Coaching Psychology Review, 1*(1), 37-46.
- Linley, P. A., Joseph, S., Harrington, S., & Wood, A. M. (2006). Positive psychology: Past, present, and (possible) future. *The Journal of Positive Psychology, 1*(1), 3-16. doi: 10.1080/17439760500372796

- Linley, P. A., Nielsen, K. M., Wood, A. M., Gillett, R., & Biswas-Diener, R. (2010). Using signature strengths in pursuit of goals: Effects on goal progress, need satisfaction, and well-being, and implications for coaching psychologists. *International Coaching Psychology Review*, 5(1), 6-15.
- Maslach, C. (2006). Understanding job burnout in stress and quality of working life. In A. M. Rossi, P. L. Perewé, & S. L. Sauter (Eds.), *Current perspectives in occupational health* (pp. 37-51). Greenwich: Information Age Publishing.
- Mauno, S., Kinnunen, U., Mäkikangas, A., & Feldt, T. (2010). Job demands and resources as antecedents of work engagement: A qualitative review and suggestions for future research. In S. Albrecht (Eds.), *Handbook of employee engagement: Perspectives, issues, research and practice* (pp. 111–128). Cheltenham, England: Elgar.
- Merriam-Webster Dictionary. (2012). Retrieved from <http://www.merriam-webster.com/dictionary/deficits>
- Morrison, E. W. (1993). Longitudinal study of the effects of information seeking on newcomer socialization. *Journal of Applied Psychology*, 78(2), 173-183. doi: 10.1037/0021-9010.78.2.173
- Morrison, E. W., & Phelps, C. C. (1999). Taking charge at work: Extrarole efforts to initiate workplace change. *Academy of Management Journal*, 42(4), 403-419. doi: 10.2307/257011
- Muthén, L. K., & Muthén, B. O. (2014). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén,
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw-Hill.
- Organ, D. W. (1988). *Organizational citizenship behaviour: The good soldier syndrome*. Lexington, MA: Lexington Books.
- Parker, S. K. (2000). From passive to proactive motivation: The importance of flexible role orientations and role breadth self-efficacy. *Applied Psychology: An International Review*, 49(3), 447-469. doi: 10.1111/1464-0597.00025
- Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology*, 91(3), 636-652. doi: 10.1037/0021-9010.91.3.636

- Peterson, C., Stephens, J. P., Park, N., Lee, F., & Seligman, M. E. P. (2009). Strengths of character and work. In P. A. Linley, S. Harrington, & N. Garcea (Eds.), *Oxford handbook of positive psychology and work* (pp. 221-234). Oxford, UK: Oxford University Press.
- Proctor, C., Maltby, J., & Linley, P. A. (2011). Strengths use as a predictor of well-being and health-related quality of life. *Journal of Happiness Studies*, *12*(1), 153-169. doi: 10.1007/s10902-009-9181-2
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, *87*(4), 698-714. doi: 10.1037//0021-9010.87.4.698
- Rigotti, T., Schyns, B., & Mohr, G. (2008). A short version of the occupational self-efficacy scale: Structural and construct validity across five countries. *Journal of Career Assessment*, *16*(2), 238-255. doi: 10.1177/1069072707305763
- Rothmann, S., Mostert, K., & Strydom, M. (2006). A psychometric evaluation of the Job Demands-Resources Scale in South Africa. *SA Journal of Industrial Psychology*, *32*(4), 76-87. doi: 10.4102/sajip.v32i4.239
- Rust, T., Diessner, R., & Reade, L. (2009). Strengths only or strengths and relative weaknesses? A preliminary study. *The Journal of Psychology: Interdisciplinary and Applied*, *143*(5), 465-476. doi: 10.3200/JRL.143.5.465-476
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, *21*(7), 600-619. doi: 10.1108/02683940610690169
- Santos, A., & Stuart, M. (2003). Employee perceptions and their influence on training effectiveness. *Human Resource Management Journal*, *13*(1), 27-45. doi: 10.1111/j.1748-8583.2003.tb00082.x
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, *25*(3), 293-315. doi: 10.1002/job.248
- Schaufeli, W. B., & Bakker, A. B. (2010). The conceptualization and measurement of work engagement. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp.10-24). New York, NY: Psychology Press.
- Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. London, England: Taylor & Francis.

- Schaufeli, W. B., & Peeters, M. C. (2000). Job stress and burnout among correctional officers: A literature review. *International Journal of Stress Management*, 7(1), 19-48. doi: 10.1023/A:1009514731657
- Schaufeli, W. B., & Salanova, M. (2007). Work engagement: An emerging psychological concept and its implications for organizations. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki (Eds.), *Research in social issues in management: Managing social and ethical issues in organizations* (Vol. 5, pp. 135-177). Greenwich, CT: Information Age Publishers.
- Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, 30(7), 893-917. doi: 10.1002/job.595
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92. doi: 10.1023/A:1015630930326
- Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of intervention. *American Psychologist*, 60(5), 410-421. doi: 10.1037/0003-066X.60.5.410
- Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York, NY: Doubleday.
- Sonnentag, S. (2003). Recovery, work engagement, and proactive behaviour: A new look at the interface between nonwork and work. *Journal of Applied Psychology*, 88(3), 518. doi: 10.1037/0021-9010.88.3.518
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). New York, NY: Allyn and Bacon.
- Tansky, J. W., & Cohen, D. J. (2001). The relationship between organizational support, employee development, and organizational commitment: an empirical study. *Human Resource Development Quarterly*, 12(3), 285-300. doi: 10.1002/hrdq.15
- Wood, A. M., Linley, P. A., Maltby, J., Kashdan, T. B., & Hurling, R. (2011). Using personal and psychological strengths leads to increases in well-being over time: A longitudinal study and the development of the strengths use questionnaire. *Personality and Individual Differences*, 50(1), 15-19. doi: 10.1016/j.paid.2010.08.004

- Wood, S., & De Menezes, L. (1998). High commitment management in the UK: Evidence from the workplace industrial relations survey, and employers' manpower and skills practices survey. *Human Relations*, *51*(4), 485-515. doi: 10.1177/001872679805100403
- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, *26*(2), 179-201. doi: 10.5465/AMR.2001.4378011
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behaviour*, *74*(3), 235-244. doi: 10.1016/j.jvb.2008.11.003
- Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal*, *44*(4), 682-696. doi: 10.2307/3069410

## **CHAPTER 3**

### **RESEARCH ARTICLE 2**

# TESTING THE BIAS AND EQUIVALENCE OF THE STRENGTHS USE AND DEFICIT IMPROVEMENT QUESTIONNAIRE

## ABSTRACT

**Orientation:** For optimal outcomes of strengths use and deficit improvement, it is suggested that employees receive support from their organisation to use their strengths and improve their deficits. Furthermore, it is argued that employees themselves engage in proactive behaviour to use their strengths and improve their deficits at work. Following this conversation, the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) was developed to measure perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI).

**Research purpose:** The purpose of this study was to examine the item bias, structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ.

**Motivation for the study:** In the context of South Africa with different ethnic groups, accurate conclusions can only be drawn for research if the measuring instruments used to assess the constructs are free from bias and are equivalent.

**Research design, approach and method:** A cross-sectional survey research design was followed to collect the data among a convenience sample of 858 employees from various sectors in South Africa.

**Main findings:** The results confirmed the hypothesised four-factor structure of the SUDIQ. Items that were uniformly or non-uniformly biased were identified and excluded from the instrument. The uniformly biased items included one POSSU item, two POSDI items, two PBSU items and three PBDI items. Three POSSU items were found to be non-uniformly biased. The structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ were confirmed.

**Practical/managerial implications:** Provisional evidence from this study suggests that the SUDIQ is suitable for use among the three ethnic groups included in this study. These results increase the probability that future studies with the SUDIQ among other ethnic groups will be unbiased and equivalent, which will increase the accuracy of assumptions made from future studies.



**Contribution:** This study contributed to existing literature since no previous research has assessed the bias and equivalence of the SUDIQ.

**Keywords:** perceived organisational support for strengths use; perceived organisational support for deficit improvement; proactive behaviour towards strengths use; proactive behaviour towards deficit improvement; Strengths Use and Deficit Improvement Questionnaire (SUDIQ); bias; equivalence

## INTRODUCTION

Traditionally, organisations were almost exclusively concerned with those aspects of employees and their work that need to be improved upon. During this time, organisations were mainly focused on the development of employees' weaknesses or deficits (Carr, 2011; Slade, 2010; Wood & Tarrier, 2010). However, in recent years, research has shown that employees are organisations' greatest asset and that if they are well cared for, employees' well-being can be beneficial to the organisation (Wood, 2005). This realisation ignited the positive psychology movement that focuses on the aspects of human life that make individuals flourish (Seligman & Csikszentmihalyi, 2000). In reaction to the positive psychology movement, the positive organisational scholarship movement has emerged in an attempt to investigate the positive outcomes, processes and attributes specifically of organisations and their members. Positive organisational scholarship therefore refers to the application of positive psychology principles within an *organisational* context (Cameron, Dutton & Quinn, 2003). Of particular interest in the positive organisational scholarship tradition is how employees' strengths can be applied for optimal outcomes for both the individual and the organisation (Cameron et al., 2003 Clifton & Harter, 2003).

Most scholars following the positive organisational scholarship paradigm argue that in the past there was an overemphasis on employees' deficits (French & Holden, 2012; Luthans, Youssef & Avolio, 2007). Recently, however, research leaned towards an overemphasis on employee strengths (Rust, Diessner & Reade, 2009; Sirmon, Hitt, Arregle & Campbell, 2010). In reaction to this, many researchers promote an approach where the focus is not exclusively on employees' strengths, nor exclusively on their deficits, but rather an approach where their strengths can be used and their deficits be improved upon for optimal functioning

at work (Boniwell, Kauffman & Silberman, 2014; Kaiser & Overfield, 2011; Quick, Cooper, Gibbs, Little & Nelson, 2010; Tweed, Bhatt, Dooley, Spindler, Douglas & Viljoen, 2011). Research has confirmed the benefits of both strengths use and deficit improvement. For example, previous research has found strengths use to be related to work engagement, increased happiness and increased wellbeing (Govindji & Linley, 2007; Linley & Harrington, 2006; Proctor, Maltby & Linley, 2011). Similarly, the improvement of deficits can increase employees' job satisfaction, reduce turnover intentions and improve organisational effectiveness (Brown, 2002; García, 2005; Pfeffer & Sutton, 2006; Schmidt, 2007).

In line with the approach where both the strengths use and deficit improvement of employees are considered to be important, Els et al. (article 1 of this thesis) argued that strengths use and deficit improvement within the work context should be viewed as a four-dimensional ideology, where both strengths and deficits should be treated with equal importance. They also reason that it is both the organisation and the individual's prerogative to use employees' strengths and to improve their deficits – i.e. that organisations ought to provide employees with the necessary support to use their strengths and improve their deficits and that individuals should engage in proactive behaviour to apply their strengths and use opportunities to improve their deficits.

Based on this argument, Els et al. (article 1 of this thesis) conceptualised four dimensions related to strengths use and deficit improvement, namely perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI). Following this conceptualisation, Els et al. (article 1 of this thesis) developed the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) to measure POSSU, POSDI, PBSU and PBDI. The questionnaire was validated in a South African study. The results of the validation study showed that the SUDIQ is reliable and the factorial validity, convergent validity and predictive validity of the instrument was confirmed among a heterogeneous sample ( $N = 699$ ) across sectors in South Africa.

Although the results of this validation study were very favourable, it is not sufficient to only investigate validity and reliability of an instrument in a very diverse country with several ethnic groups, such as South Africa. It is also important to ensure that any measure is applied fairly among different ethnic groups and that meaningful cross-cultural comparisons can be

made. Due to this multicultural context, the Employment Equity Act 55 of 1998, Section 8 (Government Gazette, 1998) stipulates that: “Psychological testing and other similar assessments are prohibited unless the test or assessment being used: (a) has been scientifically shown to be valid and reliable, (b) can be applied fairly to all employees; and (c) is not biased against any employee or group”. With regard to the first requirement of the Employment Equity Act, reasonable evidence has been provided that the SUDIQ is valid and reliable. The next step will be to provide evidence that the SUDIQ is equivalent across groups and free from bias (He & Van de Vijver, 2012; Van de Vijver & Leung, 2011).

The primary objective of this study was therefore to investigate the item bias, structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ.

## **LITERATURE REVIEW**

### **The Strengths Use and Deficit Improvement Questionnaire (SUDIQ)**

The Strengths Use and Deficit Improvement Questionnaire (SUDIQ) is an instrument measuring strengths use and deficit improvement within the organisational context. Based on the taxonomy of Els et al. (article 1 of this thesis) mentioned above, when an organisation allows its employees to use their strengths and improve their deficits at work, they may perceive the organisation as supportive. Therefore, perceived organisational support for strengths use (POSSU) refers to the support an employee receives from the organisation to use his/her strengths, whereas perceived organisational support for deficit improvement (POSDI) is an indication of the extent to which employees feel their organisation supports the improvement of their deficits. They further assert that it is also the individual’s prerogative to engage in proactive, self-starting behaviour to use their strengths and improve their deficits. Therefore, they conceptualise proactive behaviour towards strengths use (PBSU) as employees’ self-starting behaviour directed towards using their strengths in the workplace, and proactive behaviour towards deficit improvement (PBDI) refers to the extent to which employees engage in self-starting behaviour directed towards improving their deficits in the workplace.

Based on the conceptualisation of strengths use and deficit development, the SUDIQ was developed to measure the four dimensions: POSSU, POSDI, PBSU and PBDI. The item development phase was completed by following the guidelines of DeVillis (2003). Preliminary items were developed and presented to experts to assess the face validity of the items. Problematic items were then excluded from the pilot instrument and a pilot study was conducted among a heterogeneous sample ( $N = 241$ ) in South Africa. After they had conducted the pilot study, the final set of items was selected for the SUDIQ, which consisted of 33 items in total. More specifically, POSSU consisted of eight items, POSDI consisted of eight items, PBSU was measured with nine items and PBDI was measured with eight items.

The SUDIQ has been validated in a South African heterogeneous sample ( $N = 699$ ) consisting of participants from different industries. To assess the factorial validity of the SUDIQ, the hypothesised four-factor structure was found to be the best fitting model when compared to competing models. The SUDIQ was also proven to be reliable with Cronbach's alpha coefficients of 0.96 for POSSU, 0.93 for POSDI, 0.94 for PBSU and 0.94 for PBDI. In terms of the convergent validity, the two perceived organisational support dimensions of the SUDIQ (i.e. POSSU and POSDI) correlated positively with three other job resources, namely colleague support, supervisory relationships and autonomy, and the PBSU and PBDI dimensions correlated positively with self-efficacy. The predictive validity was confirmed and it was established that all four of the SUDIQ dimensions were related to work engagement and burnout (Els et al., article 1 of this thesis).

### **Bias and equivalence**

Bias and equivalence are two concepts related to cross-cultural research that are deemed important for cross-cultural comparison (He & Van de Vijver, 2013). Bias is found when score differences on a particular construct cannot be attributed to actual differences in the underlying trait that is measured. The validity of an instrument is threatened when it is applied in different cultures. Equivalence is often described as the opposite of bias, and refers to the level of comparability of scores across cultures (He & Van de Vijver, 2012, 2013; Van de Vijver & Tanzer, 2004). Equivalence (measurement invariance) refers to "whether or not, under different conditions of observing and studying phenomena, measurement operations yield measures of the same attribute" (Horn & McArdle 1992, p. 117). It therefore implies that members from different groups who have the same standing on a particular construct will

score the same on a test and ascribe the same meaning to measurement items (Schmitt & Kuljanin, 2008; Steenkamp & Baumgartner, 1998). Only when the equivalence of an instrument has been confirmed will researchers be able to unambiguously interpret group differences (Horn & McArdle, 1992; Steenkamp & Baumgartner, 1998).

Van de Vijver and Tanzer (2004) identified a taxonomy of bias and equivalence, and proposed three types of bias (i.e. construct bias, method bias and item bias) and three types of equivalence (i.e. construct equivalence, measurement unit equivalence and full score equivalence).

#### *Types of bias*

- *Construct bias* is present when the underlying construct that is measured does not hold the same meaning across different groups (Van de Vijver & Leung, 1997a, 1997b; Van de Vijver & Tanzer, 2004). This can be due to the possibility that the definitions of the construct across different groups vary, or the behaviours associated with the construct differ across groups (Van de Vijver & Leung, 2011).
- *Method bias* refers to problems related to the measurement procedures used in the administration of an instrument (Van de Vijver & Tanzer, 2004). Method bias can occur for a number of reasons, including the influence of the tester/interviewer, communication problems, different familiarity with the content or procedures, differential response styles, differences in administration conditions, etc. (Van de Vijver & Leung, 2011).
- *Item bias* (the presence of differential item functioning) is mostly found as a result of the poor translation of items, ambiguous items, differences in the connotative meaning and/or appropriateness of the item content, etc. (Van de Vijver & Leung, 2011). Two types of item bias relevant to this study are uniform bias and non-uniform bias. Uniform bias is present when the bias on scores is consistently the same for all score levels on an instrument. Non-uniform bias is present when the size of the difference varies across different levels, and consequently the bias is not identical for all score levels (Matsumoto & Van de Vijver, 2011; Mellenbergh, 1982; Van de Vijver & Leung, 1997a).

### *Types of equivalence*

- *Construct equivalence* (also known as configural invariance; Van Herk, Poortinga & Verhallen, 2005) assesses whether the same factor structure of the instrument is valid (i.e. the same number of factors, with the same items loading on each factor) for each of the groups. That is, participants from the different groups conceptualise the constructs in the same way, and the understanding of the concept is therefore not reliant on cultural context (Riordan & Vandenberg, 1994; Tayeb, 1994).
- *Measurement unit equivalence* (or metric invariance; Van Herk et al., 2005) provides an indication of the equivalence of the factorial loading parameters across the three ethnic groups. Therefore, the factor loadings of each item on each factor are the same for all the groups (Schmitt & Kuljanin, 2008; Steenkamp & Baumgartner, 1998; Vandenberg & Lance 2000).
- Scalar or *full-score equivalence* (also known as scalar invariance; Van Herk et al., 2005) tests whether the item intercepts and factor loadings are equal across groups when the same item is regressed on the latent factor (Schmitt & Kuljanin, 2008; Vandenberg, 2002; Vandenberg & Lance, 2000). If the intercepts of groups are not equal, there is the possibility of item bias (differential item functioning). The confirmation of scalar equivalence allows the researcher to safely draw the conclusion that the average scores obtained in two cultures are different or equal (Van de Vijver, 2011).

For the purpose of this study, item bias, structural equivalence (also addressing the construct bias), measurement unit equivalence and full score equivalence of the SUDIQ were examined. This study was conducted among a heterogeneous sample of participants from various organisations, each with its own work environment. Furthermore, the surveys were distributed by various individuals. Therefore, the method bias of the SUDIQ was not examined, as it was difficult to control for the setting in which the measuring instrument was administered.

## **RESEARCH METHOD**

### **Research approach**

This study followed a quantitative research approach. A cross-sectional research design was chosen, implying that the data was collected at one particular point in time (Saunders, Lewis & Thornhill, 2009). Since the purpose of this study was not to investigate the relationships between variables, a cross-sectional research design was deemed appropriate (Bryman et al., 2014). The study can be described as exploratory, since the purpose of the study is to gain insight into some unknown territory (Fouché & De Vos, 2012).

### **Research participants and procedure**

An availability sample of 858 employees from various sectors, including mining, banking, retail, manufacturing, and education in South Africa was drawn. Since this heterogeneous sample was free from a specific organisational context, it was deemed appropriate to assess the bias and equivalence of the SUDIQ. Participation in this study was completely voluntary and those employees who were available at their respective workplaces at the given time of questionnaire distribution were recruited. Each participant received a letter explaining the purpose of the research study. They were also assured that the results will be anonymous and confidential. After they had provided their informed consent, the participants completed the questionnaires and the researchers collected them from the participants. Some participants indicated electronic surveys as their administration mode of choice, and these individuals were sent an electronic questionnaire. Previous research has indicated that the comparison between paper and pencil versus electronic measures has been found to be relatively free from method bias (Davis, 1999; Hardré, Crowson, Xie & Ly, 2006; Richman, Kiesler, Weisband & Drasgow, 1999); therefore, this was not considered to be problematic, especially since it was requested by the participants themselves. The participants were allowed to complete the questionnaires at a time and place convenient to them. Furthermore, due to the instrument being distributed via paper and pencil and electronically, it was not possible to calculate a response rate in this study.

The characteristics of the participants are presented in Table 1.

**TABLE 1: Characteristics of the participants**

Item	Category	Blacks (N = 316)		White (N = 449)		Coloured (N = 93)		Total sample (N = 858)	
		Total	%	Total	%	Total	%	Total	%
<b>Gender</b>	Female	174	55.10	254	56.60	57	61.30	485	57.10
	Male	136	43.00	192	42.80	36	38.70	364	42.90
<b>Home Language</b>	English	14	4.40	118	26.30	54	58.10	186	21.70
	Afrikaans	3	0.90	323	71.90	36	38.70	362	42.20
	Setswana	60	19.00	-	-	-	-	60	7.00
	isiXhosa	42	13.30	2	0.40	1	1.10	45	5.20
	Xitsonga	9	2.80	-	-	-	-	9	1.00
	isiZulu	35	11.10	-	-	1	1.10	36	4.20
	Sesotho	93	29.40	-	-	-	-	93	10.80
	isiNdebele	2	0.60	-	-	-	-	2	0.20
	Tshivenda	8	2.50	-	-	-	-	8	0.90
	Siswati	3	0.90	-	-	-	-	3	0.30
	Sepedi	37	11.70	-	-	-	-	37	4.30
	Other	7	2.20	3	0.70	1	1.10	11	1.30
<b>Age</b>	18-19 years	1	0.30	11	2.40	1	1.10	13	1.50
	20-29 years	104	32.90	132	29.40	29	31.20	265	30.90
	30-39 years	122	38.60	123	27.40	42	45.20	287	33.40
	40-49 years	49	15.50	86	19.20	8	8.60	143	16.70
	50-59 years	25	7.90	72	16.00	9	9.70	106	12.40
	60-69 years	4	1.30	17	3.80	1	1.10	22	2.60
	70-79 years	-	-	3	0.70	-	-	3	0.30
<b>Highest qual.</b>	Grade 10	23	7.30	28	6.20	4	4.30	55	6.40
	Grade 11	16	5.10	11	2.40	4	4.30	31	3.60
	Grade 12	112	35.40	192	42.80	64	68.80	368	42.90
	Technical college Diploma	42	13.30	53	11.80	10	10.80	105	12.20
	Technikon diploma	37	11.70	35	7.80	6	6.50	78	9.10
	University degree	48	15.20	47	10.50	4	4.30	99	11.50
	Post-graduate Degree	29	9.20	79	17.60	-	-	108	12.60
<b>Org. tenure</b>	0-1 years	74	23.40	98	21.80	13	14.00	185	21.60
	2-5 years	124	39.20	140	31.20	42	45.20	306	35.70
	6-10 years	62	19.60	103	22.90	19	20.40	184	21.40
	11-20 years	36	11.40	50	11.10	7	7.50	93	10.80
	21-30 years	11	3.50	45	10.00	8	8.60	64	7.50
	31-40 years	3	0.90	10	2.20	-	-	13	1.50
	41-50 years	1	0.30	1	0.20	-	-	2	0.20



<b>Job tenure</b>	<b>0-1 years</b>	<b>110</b>	<b>34.80</b>	<b>160</b>	<b>35.60</b>	<b>27</b>	<b>29.00</b>	<b>297</b>	<b>35.10</b>
2-5 years	131	41.50	160	35.60	38	40.90	329	38.90	
6-10 years	42	13.30	80	17.80	18	19.40	140	16.60	
11-20 years	20	6.30	26	5.80	3	3.20	49	5.80	
21-30 years	6	1.90	11	2.4	4	4.30	21	2.50	
31-40 years	1	0.30	7	1.60	-	-	8	0.90	
41-50 years	-	-	1	0.20	-	-	1	0.10	

The participants were from different ethnic groups with the main representations being white (52.30%), black (36.80%) and coloured (10.80%). In the total sample, 57.10% were females and 42.90% males. Furthermore, in all three ethnic groups, the majority of the participants were females. The mean age of the population was 36.33 years with a standard deviation of 11.04 years. The mean age for white participants was 37.61 years (standard deviation 12.25 years). 34.74 years for black participants (standard deviation 9.27 years), and for coloured participants it was 35.40 years (standard deviation 9.54 years). The majority of the population was Afrikaans speaking (42.20%), followed by English (21.70%) and 35.00% African languages. In the black sample, the majority of the participants were Sesotho (29.40%) and Setswana (19.00%), while in the white sample most of the participants were Afrikaans (71.90%). The majority of the coloured sample consisted of English (58.10%) participants. In all the ethnic groups, most of the participants held a grade 12 qualification. Finally, the average organisation tenure for the total sample is 7.14 years (black = 6.27 years; white = 7.85 years; coloured = 6.67 years), and specific position in the organisation 4.59 years (black = 4.22 years; white = 4.87 years; coloured = 4.53 years).

### **Measuring instruments**

A biographical questionnaire was administered to determine the characteristics of the participants, including gender, ethnicity, age, language, educational level, organisational tenure and position tenure.

The newly developed *Strengths Use and Deficit Improvement Questionnaire* (SUDIQ) by Els et al. (article 1 of this thesis) to measure perceived organisational support for strengths use (POSSU; eight items, e.g. “In this organisation, people can use their talents”), perceived organisational support for deficit improvement (POSDI; eight items, e.g. “In this

organisation, employees receive training to improve their weak points”), proactive behaviour towards strengths use (PBSU; nine items, e.g. “In my job, I try to apply my talents as much as possible”) and proactive behaviour towards deficit improvement (PBDI; eight items, e.g. “I engage in activities to develop my weak points at work”). These four constructs were measured on a 7-point Likert-type scale ranging from 0 (almost never) to 6 (almost always). The internal consistencies for each of the dimensions were good with Cronbach’s alpha coefficients for POSSU = 0.96, POSDI = 0.93, PBSU = 0.92 and PBDI = 0.92 (Els et al., article 1 of this thesis).

### **Statistical analysis**

SPSS 22.0 (IBM SPSS, 2013) was used to conduct the descriptive statistics (means and standard deviations), as well as to compute the Cronbach’s alpha coefficients of the SUDIQ. The cut-off point of 0.70 for Cronbach’s alpha coefficients was deemed satisfactory (Nunnally & Bernstein, 1994).

To investigate the differential item functioning (DIF) of the items (i.e. to determine the presence of uniform and non-uniform item bias), stepwise multiple regression in SPSS 22.0 (IBM SPSS, 2013) was performed. For each of the items, a three-step regression was conducted. In step 1, the scale score was regressed on the item score. In step 2, ethnicity was included in the analysis to assess the main effect of ethnicity. Finally, in step 3, an interaction between the scale score and ethnicity was included. If step 2 in the regression is significant, the item is uniformly biased. Therefore, one culture scores consistently higher or lower than another culture, irrespective of the true level of the construct. This implies that different ethnic groups have different mean item scores, but the same regression slope. In the case where step 3 is significant, it can be concluded that the item is non-uniformly biased (Van de Vijver & Poortinga, 1997). Non-uniform bias is present when the size of the difference in item scores varies across different levels, and therefore the bias is not identical for all score levels. Consequently, both the item means and the regression slopes differ between the ethnic groups (Fischer, 2009; Mellenbergh, 1982; Van de Vijver & Leung, 1997a). Significance was set at the value  $p \leq 0.05$ .

To test the equivalence (i.e. configural, metric and scalar invariance) of the SUDIQ, confirmatory factor analysis (CFA) was conducted with Mplus 7.2 (Muthén & Muthén,

2014). Maximum likelihood estimation was implemented and the fit indices were considered: the  $\chi^2$  statistic, the comparative fit index (CFI) and the Tucker-Lewis index (TLI), and CFI and TLI values above 0.90 were considered an acceptable fit (Byrne, 2010; Hoyle, 1995). Root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) were also considered and values below 0.08 are indicative of an acceptable model fit (Browne & Cudeck, 1993). The Akaike information criterion (AIC) and sample adjusted Bayesian information criterion (BIC) were used to compare the fit of competing models. However, it should be noted that these cut-off points should only be considered as guidelines, as there is little consensus regarding the values for adequate fit (Lance, Butts & Michels, 2006). The model fit of the configural, metric and scalar invariance models is compared to each other (metric against configural, scalar against configural and scalar against metric), and if in all cases the model significance is  $p \geq 0.05$ , the presence of configural, metric and scalar invariance is confirmed.

## RESULTS

The results from the statistical analysis are presented in the section below. Specifically, the research questions were addressed through descriptive statistics, correlation coefficients, differential item functioning by means of multiple regression analysis, and finally structural equation modelling (SEM) was done to assess the different types of equivalence.

### *Descriptive statistics*

The descriptive statistics (means and standard deviations), as well as the Cronbach's alpha coefficients of the dimensions of the SUDIQ for each ethnic group and for the total sample are presented in Table 2.

**TABLE 2:** Means, standard deviations and Cronbach's alpha coefficients of the SUDIQ dimensions

Dimension	Black			White			Coloured			Total sample		
	Mean	SD	$\alpha$	Mean	SD	$\alpha$	Mean	SD	$\alpha$	Mean	SD	$\alpha$
POSSU	3.89	1.64	0.92	4.31	1.38	0.96	3.32	1.43	0.93	4.05	1.52	0.94
POSDI	3.50	1.65	0.91	3.59	1.63	0.93	2.95	1.47	0.89	3.49	1.63	0.92
PBSU	4.73	1.24	0.90	5.02	1.12	0.94	4.47	1.26	0.93	4.86	1.19	0.92
PBDI	4.37	1.34	0.86	4.35	1.35	0.91	3.84	1.40	0.91	4.30	1.36	0.89

SD = standard deviation;  $\alpha$  = Cronbach's alpha coefficient

The results in Table 2 reveal that all four dimensions of the SUDIQ are reliable with Cronbach's alpha coefficients above 0.70 (Nunnally & Bernstein, 1994) for all three the ethnic groups.

### ***Differential item functioning***

Multiple regression analyses were conducted to investigate the differential item functioning (DIF) of the SUDIQ. In the regression analysis, each individual item was set as the dependent variable. In step 1 of each regression, the total scale score was entered. In step 2, ethnicity was entered, and in the final step an interaction term between the item and ethnicity was entered into the regression. This was done for each item individually, and therefore three models were produced for each item of the SUDIQ. In the case where model 2 (produced in step 2) was found to be significant, the item was deemed to be uniformly biased (i.e. there were differences in scores between cultures). If model 3 (produced in step 3) with the interaction term was significant, it was an indication of non-uniform bias (i.e. within group differences; Van de Vijver & Poortinga, 1997).

**TABLE 3:** Differential item functioning of the SUDIQ

		Step 1			Step 2: Uniform bias				Step 3: Non-uniform bias			
		$\beta$	$P$	$R^2$	$\beta$	$p$	$R^2$	$\Delta R^2$	$\beta$	$p$	$R^2$	$\Delta R^2$
<b>Perceived organisational support for strengths use (POSSU)</b>												
<b>POSSU1</b>	This organisation uses employees' strengths	0.72	0.00	0.52	-0.00	0.92	0.52	0.00	0.28	<b>0.02*</b>	0.52	0.00
<b>POSSU2</b>	In this organisation, employees can do their jobs in a manner that best suit their strong points	0.83	0.00	0.69	-0.02	0.24	0.69	0.00	0.05	0.60	0.69	0.00
<b>POSSU3</b>	This organisation provides employees with the opportunity to do what they are good at	0.89	0.00	0.79	-0.01	0.63	0.79	0.00	-0.17	<b>0.03*</b>	0.79	0.00
<b>POSSU4</b>	In this organisation, people can use their talents	0.89	0.00	0.78	0.04	<b>0.02*</b>	0.78	0.00	-0.20	<b>0.01*</b>	0.79	0.00
<b>POSSU5</b>	In this organisation, people's job tasks are aligned with their strengths	0.89	0.00	0.80	-0.02	0.29	0.80	0.00	-0.04	0.60	0.80	0.00
<b>POSSU6</b>	This organisation makes the most of people's talents	0.90	0.00	0.81	0.00	0.86	0.81	0.00	0.01	0.86	0.81	0.00
<b>POSSU7</b>	This organisation ensures that people can apply their strong points in their jobs	0.90	0.00	0.81	0.00	0.97	0.81	0.00	0.07	0.36	0.81	0.00
<b>POSSU8</b>	This organisation focuses on what people are good at	0.89	0.00	0.79	0.00	0.87	0.79	0.00	0.02	0.78	0.79	0.00
<b>Perceived organisational support for deficit improvement (POSDI)</b>												
<b>POSDI1</b>	This organisation emphasises the development of employees' weak points	0.80	0.00	0.64	0.04	0.08	0.64	0.00	-0.09	0.29	0.64	0.00
<b>POSDI2</b>	In this organisation, employees receive training to improve their weak points	0.86	0.00	0.74	-0.00	0.95	0.74	0.00	-0.03	0.69	0.74	0.00
<b>POSDI3</b>	This organisation focuses on people's areas of development	0.89	0.00	0.79	0.00	0.82	0.79	0.00	0.01	0.90	0.79	0.00
<b>POSDI4</b>	In this organisation, people are required to work on their shortcomings	0.85	0.00	0.72	0.05	<b>0.01*</b>	0.72	0.00	0.06	0.46	0.72	0.00
<b>POSDI5</b>	In this organisation, development plans are aimed to better people's weaknesses	0.85	0.00	0.73	-0.05	<b>0.01*</b>	0.73	0.00	0.13	0.10	0.73	0.00
<b>POSDI6</b>	In this organisation, people are expected to improve the things they are not good at	0.83	0.00	0.68	-0.01	0.67	0.69	0.00	-0.10	0.23	0.69	0.00
<b>POSDI7</b>	In this organisation, performance appraisals address people's areas of development	0.83	0.00	0.69	-0.02	0.43	0.68	0.00	0.03	0.76	0.68	0.00
<b>POSDI8</b>	In this organisation, employees receive feedback regarding their limitations	0.81	0.00	0.65	-0.02	0.40	0.65	0.00	0.00	0.97	0.65	0.00

<b>Proactive behaviour towards strengths use (PBSU)</b>												
<b>PBSU1</b>	I actively look for job tasks I am good at	0.71	0.00	0.51	0.05	<b>0.04*</b>	0.51	0.00	0.11	0.45	0.51	0.00
<b>PBSU2</b>	I use my strengths at work	0.73	0.00	0.53	0.02	0.35	0.53	0.00	0.26	0.06	0.53	0.00
<b>PBSU3</b>	In my job, I try to apply my talents as much as possible	0.82	0.00	0.68	-0.01	0.60	0.68	0.00	-0.05	0.68	0.68	0.00
<b>PBSU4</b>	I organise my job to suit my strong points	0.86	0.00	0.73	-0.08	<b>0.00*</b>	0.74	0.01	0.10	0.35	0.74	0.00
<b>PBSU5</b>	I draw on my talents in the workplace	0.82	0.00	0.67	0.02	0.47	0.67	0.00	-0.02	0.83	0.67	0.00
<b>PBSU6</b>	At work, I focus on the things I do well	0.81	0.00	0.65	0.03	0.11	0.65	0.00	-0.06	0.60	0.65	0.00
<b>PBSU7</b>	In my job, I make the most of my strong points	0.87	0.00	0.76	-0.00	0.95	0.76	0.00	-0.11	0.27	0.76	0.00
<b>PBSU8</b>	I capitalise on my strengths at work	0.85	0.00	0.73	-0.01	0.46	0.73	0.00	-0.17	0.09	0.73	0.00
<b>PBSU9</b>	I seek opportunities to do my work in a manner that best suits my strong points	0.83	0.00	0.69	-0.03	0.19	0.69	0.00	-0.05	0.63	0.69	0.00
<b>Proactive behaviour towards deficit improvement (PBDI)</b>												
<b>PBDI1</b>	In my job, I concentrate on my areas of development	0.82	0.00	0.67	0.00	0.96	0.67	0.00	0.05	0.62	0.67	0.00
<b>PBDI2</b>	At work, I focus on developing the things I struggle with	0.84	0.00	0.70	-0.01	0.48	0.70	0.00	0.12	0.21	0.70	0.00
<b>PBDI3</b>	I engage in activities to develop my weak points at work	0.86	0.00	0.74	-0.02	0.32	0.74	0.00	-0.07	0.43	0.74	0.00
<b>PBDI4</b>	In my job, I work on my shortcomings	0.84	0.00	0.71	0.10	<b>0.00*</b>	0.71	0.01	0.00	0.98	0.71	0.00
<b>PBDI5</b>	At work, I seek training opportunities to improve my weaknesses	0.80	0.00	0.64	-0.05	<b>0.03*</b>	0.64	0.00	-0.05	0.65	0.64	0.00
<b>PBDI6</b>	I reflect on how I can improve the things in my job that I am not good at	0.85	0.00	0.72	-0.04	<b>0.03*</b>	0.72	0.00	0.13	0.17	0.72	0.00
<b>PBDI7</b>	In my job, I make an effort to improve my limitations	0.84	0.00	0.71	0.02	0.42	0.71	0.00	-0.11	0.25	0.71	0.00
<b>PBDI8</b>	At work, I seek feedback regarding my areas of development	0.75	0.00	0.56	0.00	0.86	0.56	0.00	-0.07	0.55	0.56	0.00

For each of the SUDIQ items, step 1 in the multiple regressions produced a significant model ( $p \leq 0.01$ ). The results from Table 3 show that the following items are biased:

- POSSU item 1 (non-uniform;  $\beta = 0.28$ ;  $p = 0.02$ ), item 3 (non-uniform;  $\beta = -0.17$ ;  $p = 0.03$ ) and item 4 (uniform;  $\beta = 0.04$ ;  $p = 0.02$ ; and non-uniform;  $\beta = -0.20$ ;  $p = 0.01$ );
- POSDI item 4 (uniform;  $\beta = 0.05$ ;  $p = 0.01$ ) and item 5 (uniform;  $\beta = -0.05$ ;  $p = 0.01$ );
- PBSU item 1 (uniform;  $\beta = 0.05$ ;  $p = 0.04$ ) and item 4 (uniform;  $\beta = -0.08$ ;  $p = 0.00$ );
- PBDI item 4 (uniform;  $\beta = 0.10$ ;  $p = 0.00$ ), item 5 (uniform;  $\beta = -0.05$ ;  $p = 0.03$ ) and item 6 (uniform;  $\beta = -0.04$ ;  $p = 0.03$ ).

### ***Equivalence testing***

Before the equivalence analysis was conducted, the measurement model of the SUDIQ was assessed with the biased items excluded. For this purpose, a confirmatory factor analysis (CFA) was conducted. Four competing models were specified to assess the factor structure of the SUDIQ. Firstly, the hypothesised four-factor model was specified with POSSU, POSDI, PBSU and PBDI as distinct factors. Next, a one-factor model was specified that included all four the dimensions, i.e. POSSU, POSDI, PBSU and PBDI. Then, a two-factor model (a) was specified with the two perceived organisational support dimensions (i.e. POSSU and POSDI) grouped together, and the two proactive behaviour dimensions (PBSU and PBDI) grouped together as the second factor. Finally, a second two-factor model (b) was specified, consisting of the two strengths dimensions (POSSU and PBSU) as factor one and the two deficit dimensions (POSDI and PBDI) as factor two.

The results showed that the hypothesised four-factor model fitted the data best ( $\chi^2 = 1428.09$ ;  $df = 224$ ;  $p = 0.00$ ; CFI = 0.93; TLI = 0.92; RMSEA = 0.08; SRMR = 0.05; AIC = 64183.61; BIC = 64544.78). The hypothesised model also fitted the data significantly better compared to the competing models, including the:

- one-factor model ( $\chi^2 = 7865.37$ ;  $df = 230$ ;  $p = 0.00$ ;  $\Delta\chi^2 = 6437.28$ ;  $\Delta df = 6$ ; CFI = 0.55; TLI = 0.50; RMSEA = 0.19; SRMR = 0.13; AIC = 70608.89; BIC = 70941.17);
- two-factor model (a) ( $\chi^2 = 5203.71$ ;  $df = 229$ ;  $p = 0.00$ ;  $\Delta\chi^2 = 3775.62$ ;  $\Delta df = 5$ ; CFI = 0.71; TLI = 0.68; RMSEA = 0.15; SRMR = 0.11; AIC = 67949.23; BIC = 68286.33); and
- two-factor model (b) ( $\chi^2 = 5830.97$ ;  $df = 229$ ;  $p = 0.00$ ;  $\Delta\chi^2 = 4402.88$ ;  $\Delta df = 5$ ; CFI = 0.0.67; TLI = 0.63; RMSEA = 0.16; SRMR = 0.12; AIC = 7745.70; BIC = 7853.09).

Next, the construct equivalence of the SUDIQ (configural invariance) was assessed. Consequently, it was determined whether the factor structure of the instrument is the same for all three ethnic groups. The measurement unit equivalence was examined by means of metric invariance testing. Therefore, it was assessed whether the factor loadings of each item on each factor are the same for all the groups. In the analysis, the factor loadings were equal across the three groups, but the intercepts were allowed to differ. Finally, full-score equivalence was tested with scalar invariance analysis. This examines whether the item intercepts and factor loadings are equal across groups, and therefore meaningful mean comparisons can be made. For this analysis, both the loadings and the intercepts were constrained to be equal. The results from the multi-group confirmatory factor analysis to assess the construct equivalence of the SUDIQ between the three ethnic groups (i.e. Blacks, Whites and Coloureds) are presented in Table 4 below.

**TABLE 4:** Fit statistics for the models

Model	$\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	RMSEA	SRMR	AIC	BIC
Configural model	2043.87	672	0.00	0.92	0.91	0.08	0.06	60419.79	61489.57
Metric model	2090.93	710	0.00	0.92	0.91	0.08	0.06	60390.85	61279.96
Scalar model	2125.47	748	0.00	0.92	0.92	0.08	0.06	60349.39	61057.83

$\chi^2$  = chi-square; *df* = degrees of freedom; *p* = statistical significance; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardised root mean square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion

These results suggest that all three the configural, metric and scalar models fitted the data with CFI and TLI values above 0.90 (Byrne, 2010; Hoyle, 1995) and RMSEA and SRMR values of 0.08 or below (Browne & Cudeck, 1993). The results also suggest that the scalar model ( $\chi^2 = 2125.47$ ; *df* = 748; *p* = 0.00; CFI = 0.92; TLI = 0.92; RMSEA = 0.08; SRMR = 0.06; AIC = 60419.79; BIC = 61489.57) is the most restrictive model with an adequate fit compared to the configural model ( $\chi^2 = 2043.87$ ; *df* = 672; *p* = 0.00; CFI = 0.92; TLI = 0.91; RMSEA = 0.08; SRMR = 0.06; AIC = 60390.85; BIC = 61279.96) and the metric model ( $\chi^2 = 2090.93$ ; *df* = 710; *p* = 0.00; CFI = 0.92; TLI = 0.91; RMSEA = 0.08; SRMR = 0.06; AIC = 60349.39; BIC = 61057.83). In addition, the  $\chi^2$  differences between the three models were compared to each other; the metric model against the configural model (*p* = 0.15; *p*  $\geq$  0.05), the scalar model against the configural model (*p* = 0.31; *p*  $\geq$  0.05) and the scalar model against the metric model (*p* = 0.63; *p*  $\geq$  0.05). Since the significances of the three models' comparisons were above *p*  $\geq$  0.05, the presence of configural, metric and scalar invariance is confirmed.



## DISCUSSION

The primary objective of this study was to assess the item bias, structural equivalence, measurement unit equivalence and scalar equivalence of the Strengths Use and Deficit Improvement Questionnaire (SUDIQ). For this purpose, the sample was divided into three groups based on the ethnicity of the participants. These groups included white participants, black participants and coloured participants.

The item bias of the SUDIQ was examined by means of differential item functioning analysis, using multiple regression analysis. More specifically, the uniform and non-uniform bias of each item was examined. The results revealed that a total of eight items were identified as uniformly biased. These items included one POSSU item ('In this organisation, people can use their talents'), two POSDI items ('In this organisation, people are required to work on their shortcomings'; 'In this organisation, development plans are aimed to better people's weaknesses'), two PBSU items ('I actively look for job tasks I am good at'; 'I organise my job to suit my strong points') and three PBDI items ('In my job, I work on my shortcomings'; 'At work, I seek training opportunities to improve my weaknesses'; 'I reflect on how I can improve the things in my job that I am not good at'). It can therefore be asserted that these mentioned uniformly biased items are an indication that one ethnic group consistently scored higher on a certain dimension (e.g. POSSU) than another group.

With regard to non-uniformly biased items, only three of the POSSU items were identified as non-uniformly biased ('This organisation uses employees' strengths'; 'This organisation provides employees with the opportunity to do what they are good at'; 'In this organisation, people can use their talents'). To illustrate these concepts in the light of the current study, the non-uniform bias indicates that the difference on scores between the ethnic groups is dependent on the level of a dimension (e.g. POSSU) experienced by each individual of each ethnic group (i.e. the bias of the items are not equal for all POSSU levels; Mellenbergh, 1982; Van de Vijver & Leung, 1997a).

Eliminating the biased items from the SUDIQ is the first step to ensure fairness in assessment across different cultural or ethnic groups (Schaap, 2011). However, the equivalence of the instrument also needs to be guaranteed to ensure that the scores of different groups obtained

on the construct are comparable across cultures (Van de Vijver & Leung, 1997b). The biased items were excluded from the subsequent equivalence analysis, and then the structural equivalence, measurement unit equivalence and scalar equivalence were assessed.

Prior to conducting the equivalence analysis, the overall factor structure of the SUDIQ was confirmed by means of a confirmatory factor analysis. It was confirmed that the SUDIQ indeed measures four distinct factors that were labelled as: perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI). Furthermore, this study found the SUDIQ to reliably measure the above-mentioned four constructs with Cronbach's alpha coefficients above 0.70 (Nunnally & Bernstein, 1994).

Next, the structural equivalence, measurement unit equivalence and full-score (scalar) equivalence of the SUDIQ were tested and confirmed. Van de Vijver and Tanzer's (2004) taxonomy of equivalence indicates that the three types of equivalence can be seen in a hierarchical order. At the lowest level is structural equivalence. In this study, it was found that the four-factor structure of the SUDIQ (consisting of POSSU, POSDI, PBSU and PBDI), with the same items loading on each of the four factors, is identical for all three ethnic groups. Secondly, the measurement unit analysis was confirmed in this study, meaning that there are no statistical differences in the factor loadings of each item on each of the factors, across the three ethnic groups. Therefore, each item represents each factor with more or less the same variance in all three ethnic groups. Finally, the highest level is scalar (full-score equivalence). In this study, it was confirmed that what is considered to be a high score on a certain dimension (i.e. POSSU, POSDI, PBSU or PBDI) in one ethnic group would also be considered a high score on that dimension in another ethnic group. The scores on the constructs can therefore be directly compared between the groups. Proving the scalar equivalence of the SUDIQ provides researchers with the much desired opportunity to make rather accurate inferences from differences in mean scores of the different groups (Van de Vijver & Tanzer, 2004).

To conclude, in this study, the items of the SUDIQ were assessed and all biased items were eliminated. It was also confirmed that the SUDIQ is equivalent across three of the main ethnic groups in South Africa. An instrument that is free from bias, and has been proven to be

equivalent across ethnic cultural groups can be used with relative confidence within a multicultural context (Van de Vijver & Tanzer, 2004). Therefore, it can be expected that, when the SUDIQ is used in future studies, the conclusions drawn from such studies are likely to be fairly accurate and would not discriminate against any ethnic group within the South African context. This study adds value to the literature since no previous measuring instrument has been developed and validated for the measurement of POSSU, POSDI, PBSU and PBDI. This study is a preliminary confirmation that the SUDIQ can be used with relative confidence in a multicultural environment, implying that research is one step closer to a measure that may provide valid and reliable results of employee strengths use and deficit improvement within the work context. This also allows future research to make more accurate conclusions regarding the antecedents and outcomes of POSSU, POSDI, PBSU and PBDI.

### **Limitations and recommendations**

A limitation of this study is that the distribution of participants across the three ethnic groups was not equal, and that a convenience sampling strategy was followed. Therefore, the results of this study cannot be generalised, and should therefore be interpreted within the context of this study. Furthermore, within the South African context, it is important to consider cultural differences within each of the ethnic groups. Since we have 11 official language groups in the country, it is suggested that future research should assess the bias and equivalence of the SUDIQ across different language groups or cultural groups, with a representative sample drawn from each group. It is important to note that this study only provides preliminary results of the bias and equivalence of the SUDIQ. It is still suggested that the cross-cultural comparability of the instrument be ensured when using the SUDIQ for academic purposes or within the organisational context. In addition, when administering the SUDIQ outside South African borders, the users of the instrument are also urged to assess the bias and equivalence of the instrument within their specific context. Furthermore, due to a lack of resources, it was not possible to assess the method bias of the SUDIQ. However, future research could also address this by ensuring that the conditions for test administration are identical for all test takers, training the test administrators, and ensuring that there are no group differences regarding the familiarity of the test content and test situation (Hofer, 2010; Van de Vijver, 2000).

## **AUTHOR'S NOTE**

The first author, Me. Crizelle Els fulfilled the role of the primary researcher, and this study formed part of her PhD research. She was responsible for the conceptualisation of the article, collecting of the data, the statistical analysis of the data, the interpretation of the research results, and the writing of the article. Prof. Karina Mostert acted as promoter to this study, and thus played an advisory role in this study and assisted in the conceptualisation of the study and the writing of the research article.

## **ACKNOWLEDGEMENTS**

The material in this article is based on work that the National Research Foundation (NRF) supported. Any opinions, findings, conclusions or recommendations in this article are those of the author(s). Therefore, the NRF does not accept any liability for them.

## REFERENCES

- Boniwell, I., Kauffman, C., & Silberman, J. (2014). The positive psychology approach to coaching. In E. Cox, T. Bachkirova, & D. A. Clutterbuck (Eds), *The complete handbook of coaching* (2nd ed. pp. 158-171), London, England: Sage Publications Ltd.
- Brown, J. (2002). Training needs assessment: A must for developing an effective training program. *Public Personnel Management*, 31(4), 569-578. doi: 10.1177/009102600203100412
- Bryman, A., Bell, E., Hirschsohn, P., Dos Santos, A., Du Toit, J., Masenge, A., Van Aardt, I., & Wagner, C. (2014). *Research methodology: Business and management contexts*. South Africa, Cape Town: Oxford University Press.
- Byrne, B. (2010). *Structural equation modeling with AMOS*. New York, NY: Routledge.
- Cameron, K. S., Dutton, J. E., & Quinn, R. E. (2003). Foundations of positive organizational scholarship. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 3-13). San Francisco: Berrett-Koehler Publishers.
- Carr, A. (2004). *Positive psychology: The science of happiness and human strengths*. East Sussex, England: Brunner-Routledge.
- Clifton, D. O., & Harter, J. K. (2003). Investing in Strengths. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 111-121). San Francisco: Berrett Koehler Publishers.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. Scott Long (Eds.), *Testing structural equation models* (pp. 1-9). Newbury Park, CA: Sage Publications.
- Davis, R. N. (1999). Web-based administration of a personality questionnaire: Comparison with traditional methods. *Behavior Research Methods, Instruments, & Computers*, 31(4), 572-577. doi: 10.3758/BF03200737
- Fisher, C. B. (2009). *Decoding the ethics code: A practical guide for psychologists* (2nd ed.). Thousands Oaks, CA: Sage.
- Fouché, C. B., & De Vos, A. S. (2012). Formal formulations. In A. S. de Vos, H. Strydom, C. B. Fouché, & C. S. L. Delpoit (Eds.). *Research at grass roots: For the social sciences and human service professions* (4th ed.). Pretoria, South Africa: Van Schaik Publishers.

- French, S. L., & Holden, T. Q. (2012). Positive organizational behavior: A buffer for bad news. *Business and Professional Communication Quarterly*, 75(2), 208-220. doi: 10.1177/1080569912441823
- García, M. Ú. (2005). Training and business performance: The Spanish case. *The International Journal of Human Resource Management*, 16(9), 1691-1710. doi: 10.1080/09585190500239341
- Government Gazette. (1998). *Republic of South Africa*, Vol. 400, no. 19370, Cape Town, 19 October 1998.
- Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review*, 2(2), 143-153.
- Hardré, P. L., Crowson, H. M., Xie, K., & Ly, C. (2006). Testing differential effects of computer-based, web-based and paper-based administration of questionnaire research instruments. *British Journal of Educational Technology*, 38(1), 5-22. doi: 10.1111/j.1467-8535.2006.00591
- He, J., & Van de Vijver, F. (2012). Bias and equivalence in cross-cultural research. *Online Readings in Psychology and Culture*, 2(2). doi: 10.9707/2307-0919.1111
- He, J., & Van de Vijver, F. J. R. (2013). Methodological issues in cross-cultural studies in educational psychology. In G. A. D. Liem, & A. B. I. Bernardo (Eds.), *Advancing cross-cultural perspectives on educational psychology: A festschrift for Dennis McInerney* (pp. 39-56). Charlotte, NC: Information Age Publishing.
- Hofer, J. (2010). Research on implicit motives across cultures. In O. C. Schultheiss, & J. C. Brunstein (Eds.), *Implicit motives* (pp. 433-466). New York, NY: Oxford University Press.
- Horn, J. L., & McArdle, J. J. (1992). A practical and theoretical guide to measurement invariance in aging research. *Experimental Aging Research*, 18(3), 117-144. doi: 10.1080/03610739208253916
- Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage.
- IBM SPSS. (2013). SPSS 22.0 [computer software]. Chicago, IL: SPSS.
- Kaiser, R. B., & Overfield, D. V. (2011). Strengths, strengths overused, and lopsided leadership. *Consulting Psychology Journal: Practice and Research*, 63(2), 89-109. doi: 10.1037/a0024470

- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria what did they really say? *Organizational Research Methods*, 9(2), 202-220. doi: 10.1177/1094428105284919
- Linley, P. A., & Harrington, S. (2006). Strengths coaching: A potential-guided approach to coaching psychology. *International Coaching Psychology Review*, 1(1), 37-46.
- Luthans, F., Youssef, C. M., & Avolio, B. J. 2007. *Psychological capital: Developing the human competitive edge*. Oxford, UK: Oxford University Press.
- Matsumoto, D., & Van de Vijver, F. J. R. (2011). *Cross-cultural research methods in psychology*. New York, NY: Cambridge University Press.
- Mellenbergh, G. J. (1982). Contingency table models for assessing item bias. *Journal of Educational and Behavioral Statistics*, 7(2), 105-118. doi: 10.3102/10769986007002105
- Muthén, L. K., & Muthén, B. O. (2014). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén,
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw-Hill.
- Pfeffer, J., & Sutton, R. I. (2006). Evidence-based management. *Harvard Business Review*, 84(1), 62-74.
- Proctor, C., Maltby, J., & Linley, P. A. (2011). Strengths use as a predictor of well-being and health-related quality of life. *Journal of Happiness Studies*, 12(1), 153-169. doi 10.1007/s10902-009-9181-2
- Quick, J. C., Cooper, C. L., Gibbs, P. C., Little, L. M., & Nelson, D. L. (2010). Positive organizational behavior at work. In G. P. Hodgkinson, & J. K. Ford. *International review of industrial and organizational psychology* (Vol. 25, pp. 253-291), West Sussex, UK: John Wiley & Sons.
- Richman, W. L., Kiesler, S., Weisband, S., & Drasgow, F. (1999). A meta-analytic study of social desirability distortion in computer-administered questionnaires, traditional questionnaires, and interviews. *Journal of Applied Psychology*, 84(5), 754-775. doi: 10.1037/0021-9010.84.5.754
- Riordan, C. M., & Vandenberg, R. J. (1994). A central question in cross-cultural research: Do employees of different cultures interpret work-related measures in an equivalent manner?. *Journal of Management*, 20(3), 643-671. doi: 10.1177/014920639402000307
- Rust, T., Diessner, R., & Reade, L. (2009). Strengths only or strengths and relative weaknesses? A preliminary study. *The Journal of Psychology: Interdisciplinary and Applied*, 143(5), 465-476. doi: 10.3200/JRL.143.5.465-476

- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Harlow, England: Pearson Education Ltd.
- Schaap, P. (2011). The differential item functioning and structural equivalence of a nonverbal cognitive ability test for five language groups. *SA Journal of Industrial Psychology*, *37*(1), 01-16. doi: 10.4102/sajip.v37i1.881
- Schmidt, S. W. (2007). The relationship between satisfaction with workplace training and overall job satisfaction. *Human Resource Development Quarterly*, *18*(4), 481-498. doi: 10.1002/hrdq.1216
- Schmitt, N., & Kuljanin, G. (2008). Measurement invariance: Review of practice and implications. *Human Resource Management Review*, *18*(4), 210-222. doi: 10.1016/j.hrmr.2008.03.003.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*(1), 5-14. doi: 10.1037//0003-066X.55.1.5
- Sirmon, D. G., Hitt, M. A., Arregle, J. L., & Campbell, J. T. (2010). The dynamic interplay of capability strengths and weaknesses: Investigating the bases of temporary competitive advantage. *Strategic Management Journal*, *31*(13), 1386-1409. doi: 10.1002/smj.893
- Slade, M. (2010). Mental illness and well-being: The central importance of positive psychology and recovery approaches. *BMC Health Services Research*, *10*(1), 1-14. doi:10.1186/1472-6963-10-26
- Steenkamp, J. B. E., & Baumgartner, H. (1998). Assessing measurement invariance in cross-national consumer research. *Journal of Consumer Research*, *25*(1), 78-107. doi: 10.1086/209528
- Tayeb, M. (1994). Organizations and national culture: Methodology considered. *Organization Studies*, *15*(3), 429-445. doi: 10.1177/017084069401500306
- Tweed, R. G., Bhatt, G., Dooley, S., Spindler, A., Douglas, K. S., & Viljoen, J. L. (2011). Youth violence and positive psychology: Research potential through integration. *Canadian Psychology/Psychologie Canadienne*, *52*(2), 111-121. doi: 10.1037/a0020695
- Van de Vijver, F. J. (2011). Capturing bias in structural equation modeling. In E. Davidov, P. Schmidt, & J. Billiet (Eds.), *Cross-cultural analysis: Methods and applications* (pp. 3-34). New York, NY: Routledge.
- Van de Vijver, F. J. R. (2000). The nature of bias. In R. H. Dana (Ed.), *Handbook of cross-cultural and multicultural personality assessment* (pp. 87-106). Mahwah, NJ: Lawrence Erlbaum.



- Van de Vijver, F. J. R., & Leung, K. (1997a). Methods and data analysis of comparative research. In J. Berry, Y. H. Poortinga, & J. Pandey (Eds.), *Handbook of cross-cultural psychology* (2nd ed., pp. 257-300). Boston: Allyn & Bacon.
- Van de Vijver, F. J. R., & Leung, K. (1997b). *Methods and data analysis for cross-cultural research*. Newbury Park, CA: Sage.
- Van de Vijver, F. J. R., & Leung, K. (2011). Equivalence and bias: A review of concepts, models, and data analytic procedures. In D. Matsumoto, & F. J. R. van de Vijver, *Cross-cultural research methods in psychology* (pp. 17-45). New York, NY: Cambridge University Press.
- Van de Vijver, F. J., & Poortinga, Y. H. (1997). Towards an integrated analysis of bias in cross-cultural assessment. *European Journal of Psychological Assessment, 13*(1), 29-37. doi: 10.1027/1015-5759.13.1.29
- Van de Vijver, F., & Tanzer, N. K. (2004). Bias and equivalence in cross-cultural assessment: An overview. *Revue Européenne de Psychologie Appliquée/European Review of Applied Psychology, 54*(2), 119-135. doi: 10.9707/2307-0919.1111
- Van Herk, H., Poortinga, Y. H., & Verhallen, T. M. (2005). Equivalence of survey data: Relevance for international marketing. *European Journal of Marketing, 39*(3/4), 351-364. doi: 10.1108/03090560510581818
- Vandenberg, R. J. (2002). Toward a further understanding of and improvement in measurement invariance methods and procedures. *Organizational Research Methods, 5*(2), 139-158. doi: 10.1177/1094428102005002001
- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*(1), 4-70. doi: 10.1177/109442810031002
- Wood, A. M., & Tarrier, N. (2010). Positive clinical psychology: A new vision and strategy for integrated research and practice. *Clinical Psychology Review, 30*(7), 819-829. doi: 10.1016/j.cpr.2010.06.003
- Wood, B. (2005). Towards innovative building maintenance. *Structural Survey, 23*(4), 291-297. doi: 10.1108/02630800510630466

## **CHAPTER 4**

### **RESEARCH ARTICLE 3**

# **STRENGTHS USE, DEFICIT IMPROVEMENT OR A FOCUS ON BOTH FOR OPTIMAL ORGANISATIONAL OUTCOMES: A SOUTH AFRICAN STUDY**

## **ABSTRACT**

**Orientation:** The positive psychology paradigm suggests a balanced focus on employee strengths and their deficits. However, an overemphasis on strengths in recent research has raised questions regarding the value of a focus on strengths use, deficit improvement or a combined approach with a balanced focus on both.

**Research purpose:** The primary objective of this study was to examine whether strengths use, or deficit improvement or a combined approach will be the strongest predictor of work engagement, learning, job satisfaction and turnover intention.

**Motivation for the study:** In the literature, there is little empirical evidence to support an approach where both employees' strengths are used and their deficits are improved.

**Research design, approach and method:** This study was conducted among 266 teachers from four public schools in the Western Cape. A cross-sectional survey design was followed.

**Main findings:** The results suggest that both strengths use and deficit improvement are important predictors of work engagement, learning, job satisfaction and turnover intention. Learning was higher and turnover intention lower for individuals experiencing a combined approach compared to those believing that their school does not support them to either use their strengths or improve their deficits. Furthermore, a combined approach was associated with higher job satisfaction than a strengths-based approach, and a deficit-based approach was shown to be associated with higher levels of work engagement and turnover intentions compared to an environment where neither employees' strengths nor deficits are addressed.

**Practical/managerial implications:** The results from this study urge organisations to invest an equal amount of resources in their employees' strengths and their deficits, as opposed to neglecting either one. Such a combined approach may be associated with increased work engagement, learning and job satisfaction and lower turnover intention.

**Contribution:** This study adds to the positive psychology body of knowledge in that it provides empirical evidence that supports a combined approach where both employees' strengths are used and their deficits are developed.

**Keywords:** Perceived organisational support for strengths use; perceived organisational support for deficit improvement; work engagement; learning; job satisfaction; turnover intention

## INTRODUCTION

In the past, organisations mainly followed a deficit-based approach where they attempted to address employees' weaknesses (Carr, 2011; Slade, 2010; Wood & Tarrier, 2010). The benefits of identifying and developing employee weaknesses may produce positive results for both the individual and the organisation (Blanchard & Thacker 2007). Improving employee skills and knowledge may assist the organisation in achieving its goals and objectives, and improving organisational effectiveness (Brown, 2002; García, 2005). Furthermore, when employers invest in the personal development of their employees, these employees are likely to experience higher levels of job satisfaction (Schmidt, 2007), higher organisational commitment (Bartlett, 2001), lower turnover intentions (Pfeffer & Sutton, 2006), increased motivation and a willingness to devote discretionary effort (Dysvik & Kuvaas, 2010), higher levels of work engagement (Bakker & Geurts, 2004), and feeling more valued by the organisation (Santos & Stuart, 2003).

Besides deficits, employees also have strengths, aspects of the job a person is good at, that may affect their work. The positive psychology movement has drawn the attention to a past imbalance in attention to employee deficits as opposed to also focusing on their strengths. Positive psychology aims at also recognising the positive aspects of human life, including employee strengths, as opposed to an exclusive focus on deficits (Seligman, 2002; Seligman & Csikszentmihalyi, 2000). More specifically, the positive organisational scholarship movement has emerged in reaction to positive psychology, in an attempt to specifically investigate positive outcomes, processes, and attributes of organisations and their members (Cameron, Dutton & Quinn, 2003). In the past few years, the possibility of a strengths-focused psychology in the workplace has emerged. Specifically of interest in the positive organisational scholarship tradition is how employees' strengths may be applied for optimal outcomes for both the individual and the organisation (Cameron et al., 2003; Clifton & Harter, 2003).

It is not surprising that individuals can greatly benefit from using their strengths, since these are the things an individual is naturally good at (Buckingham & Clifton, 2001). Previous research has connected strengths use with increased self-esteem (Minhas, 2010), higher self-efficacy (Falender & Shafranske, 2004), increased happiness and vitality (Govindji & Linley, 2007), subjective well-being (Proctor, Maltby & Linley, 2011), lower levels of stress (Minhas, 2010), increased work engagement (Clifton & Harter, 2003; Linley & Harrington, 2006), goal attainment (Linley, Nielsen, Gillett & Biswas-Diener, 2010), increased in-role and out-role performance (Van Woerkom & Meyers, 2015) and higher levels of personal growth initiative (Meyers, Van Woerkom, De Reuver, Bakk & Oberski, 2015).

In recent years, however, many scholars claim that the positive psychology movement has again created an imbalance by almost exclusively focusing on employee strengths while failing to pay an equal amount of attention to employee deficits (Rust, Diessner & Reade, 2009; Sirmon, Hitt, Arregle & Campbell, 2010). The positive outcomes of strengths use and deficit improvement provides a convincing argument why organisations should focus on both these approaches, as opposed to an exclusive focus on either employees' strengths (as is found in recent positive organisational literature) or their deficits (as was found in previous literature). For optimal performance and a positive work experience, some researchers suggest that employees should focus on using their strengths and improving their deficits (Kaiser & Overfield, 2011). This also holds true in organisational literature since both strengths use and deficit improvement may yield optimal results for both the individual and the organisation, as discussed earlier. Previous research, however, has not empirically investigated whether a focus on strengths use versus a focus on deficit improvement is more beneficial to the organisation. Furthermore, it has not been examined whether a combined approach focusing on both strengths use and deficit improvement, as opposed to an exclusive focus on either one of these two, may be even more advantageous to the organisation.

Since time and resources will be expended when focusing on both strengths use and deficit improvement of employees, it is essential that the benefits of such a combined approach be explored through empirical research. Therefore, this study aims to address this gap by investigating the role of strengths use and deficit improvement in predicting organisational outcomes. The organisational outcomes relevant to this study include work engagement, learning, job satisfaction and turnover intention. All these organisational outcomes have been proven to affect the bottom-line of the organisation and are therefore important constructs for

organisational and individual performance (Bakker & Bal, 2010; Cropanzano, Rupp & Byrne, 2003; Judge, Thoresen, Bono & Patton, 2001; Porath, Spreitzer, Gibson & Garnett, 2012).

This study was positioned within the education sector in South Africa. The turnover rate of South African teachers is extremely high because of, amongst other factors, high job stress, teacher burnout, low job satisfaction, poor learner discipline (Jackson, Rothmann & Van de Vijver, 2006; Kabungaidze, Mahlatshana & Ngirande, 2013; Ngidi & Sibaya, 2002; Olivier & Venter, 2003). Research is continually directed at identifying possible factors that may enhance the work environment of teachers in an attempt to retain them. Previous studies have not examined the role that strengths use and deficit improvement play in the teaching profession in South Africa. Therefore, it is unclear whether strengths use, deficit improvement, or a combined approach would lead to higher work engagement, learning and job satisfaction and to lower turnover intentions for teachers in South Africa.

The primary objective of this study was to examine whether strengths use or deficit improvement or a combined approach will be the strongest predictor of work engagement, learning, job satisfaction and turnover intention.

Below a review of the literature is presented where the constructs used in this article will be clarified and contextualised, and the expected relationships will be discussed.

## **LITERATURE REVIEW**

### **Deficit and strengths**

Deficits within the work context refer to the aspects of a job that individuals are not good at, i.e. a lack of the necessary knowledge and/or skills that inhibits job performance (Aguinis, Gottfredson & Joo, 2012) and need to be improved or developed. Within an organisational context, the process of performance feedback is mostly used as a tool to identify and address employee deficits, and to formulate a development plan aimed at remediating these weaknesses (Aguinis et al., 2012; Buckingham & Clifton, 2001; Mathis & Jackson, 2005; Noe, Wilk, Mullen & Wanek, 2014; Rath, 2007).

On the other hand, strengths are a combination of talents, knowledge and skills individuals excel in, that come naturally to them and that assist in goal attainment (Linley & Harrington, 2006; Lopez, Hodges & Harter, 2005). In a review of the strengths literature, Smith (2006) has identified particular characteristics of strengths. Strengths are facilitating factors to cope with life's difficulties and assist an individual to experience a more fulfilling life. Strengths are also context specific in the sense that particular contexts may hinder or amplify a particular strength. Furthermore, strengths are not fixed traits, but can rather be developed from a dynamic, contextual process (Peterson & Seligman, 2004; Smith, 2006).

### **Perceived organisational support for deficit improvement (POSDI) and perceived organisational support for strengths use (POSSU)**

As previously mentioned, both the improvement of employee deficits and optimal use of their strengths may result in positive organisational outcomes. Els et al. (article 1 of this thesis) argue that employees' deficits can only be optimally improved and their strengths applied if the organisation provides a platform for this. That is, employees depend to a large extent on the organisation's support for them to develop their weaknesses and to improve their strengths. Therefore, if organisations do not create an environment where employees are allowed to use their strengths and provided opportunities to improve their deficits, they are less likely to do so. Consequently, Els et al. (article 1 of this thesis) have created the concepts of perceived organisational support for deficit improvement (POSDI) and perceived organisational support for strengths use (POSSU).

POSDI is defined as the extent to which employees perceive the organisation to be supportive of them improving their deficits. POSSU can be described as the extent to which an organisation encourages its employees to use their strengths. Els et al. (article 1 of this thesis) contextualised these constructs as job resources. This conceptualisation follows the definition and nature of job resources. More specifically, job resources are those aspects in the work environment that are instrumental in achieving organisational and personal work goals, and that may stimulate employees' growth, learning, and development (Bakker & Demerouti, 2007). Research has shown that strengths use is associated with goal attainment, performance and personal growth (Clifton & Harter, 2003; Govindji & Linley, 2007; Linley 2008; Linley et al., 2010) Similarly, POSDI can also be seen as a job resource since employee

development as part of the organisation's human resource strategy also contributes to the attainment of goals and increases individual growth through learning (Harrison, 1992).

Following the conceptualisation of POSSU and POSDI as job resources, these two concepts may be associated with the positive outcomes that characterise job resources. However, as these two concepts are new, it has largely been unexplored in empirical studies. Therefore, the organisational outcomes related to POSSU and POSDI have not been investigated. The most common theoretical framework used to understand the functioning of job resources in an organisational context is the Job Demands-Resources (JD-R) model. This model postulates that employees deal with positive aspects of the job (i.e. job resources) and hindering factors (referred to as job demands). It has been established that an excess of job demands often results in negative organisational outcomes such as burnout (Bakker & Demerouti, 2007), presenteeism (Demerouti, Le Blanc, Bakker, Schaufeli & Hox, 2009), low work engagement (Mauno, Kinnunen & Ruokolainen, 2007), and low job satisfaction and high turnover intentions (Spector, et al., 2007). On the other hand, job resources are correlated with positive organisational outcomes, including work engagement (Bakker & Demerouti, 2007), learning opportunities and lower psychological fatigue (Van Ruysseveldt, Proost & Verboon, 2011), and self-efficacy and self-esteem (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009).

### **Organisational outcomes of POSSU and POSDI**

Following the above discussion, it is reasonable to expect that POSDI and POSSU, as job resources, may also be related to positive organisational constructs. In addition, we may explore whether an exclusive focus on POSDI or an exclusive focus on POSSU are the strongest predictors of organisational outcomes (such as work engagement, learning, job satisfaction and turnover intention). These two job resources, however, may also have a combined effect on organisational outcomes. In such a holistic view where an emphasis is placed on both strengths use and deficit improvement the saying by Aristotle "the whole is greater than the sum of its parts" applies. It is reasonable to expect that when employees perceive their organisation as supportive of them to both use their strengths and improve their deficits, they are more likely to experience higher levels of work engagement, learning, job satisfaction and lower turnover intentions, when compared to the exclusive focus on either strengths use (where employees may still feel the need to have their deficits developed), or an



exclusive focus on deficit improvement (where employees may desire to apply their strengths in their jobs).

To illustrate the above, it can be argued that focusing on the development of one's weaknesses may be both a challenging and fulfilling task for an individual (Tannenbaum, Mathieu, Salas & Cannon-Bowers, 1991). However, attending to one's development and learning may not only result in positive outcomes, but may at the same time be demanding, require effort and energy from the employee, and may leave them frustrated and anxious (Sonnentag, Niessen & Ohly, 2004). In addition, improving one's deficits at work may lead to increased performance, but not necessarily excellent performance. The latter negative side-effects of deficit improvement may very well be lessened when employees also experience a focus on their strengths at work. The supposition here is that the opportunity to use their strengths at work may energise employees, create a sense of accomplishment, and reduce stress (Govindji & Linley, 2007; Linley et al., 2010; Minhas, 2010), combating the energy expenditure and possible frustrations caused by developing their deficits.

### ***Work engagement***

Work engagement is a well-known concept in the organisational and positive psychology literature, and is described as a positive, fulfilling work-related state that can be characterised by vigour, dedication, and absorption (Schaufeli, Salanova, González-Romá & Bakker, 2002; Schaufeli & Bakker, 2004). Vigour is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties (Schaufeli et al., 2002). Dedication refers to being strongly involved in one's work and experiencing a sense of significance, enthusiasm, and challenge (Schaufeli et al., 2002). Absorption is characterised by fully focusing on and being gladly engrossed in one's work, including the experience that time passes quickly and that one finds it difficult to detach oneself from work (Schaufeli & Bakker, 2004). Recent studies suggest that vigour and dedication are the core dimensions of work engagement (Llorens, Schaufeli, Bakker & Salanova, 2007; Schaufeli & Bakker, 2004; Van Wijhe, Peeters, Schaufeli & Van den Hout, 2011) and that absorption is considered to play a less central role in engagement (González-Romá, Schaufeli, Bakker & Lloret, 2006). This has also been confirmed within the South African context (Jackson et al., 2006; Rothmann & Pieterse, 2007).

Work engagement is often explored by relying on the theoretical arguments of the JD-R model. According to JD-R theory, job resources are the strongest drivers for work engagement. More specifically, aspects of the job such as autonomy, supervisory relationships, opportunities for growth and colleague support greatly influence an employee's levels of work engagement (Bakker, 2011; Bakker & Bal, 2010). This argument is built on the hypothesis that job resources influence work engagement due to the motivational nature of these resources. It is believed that job resources may play an intrinsic motivational role since they foster growth and learning, or they can play an extrinsic motivational role since they are instrumental in achieving work goals (Bakker & Demerouti, 2007). Therefore, job resources have a motivational potential and are associated with increased work engagement (Bakker & Bal, 2010; Schaufeli & Bakker, 2010).

Following the above argument, it is also expected that the two job resources, POSSU and POSDI may lead to increased work engagement. When employees apply their strengths at work they tend to feel more energised, and are consequently more vigorous (Biswas-Diener, 2010), and may derive more enjoyment from their work (which is associated with dedication), since they can do what comes naturally to them. Similarly, previous research has confirmed that the fostering of growth and learning is associated with higher work engagement (Bakker, 2011; Bakker, Demerouti & Schaufeli, 2003; Mauno, Kinnunen, Mäkikangas & Feldt, 2010; Schaufeli, Bakker & Van Rhenen, 2009). It can therefore be expected that the growth and learning as a result of deficit improvement may yield similar results. Therefore, it is reasonable to expect POSSU and POSDI to increase the work engagement levels of employees. Furthermore, as previously argued, it is expected that a combined approach of both POSSU and POSDI may be associated with higher work engagement than an exclusive focus on either POSSU or POSDI.

H1a: There is a positive relationship between POSSU and work engagement

H1b: There is a positive relationship between POSDI and work engagement

H1c: In organisations where a combined approach (focusing on both POSSU and POSDI) is followed, employees will have higher levels of work engagement compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follow a deficit-based approach (exclusive focus on deficits)

### *Thriving (learning)*

Thriving is a construct in positive psychology described as the opposite of languishing and refers to a sense of vitality and learning at work. Within this context, vitality refers to feeling energetic and alive and having a zest at work. Learning is described as the acquiring and application of knowledge and skills (Spreitzer, Sutcliffe, Dutton, Sonenshein & Grant, 2005). Thriving employees can be described as those employees who deliver results and find ways to grow (Spreitzer & Porath, 2012). Ryan and Deci (2011) argue that when an individual's need for competence is satisfied (for example through using strengths and improving deficits), he/she will most likely experience a sense of thriving. The vitality dimension of thriving corresponds to a large degree with the vitality dimension of work engagement, which will also be investigated in this paper. Therefore, only the learning dimension of thriving will be further explored.

As mentioned before, the learning component of thriving refers to the acquiring and application of knowledge and skills. One can then argue that improving one's deficits at work is directly related to the acquiring of new skills through, for example training opportunities. Furthermore, using one's strengths is directly related to the application of one's knowledge. Therefore, it is expected that both POSSDI and POSSU may lead to higher levels of learning. In addition, as previously mentioned, it is also hypothesised that a combined approach focusing on both POSSU and POSSDI may be a stronger predictor of POSSDI or POSSDI exclusively.

H2a: There is a positive relationship between POSSDI and learning

H2b: There is a positive relationship between POSSU and learning

H2c: In organisations where a combined approach (focusing on both POSSU and POSSDI) is followed, employees will have higher levels of learning compared to organisations where there is a lack of POSSU and a lack of POSSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follow a deficit-based approach (exclusive focus on deficits).

### ***Job satisfaction and turnover intention***

The extent to which employees feel that their organisation provides them with the desired support to use their strengths and improve their deficits at work may influence employees' attitude about their work. When organisations are committed to employee development, employees may feel that they are important to the organisation and may leave them feeling more optimistic about the future (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007), which may increase their satisfaction with their job, and reduce their risk of leaving the organisation. Similarly, when employees feel that their work is designed in such a manner that they can do what they are good at, they may feel more optimistic about their job, find their work more meaningful, and may derive more pleasure from their daily activities (Harzer & Ruch, 2013; Littman-Ovadia & Steger, 2010). This, in turn, may influence their satisfaction with their work environment, and may reduce the risk of leaving the organisation. Furthermore, using their strengths at work and mastering new skills may foster a sense of competence and self-efficacy, leaving employees feeling that they have control over their own performance and that they can positively influence their workplace (Bell & Kozlowski, 2008; Peterson & Seligman, 2004). These positive attitudes about their work may lead to higher levels of job satisfaction and turnover intention. In addition, when an employee performs a task well (i.e. performing a task that he is talented in), he is likely to receive more positive feedback regarding his work (Adeniji, 2011; Deci, Koestner, & Ryan, 1999). This may, in turn, increase his positivity towards his job. Based on the above discussion, it is proposed that POSSU and POSDI can lead to increased job satisfaction and lower turnover intentions.

Furthermore, as argued earlier, it is expected that a combined approach that includes both POSSU and POSDI will lead to higher job satisfaction and lower turnover intention, compared to an exclusive focus on either POSSU or POSDI.

H3a: There is a positive relationship between POSSU and job satisfaction

H3b: There is a positive relationship between POSDI and job satisfaction

H4a: There is a negative relationship between POSSU and turnover intention

H4b: There is a negative relationship between POSDI and turnover intention

- H5a: In organisations where a combined approach (focusing on both POSSU and POSDI) is followed, employees will have higher levels of job satisfaction compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follow a deficit-based approach (exclusive focus on deficits).
- H5b: In organisations where a combined approach (focusing on both POSSU and POSDI) is followed, employees will have lower levels of turnover intention compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follow a deficit-based approach (exclusive focus on deficits).

## **RESEARCH DESIGN**

### **The research approach**

This study followed a quantitative research design and cross-sectional data was collected by means of surveys. Therefore, data was collected at one particular point in time (Trochim & Donnelly, 2007). The study is descriptive and exploratory in nature. The purpose of exploratory research is to gain a better understanding of a phenomenon, whereas descriptive research aims to describe a situation by providing measures of an event or activity (Hair, Celsi, Money, Samouel & Page, 2003)

### **Research participants and procedure**

The study population consisted of a convenient sample of teachers from public Afrikaans schools in the Western Cape ( $N = 266$ ). This sample was chosen based on convenience and accessibility to the researcher. The characteristics of the participants are presented in Table 1.

**TABLE 1:** Characteristics of participants ( $N = 266$ )

<b>Item</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>	Male	87	32.10
	Female	175	64.60
<b>Ethnicity</b>	Indian	5	1.80
	Black	5	1.80
	Coloured*	165	60.90
	White	96	35.40
<b>Home language</b>	Afrikaans	256	94.50
	English	10	3.70
	Other	5	1.80
<b>Age</b>	16-20 years	2	0.80
	21-30 years	30	11.30
	31-40 years	19	7.10
	41-50 years	81	30.50
	51-60 years	99	37.20
	60-69 years	24	9.00
<b>Highest qualification</b>	Grade 10	5	1.80
	Grade 11	0	0
	Grade 12	23	8.50
	Technical College Diploma	58	21.40
	Technicon Diploma	29	10.70
	University Degree	94	34.70
	Post-graduate Degree	37	13.70
<b>Organisation tenure</b>	0-5 years	91	34.20
	6-10 years	35	13.20
	11-20 years	51	19.20
	21-30 years	52	19.50
	31-40 years	24	9.00
	41-50 years	3	1.10

\* This is an official term in South Africa used to describe citizens of mixed ethnic origin

The sample consisted of 64.6% females and 32.1 % males. The majority of the teachers were Afrikaans speaking (94.50%), followed by English (3.7%) and other languages (1.8%). Most of the teachers were coloured (60.90%) and white (35.40%). The mean age of the sample was 48.28 years, with the majority of the teachers being between the ages of 41 and 60 years (67.70%). Only 1.80% of the sample did not hold a senior certificate, 34.70% held a university degree and 13.70% a post-graduate degree. A total of 34.20% of the participants have been with their current school for less than five years, 13.20% had tenure of six to ten years, 19.20% had tenure of 11 to 20 years, 19.50% have been with their current school between 21 and 30 years and 10.10% of the population have been with their school for more than 30 years.

Written permission was obtained from the Western Cape Department of Education to study a sample of teachers in the Western Cape. Thereafter, the school principals of four schools were contacted to gain access to the teachers in these schools. The surveys were then distributed by hand to those teachers who were available at their respective workplaces at the given time of questionnaire distribution. The participants were allowed to complete the questionnaires at a time and place convenient to them and the teachers were requested to deposit their completed questionnaires in a sealed box provided. A response rate of 54.20% was obtained. The data was collected in the months of October and November at the end of the South African academic year. This is a very busy time in teachers' schedules, which may have influenced the response rate.

### **Measuring instruments**

A *biographical questionnaire* was used to obtain personal information from the participants including their gender, ethnicity, language and educational level.

The newly developed *Strengths Use and Deficit Improvement Questionnaire* (SUDIQ) by Els et al. (article 1 of this thesis) was used to measure perceived organisational support for strengths use (POSSU) and perceived organisational support for deficit improvement (POSDI). All biased items identified by Els et al. (article 2 of this thesis) were excluded from the questionnaire. These constructs were measured on a seven-point Likert-type scale ranging from 0 (never) to 6 (almost always). POSSU was measured with five items (e.g. "This organisation ensures that people can apply their strong points in their jobs";  $\alpha = 0.96$ ). POSDI was also measured with five items (e.g. "In this organisation employees receive training to improve their weak points";  $\alpha = 0.93$ ; Els et al., article 1 of this thesis).

The *Utrecht Work Engagement Scale* (UWES) was used to measure the two core dimensions of work engagement, namely vigour and dedication (see Llorens et al., 2007; Schaufeli & Bakker, 2004). Vigour was measured with six items (e.g. "At my work, I feel I am bursting with energy") and dedication with five items (e.g. "I am enthusiastic about my job"). All items were measured on a seven-point frequency-rating scale, varying from 0 (never) to 6 (every day). The Cronbach's alpha coefficients range between 0.75 and 0.86 (Schaufeli et al.,

2002). A study by Storm and Rothmann (2003) has confirmed the reliability for use of the UWES within the South African context with Cronbach's alpha coefficients for vigour ( $\alpha = 0.78$ ) and dedication ( $\alpha = 0.89$ ).

Learning, as a dimension of thriving was measured with the *Thriving at Work Scale* developed by Porath et al. (2012). This questionnaire measures learning with five items (e.g. "I continue to learn more and more as time goes by") and on a scale from 0 (strongly disagree) to 6 (strongly agree). The internal consistency of the instrument was confirmed in previous studies with Cronbach's alpha coefficients ranging from 0.88 to 0.93 (Paterson, Luthans & Jeung, 2014; Porath, et al., 2012).

The *Job Satisfaction Scale*, developed by Hellgren, Sjöberg and Sverke (1997) (based on Brayfield & Rothe, 1951), was used to examine job satisfaction. This instrument consists of three items on a Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). An example item includes "I am satisfied with my job". The reliability of this instrument has been confirmed in South Africa ( $\alpha = 0.75$ ; Masia & Pienaar, 2011).

*Turnover intention* was measured with a scale developed by Sjöberg and Sverke (2000). The items are measured on a five-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). A total of three items were included in this instrument (e.g. "I am actively looking for other jobs"). This scale has been proven to be reliable within the South African context with Cronbach's alpha coefficients ranging between 0.74 (Pienaar, Sieberhagen & Mostert, 2007) and 0.79 (Diedericks & Rothmann, 2014).

### **Statistical analysis**

The data was analysed by means of the SPSS program (IBM SPSS, 2013) and Mplus 7.2 (Muthén & Muthén, 2014). The descriptive statistics (means and standard deviations of the scales) were calculated and the reliability of the instruments was assessed with Cronbach's alpha coefficients, with values larger than 0.70 indicating satisfactory internal consistency (Nunnally & Bernstein, 1994). Relationships between the variables were examined with Pearson correlations and cut-off points of 0.30 (medium effect) and 0.50 (large effect) were set for the practical significance of coefficients (Cohen, 1988). The confidence interval level for statistical significance was set at a value of 95% ( $p \leq 0.05$ ).



Structural equation modelling (SEM) was used to assess the relationships between the variables. The goodness-of-fit of the models was tested using the traditional  $\chi^2$  statistic, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardised root mean square residual (SRMR). Although there is no consensus regarding the cut-off values for adequate fit (Lance, Butts & Michels, 2006), general guidelines were followed and fit was considered adequate if CFI and TLI values were larger than 0.90 (Byrne, 2010; Hoyle, 1995). An RMSEA value of 0.05 or less indicates a good fit, while values between 0.05 and 0.08 represent a moderately good model fit (Browne & Cudeck, 1993; Van de Schoot, Lugtig & Hox, 2012). According to Hu and Bentler (1999), the SRMR value should be smaller than 0.05. The Akaike information criterion (AIC) and sample adjusted Bayesian information criterion (BIC) were used to compare the fit of competing models, where the model with the lowest value suggest superior fit (Van de Schoot et al., 2012).

One-way multivariate analysis of variance (MANOVA) was used to assess whether differences exist in the work engagement, learning, job satisfaction and turnover intention between different groups (representing different levels of POSSU and POSDI). The Wilk's Lambda statistic was used as an indicator of the significance of group differences (Mayers, 2013). Subsequent analysis of variance (ANOVA) was then conducted to examine the differences for each outcome variable. In the case where significant differences were found, the Games-Howell post hoc test was used to examine the nature of these differences.

## RESULTS

### *The measurement model*

Confirmatory factor analysis (CFA) was conducted to examine the fit of the measurement model. Firstly, CFA was conducted on all the multi-dimensional constructs (i.e. the SUDIQ and engagement) to determine the optimal factor structures for these constructs. The results showed the following:

- A two-factor structure for the SUDIQ, consisting of POSSU and POSDI ( $\chi^2 = 146.16$ ;  $df = 34$ ;  $p = 0.00$ ; CFI = 0.95; TLI = 0.93; SRMR = 0.03; AIC = 7064.37; BIC =

7175.46) fitted the data significantly better compared to a one-factor model ( $\chi^2 = 803.41$ ;  $df = 35$ ;  $p = 0.00$ ; CFI = 0.66; TLI = 0.56; SRMR = 0.15; AIC = 7719.62; BIC = 7827.13;  $\Delta\chi^2 = 657.25$ ;  $\Delta df = 1$ ;  $p = 0.00$ ).

- The analysis with engagement as a two-factor model showed no convergence. This typically occurs when the model that is being estimated is not appropriate for the data (Muthén & Muthén, 2014). Therefore, this model could not be assessed successfully. A one-factor model was then tested, with all the vigour and dedication items loading on a single factor. The results indicated a good fit with the data ( $\chi^2 = 223.73$ ;  $df = 44$ ;  $p = 0.00$ ; CFI = 0.90; TLI = 0.87; SRMR = 0.05; AIC = 7450.30; BIC = 7568.43).

The overall measurement model where all the variables in this study were included, showed an acceptable fit to the data ( $\chi^2 = 1177.00$ ;  $df = 572$ ;  $p = 0.00$ ; CFI = 0.91; TLI = 0.90; RMSEA = 0.06; SRMR = 0.05; AIC = 24007.33; BIC = 24473.18).

### *Relationships between the variables*

The correlations between the study variables are presented in Table 2. The means<sup>1</sup> and standard deviations of the scales are also presented.

**TABLE 2:** Correlation matrix ( $r$ ) of the latent variables

Variable	Mean	SD	1	2	3	4	5	6
1. POSSU	4.55	1.08	(0.93)	-	-	-	-	-
2. POSDI	3.93	1.36	0.54	(0.92)	-	-	-	-
3. Engagement	5.00	0.88	0.38	0.40	(0.92)	-	-	-
4. Learning	4.32	0.64	0.20	0.25	0.44	(0.72)	-	-
5. Job satisfaction	4.20	0.75	0.33	0.41	0.55	0.21	(0.90)	-
6. Turnover	2.22	1.03	-0.28	-0.26	-0.41	-0.19	-0.58	(0.83)

Mean = scale means; SD = standard deviation; All correlations are significant at the 0.01 level ( $p \leq 0.01$ );  $r \geq 0.30$  is practically significant (medium effect);  $r \geq 0.50$  is practically significant (large effect). Cronbach's alpha coefficients ( $\alpha$ ) are presented on the diagonal in brackets.

The correlations between all the variables were statistically significant. More specifically, POSSU was positively correlated with POSDI (practically significant; large effect), work engagement, and job satisfaction (practically significant; medium effects), as well as learning and negatively correlated with turnover intention. Positive correlations were found between

<sup>1</sup> Please note that these are the means for the scales, and not the latent variables. In Mplus, the means for latent variables in cross-sectional models are set to standardised zero. According to Muthén (2010), one cannot compare the means of latent variables to other factor means because there is no basis for comparison (as would be the case in multi-group analysis).

POSDI, and work engagement (practically significant; medium effect), learning and job satisfaction (practically significant; medium effect), as well as negatively correlated with turnover intention. Work engagement was positively related to learning (practically significant; medium effect) and job satisfaction (practically significant; large effect), and negatively related to turnover intention (practically significant; medium effect). Positive correlations were found between learning and job satisfaction, and a negative correlation between learning and turnover intention. Finally, a negative practically significant correlation with a large effect was found between job satisfaction and turnover intention. All the scales showed a good internal consistency ( $\alpha \geq 0.70$ ; Nunnally & Bernstein, 1994).

### ***Structural equation modelling***

Separate structural models were tested for each of the outcome variables (work engagement, learning, job satisfaction and turnover intention). In all models, both POSSU and POSDI were included, but three competing models were tested for each outcome variable:

- 1) In model A, the unique contribution of POSSU to the outcome variable was assessed. The path from POSDI to the outcome variable was therefore constrained to zero.
- 2) In model B, the unique contribution of POSDI to the outcome variable was assessed. The path from POSSU to the outcome variable was therefore constrained to zero.
- 3) In the final model, the combined focus of both POSSU and POSDI was tested. Paths from both POSSU and POSDI were therefore specified to the outcome variable (i.e. none of the paths in this model were constraint). In addition, a covariance between POSSU and POSDI was included in the model as an indication of the relationship between POSSU and POSDI (Kline, 2011).

The model fit indices and structural paths for each of the outcome variables are presented in Table 3 below. The results of the structural models tested for all the outcome variables are presented in Table 3. These results can be summarised as follows:

- ***Work engagement:*** The results indicate that for work engagement, model C was a significantly better model compared to model A ( $\Delta\chi^2 = 113.69$ ;  $\Delta df = 2$ ;  $p = 0.00$ ) and model B ( $\Delta\chi^2 = 99.16$ ;  $\Delta df = 2$ ;  $p = 0.00$ ). In model C, both POSSU ( $\beta = 0.18$ ;  $p \leq 0.01$ ) and POSDI ( $\beta = 0.35$ ;  $p \leq 0.01$ ) were significant predictors of work engagement, with POSDI being the strongest predictor.

- **Learning:** The results for learning indicate that model C showed a significantly better fit to the data than model A ( $\Delta\chi^2 = 103.82$ ;  $\Delta df = 2$ ;  $p = 0.00$ ) and model B ( $\Delta\chi^2 = 95.07$ ;  $\Delta df = 2$ ;  $p = 0.00$ ). The results of model C suggest that POSSU was not a significant predictor of learning in the presence of POSDI. POSDI, however, significantly predicted learning ( $\beta = 0.29$ ;  $p \leq 0.01$ ).
- **Job satisfaction:** The results for job satisfaction indicate that model C fitted the data significantly better than model A ( $\Delta\chi^2 = 112.64$ ;  $\Delta df = 2$ ;  $p = 0.00$ ) and model B ( $\Delta\chi^2 = 95.73$ ;  $\Delta df = 2$ ;  $p = 0.00$ ). The results further suggest that in model C, POSSU ( $\beta = 0.35$ ;  $p \leq 0.00$ ) significantly predicted job satisfaction, whereas POSDI did not significantly predict job satisfaction.
- **Turnover intention:** The turnover intention results indicate model C as a significantly better model compared to model A ( $\Delta\chi^2 = 96.52$ ;  $\Delta df = 2$ ;  $p = 0.00$ ) and model B ( $\Delta\chi^2 = 99.14$ ;  $\Delta df = 2$ ;  $p = 0.00$ ). Also, it was found that in Model C both POSSU ( $\beta = -0.21$ ;  $p \leq 0.01$ ) and POSDI ( $\beta = -0.19$ ;  $p \leq 0.05$ ) were significant predictors of turnover intention.

**TABLE 3:** Goodness-of-fit indices and structural paths investigated for the different outcome variables

Model	Structural path	$\beta$	S.E.	$p^\dagger$	$\chi^2$	$df$	CFI	TLI	RMSEA	SRMR	AIC	BIC	$\Delta\chi^2$	$\Delta df$	$p^\ddagger$
<b>WORK ENGAGEMENT</b>															
Model A	POSSU→ Engagement	0.38	0.06	0.00*	633.22	188	0.89	0.88	0.09	0.19	14568.94	14798.29	113.69	2	0.00*
Model B	POSDI→ Engagement	0.45	0.05	0.00*	618.69	188	0.90	0.88	0.09	0.18	14554.41	14783.75	99.16	2	0.00*
Model C	POSSU→ Engagement	0.18	0.07	0.01*	519.53	186	0.92	0.91	0.08	0.05	14459.25	14695.76	-	-	-
	POSDI→ Engagement	0.35	0.07	0.00*											
<b>LEARNING</b>															
Model A	POSSU→ Learning	0.36	0.06	0.00*	333.17	89	0.91	0.89	0.10	0.20	10947.98	11112.83	103.82	2	0.00*
Model B	POSDI→ Learning	0.36	0.06	0.00*	324.42	89	0.91	0.90	0.10	0.20	10939.23	11104.08	95.07	2	0.00*
Model C	POSSU→ Learning	0.13	0.08	<b>0.11</b>	229.35	87	0.95	0.94	0.08	0.04	10848.16	11020.17	-	-	-
	POSDI→ Learning	0.29	0.08	0.00*											
<b>JOB SATISFACTION</b>															
Model A	POSSU→ Satisfaction	0.33	0.04	0.00*	314.53	64	0.91	0.89	0.12	0.24	8568.11-	8711.45	112.64	2	0.00*
Model B	POSDI→ Satisfaction	0.42	0.06	0.00*	297.62	64	0.92	0.90	0.12	0.23	8551.20	8694.54	95.73	2	0.00*
Model C	POSSU→ Satisfaction	0.13	0.08	<b>0.09</b>	201.89	62	0.95	0.94	0.09	0.04	8459.47	8609.98	-	-	-
	POSDI→ Satisfaction	0.35	0.07	0.00*											
<b>TURNOVER INTENTION</b>															
Model A	POSSU→ Turnover	-0.37	0.08	0.00*	282.76	64	0.92	0.90	0.11	0.22	9347.08	9490.42	96.52	2	0.00*
Model B	POSDI→ Turnover	-0.31	0.06	0.00*	285.38	64	0.92	0.90	0.11	0.22	9349.70	9493.04	99.14	2	0.00*
Model C	POSSU→ Turnover	-0.21	0.08	0.01*	186.24	62	0.95	0.94	0.09	0.04	9254.56	9405.07	-	-	-
	POSDI→ Turnover	-0.19	0.08	0.02*											

$\beta$  = Beta; S.E. = standard error;  $p^\dagger$  = statistical significance of regression paths;  $\chi^2$  = Chi squared;  $df$  = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardised root mean square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion;  $p^\ddagger$  = statistical significance of chi squared difference

The results from Table 3 suggest that for all the organisational outcomes (i.e. work engagement, learning, job satisfaction and turnover intention), Model C showed a significantly better fit to the data compared to model A and model B, suggesting that both POSSU and POSDI are predictors of organisational outcomes.

The primary research question of this study was whether an exclusive focus on POSSU, an exclusive focus on POSDI or a focus on both of these types of support will lead to more favourable organisational outcomes (including work engagement, learning, job satisfaction and turnover intention). In an attempt to provide empirical evidence that the focus on both POSSU and POSDI will be the optimal choice, the ideal would have been to determine the extent to which an interaction term between POSSU and POSDI would be a significantly better predictor of all the outcome variables compared to POSSU and POSDI individually. This would allow one to examine whether strengths use, deficit improvement or a combination of both would yield more positive results for the organisation. However, it was not possible to conduct this type of analysis in this study, because of the very high correlations between POSSU and the interaction term ( $r = 0.81$ ) and between POSDI and the interaction term ( $r = 0.91$ ). It was therefore decided to make use of multivariate analysis of variance (MANOVA) analysis to compare groups based on their different levels of POSSU and POSDI. This is discussed below.

### ***MANOVA and ANOVA***

MANOVA analysis was conducted to determine whether POSSU, POSDI or a combined approach is associated with higher work engagement, more learning, increased job satisfaction and lower turnover intention. The sample was divided into four groups based on the mean scores of POSSU and POSDI. It was decided that all the responses below the mean were categorised as low POSSU or POSDI respectively and that all the responses above the mean were categorised as high POSSU or POSDI. Consequently, the following four groups were created:

- 1) Group one consisted of employees experiencing low POSSU and low POSDI (LS\_LD), implying that the organisation does not provide support for employees in using strengths or developing their weaknesses;

- 2) Group two consisted of employees with high POSSU, but low POSDI (HS\_LD), implying that the organisation provides support for strengths use, but pays little attention to improving employees' deficits (e.g. following mainly a strength-based approach);
- 3) Group three consisted of employees with low POSSU but high POSDI (LS\_HD), meaning that these employees perceive their organisation to be supportive of them improving their deficits, but pays little attention to using their strengths (e.g. following mainly a deficit-based approach); and
- 4) Group four comprised employees experiencing high POSSU and high POSDI (HS\_HD), meaning that these organisations provide employees with opportunities to use their strengths and to improve their deficits (e.g. the combined approach).

The results of the Wilks' lambda test indicated that statistically significant multivariate group differences were found ( $F_{(15,657)} = 4.14, p \leq 0,01$ ; Wilks'  $\lambda = 0,78$ ; partial  $\eta^2 = 0,08$ ). The results of the follow-up analysis of variance (ANOVA) indicated significant differences for each of the five outcomes. Group comparisons were done by means of the Games-Howell procedure, since the group sizes were unequal (Mayers, 2013). The results are presented in Table 4.

**TABLE 4:** Between-group differences based on work engagement, learning, job satisfaction and turnover intention

	92	43	41	88			
Variable	Group 1: LS_LD	Group 2: HS_LD	Group 3: LS_HD	Group 4: HS_HD	<i>F</i>	<i>p</i>	Partial $\eta^2$
Work engagement	4.60 (0.91) <sup>a</sup>	4.98 (0.65)	5.14 (0.94) <sup>b</sup>	5.38 (0.72) <sup>b</sup>	12.84	0.00	0.14
Learning	4.08 (0.63) <sup>a</sup>	4.30 (0.79)	4.35 (0.70)	4.47 (0.60) <sup>b</sup>	5.24	0.01	0.06
Job satisfaction	3.93 (0.70) <sup>a</sup>	4.05 (0.83) <sup>c</sup>	4.29 (0.63) <sup>b</sup>	4.55 (0.58) <sup>b,d</sup>	12.48	0.00	0.13
Turnover intention	2.51 (1.04) <sup>a</sup>	2.13 (0.95)	2.31 (0.87)	1.83 (0.96) <sup>b</sup>	7.02	0.00	0.08

The means are presented in the table with standard deviations in brackets; statistical significance is set at  $p \leq 0.05$ ;

a Group differs statistically significantly from group (in row) where b is indicated; c Group differs statistically significantly from group (in row) where d is indicated;

The ANOVA results indicate that for all the outcomes, group one (low POSSU; low POSDI) differed significantly from group four (high POSSU; high POSDI). In each of these cases, the high POSSU-high POSDI group showed significantly higher levels of work engagement (*Cohen's d* = -0.95; large effect), learning (*Cohen's d* = -0.64; moderate effect) and job satisfaction (*Cohen's d* = -1.81, large effect), and lower levels of turnover intention (*Cohen's*

$d = 0.68$ , moderate effect) compared to the low POSSU-low POSDI group. In addition, interesting group differences were found for work engagement and job satisfaction, where the results showed that there is also a significant difference between group one (low POSSU; low POSDI) and group three (low POSSU; high POSDI), indicating that individuals who believe their organisation develops their deficits (but not necessarily use their strengths) have significantly higher work engagement (*Cohen's d* = -0.59; moderate effect) and job satisfaction (*Cohen's d* = -0.53; moderate effect) when compared to employees who perceive their organisation as neither using their employees' strengths nor improving their deficits. Similarly, group two (high POSSU; low POSDI) showed significantly lower job satisfaction levels compared to group four (high POSSU; high POSDI; *Cohen's d* = -0.75; moderate effect), suggesting that employees who believe their organisation uses their strengths but does not improve their deficits reported significantly lower job satisfaction than those employees who indicated that their organisation both uses their strengths and improve their deficits.

## **DISCUSSION**

The primary objective of this study was to examine whether strengths use, deficit improvement or a combined approach will be the strongest predictor of important organisational outcomes (including work engagement, learning, job satisfaction and turnover intention). Firstly, the relationships between the variables in this study were examined. The results indicate that both POSSU and POSDI are positively related to work engagement, learning and job satisfaction, and negatively related to turnover intention. This implies that when employees perceive their organisation to be supportive of them using their strengths and improving their deficits, they are more likely to experience increased levels of work engagement, learning and job satisfaction, and lower intentions to leave the organisation. Therefore, hypotheses 1a, 1b, 2a, 2b, 3a, 3b, 4a and 4b were all confirmed.

### **Structural equation modelling**

The predictive value of POSSU, POSDI and the presence of both approaches on the organisational outcomes were further explored through testing competing models with structural equation modelling. For each of the organisational outcomes, three models were tested. Firstly, the unique contribution of POSSU in predicting the organisational outcomes



was tested (model 1). Then the unique contribution of POSDI in the prediction of each of the organisational outcomes was tested (model 2). Finally, it was assessed whether the experience of employees of both POSSU and POSDI predicted the outcomes (model 3). The most significant finding from the SEM analysis was that for all the outcomes (work engagement, learning, job satisfaction and turnover intention), model 3 was proven to be the best model. This highlights the importance of considering both POSSU and POSDI in predicting the outcome variables.

### ***Work engagement and turnover intention***

The SEM results indicate that both POSSU and POSDI significantly predicted work engagement and turnover intention. These results are in line with the results from previous research. A recent study by Botha and Mostert (2014) has found that employees who are allowed to use their strengths at work, experience higher work engagement. POSSU and POSDI were shown to significantly predict turnover intention when these relationships were examined separately, as well as when POSSU and POSDI were both included as predictors of turnover intention in one model. Similar results were also obtained in previous studies. For example, previous studies indicate that when employees are given the opportunity to use their strengths at work (Falender & Shafranske, 2004; Peterson & Seligman, 2004) or master new skills (for example through deficit improvement; Bell & Kozlowski, 2008; Frayne & Geringer, 2000) these employees may foster a sense of competence and self-efficacy, leaving employees feeling that they have control over their own performance and that they can positively influence their workplace. These positive attitudes about their work may lead to higher levels of job satisfaction and lower levels turnover intention.

### ***Learning and job satisfaction***

With regard to learning and job satisfaction, the results showed that both POSSU and POSDI predicted learning and job satisfaction when each relationship was examined separately. This implies that employees who perceive their organisation to be supportive of them using their strengths may experience learning in the workplace. The same holds true for employees who believe their organisation supports the improvement of their deficits. These results are in line with the expected hypotheses. In terms of the association of POSSU and POSDI with learning, it is reasonable to expect that when individuals improve their deficits, they are

acquiring new skills through, for example, training opportunities. Furthermore, using one's strengths is directly related to the application of one's knowledge. In addition, previous studies have also implied the relationship between learning and job satisfaction. Research has shown that in organisations where employees receive development opportunities, they may feel valued by the organisation (Xanthopoulou, et al., 2007), which may influence their job satisfaction. Similarly, when employees feel they apply their strengths at work they may feel more optimistic about their job, find their work more meaningful, and may derive more pleasure from their daily activities (Harzer & Ruch, 2013; Littman-Ovadia & Steger, 2010), which may influence their job satisfaction.

It is worthwhile to note that in the SEM analyses of learning and job satisfaction, when POSSU and POSDI were examined separately, both were significant predictors of these two outcomes. However, when they were both included in one model and the covariance between these two variables was taken into account, the path between POSSU and learning/job satisfaction, became insignificant. Consequently, in this study, POSSU is a significant predictor of learning and job satisfaction when POSDI is not accounted for in the model. However, in the case where both strengths use and deficit improvement are present, POSDI may play the predominant role in increasing learning and job satisfaction and POSSU may become less significant or important in predicting these outcomes. These results highlight the importance of developing teachers' deficits in this sample, and that deficit improvement might be more important for teachers than using their strengths. This makes sense within the teaching context – the very nature of the teaching environment is learning and development. Their core focus is teaching and training students for the purpose of learning and development. This might explain the prominence of deficit improvement in the prediction of learning and job satisfaction, since this is a great priority for educators.

## **ANOVA**

ANOVA and MANOVA analyses were done to examine the extent to which a combination of groups with regard to low and high levels of POSSU and POSDI differed regarding the outcome variables. The sample was divided into four groups. Group one consisted of employees experiencing low POSSU and low POSDI. Group two consisted of employees following a strengths-based approach (high POSSU, but low POSDI). Group three consisted of employees who follow a deficit-based approach (low POSSU but high POSDI). Group

four represents the experience of a combined approach (high POSSU and high POSDI). The results for each of the outcome variables are discussed below.

### ***Work engagement***

It was hypothesised that in organisations with a combined approach of both POSSU and POSDI, employees will have a higher work engagement than in organisations with low POSSU and low POSDI, and organisations with an exclusive focus on either POSSU or POSDI. The results of this study partially confirmed hypothesis 1c. It was found that group one with low POSSU and low POSDI showed significantly lower levels of work engagement compared to group four who experienced the combined approach. Furthermore, in the case where employees perceived the organisation as not using their strengths or improving their deficits (low POSSU and low POSDI) there were significantly lower levels of work engagement when compared to group three with a low POSSU and high POSDI (following a deficit-based approach). No differences were found between a combined approach and a strengths-based approach (group two) or a deficit-based approach (group three). Furthermore, the results showed no significant differences between a strengths-based approach (group two) or a deficit-based approach (group three) compared to group one with low POSSU and low POSDI. Therefore, although it could not be asserted that a combined approach may yield higher work engagement than a strengths-based approach or a deficit-based approach, it was seen that in organisations with a combined approach and a deficit-based approach employees have significantly higher work engagement levels.

### ***Learning***

Hypothesis 2c stated that in organisations where a combined approach (focusing on both POSSU and POSDI) is followed, employees will have higher levels of learning compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follow a deficit-based approach (exclusive focus on deficits). This hypothesis was partially confirmed. The ANOVA results suggested that organisations with neither POSSU nor POSDI (group one) are likely to experience significantly lower learning than organisations following a combined approach with high POSSU and high POSDI (group four). No significant differences were found between a combined approach (group four) and a strengths-based approach (group two) or a deficit-based approach (group three). Furthermore, it was not

demonstrated that a strengths-based approach (group two) or a deficit-based approach (group three) differed significantly from group one with low POSSU and low POSDI. Accordingly, it can be asserted that following a combined approach is associated with high learning experiences in the workplace.

### ***Job satisfaction***

Hypothesis 5a expected that organisations where a combined approach (focusing on both POSSU and POSDI) is followed will have employees with higher levels of job satisfaction compared to organisations with low POSSU and low POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follow a deficit-based approach (exclusive focus on deficits). The results indicated that group one with low POSSU and low POSDI reported significantly lower levels of job satisfaction than group four with high POSSU and high POSDI. Similarly, group one with low POSSU and low POSDI had lower levels of job satisfaction compared to group three with low POSSU and high POSDI (deficit-based approach). Therefore, both a deficit-based approach and a combined approach yield positive results for employees' job satisfaction levels. However, it could not be alleged that either one of these two approaches are better than the other for job satisfaction. It was, however, found that the combined approach (group four) showed higher job satisfaction levels than the group following a strengths-based approach (group two). Therefore, hypothesis 5a was partially confirmed.

### ***Turnover intention***

Hypothesis 5b expected that in organisations with a combined approach (focusing on both POSSU and POSDI) employees will have lower levels of turnover intention compared to organisations where there is a lack of POSSU and a lack of POSDI, organisations that follow a strengths-based approach (exclusive focus on strengths), and organisations that follow a deficit-based approach (exclusive focus on deficits). This hypothesised was partially confirmed since the results only suggest that in organisations where employees experience low POSSU and low POSDI (group one) employees will experience higher turnover intentions when compared to those following a combined approach focusing on both POSSU and POSDI (group four). It was not established that a combined approach is associated with lower levels of turnover intentions compared to a strengths-based approach (group two with

high POSSU and low POSDI) or a deficit-based approach (group three with low POSSU and high POSDI). Neither can it be asserted that a strengths-based approach or a deficit-based approach is better than an approach with low POSSU and low POSDI. Therefore, it can be concluded that employees who experience a combined approach where attention is given to employees' strengths and their deficits are likely to have lower turnover intentions.

## **Conclusions and limitations**

In this study, it was found that employees who believe that the organisation supports them to use their strengths and improve their deficits (i.e. a combined approach) will experience higher levels of work engagement, learning and job satisfaction and lower intentions to leave the organisation. The results did not confirm differences between employees perceiving their organisations as following a combined approach, those who believe their organisation follows a strengths-based approach (high POSSU but low POSDI), and those perceiving a deficit-based approach (low POSSU but high POSDI). One exception is that a combined approach was associated with higher job satisfaction than a strengths-based approach. However, no differences were also found between a strengths-based approach and a deficit-based approach when compared to the group with low POSSU and low POSDI. It can therefore not be assumed that following one of these approaches yields better results for work engagement, learning, job satisfaction and turnover intentions. The exceptions to the above is that a deficit-based approach was shown to be associated with higher levels of work engagement and turnover intentions compared to an environment with low POSSU and low POSDI.

Also worth noting are the differences in the results for each of the outcome variables. This illustrates the importance of exploring strengths use, deficit improvement and a combined focus on both for each organisational outcome on its own merit.

To conclude, the results of this study clearly suggest that in an environment where the organisation follows a combined approach – focusing on both POSSU and POSDI – employees are likely to experience higher levels of work engagement, learning and job satisfaction and lower turnover intention, compared to organisations where neither strengths use and deficit improvement receive much consideration. Therefore, focusing on both strengths use and deficit improvement may benefit the individual and organisation greatly, indicating the need for employees to both use their strengths and improve their deficits in the

work. Consequently, it is recommended that organisations invest equally in their employees' deficits and their strengths, rather than overemphasising or neglecting either strengths use or deficit improvement.

This study, however, is not without limitations. The cross-sectional design followed cautions the reader to prudently interpret the findings. In order to make sound inferences regarding causal relationships it is suggested that future studies examine these relationships longitudinally. Similarly, the sample was relatively homogeneous and future research may explore these relationships among different and more heterogeneous populations. Another limitation in this study was the use of self-report measures, as this threatens the validity of the findings through possible response bias (Bolt & Johnson, 2009). Although it would be ideal to assess strengths use and deficit improvement of employees with objective measures, this would likely prove to be time and resources intensive.

## **AUTHOR'S NOTE**

The first author, Me. Crizelle Els fulfilled the role of the primary researcher, and this study formed part of her PhD research. She was responsible for the conceptualisation of the article, collecting of the data, the statistical analysis of the data in consultation with a statistical consultant, the interpretation of the research results, and the writing of the article. Prof. Karina Mostert acted as promoter to this study, whereas Dr Marianne van Woerkom acted as co-promoter. Prof. Mostert and Dr Van Woerkom played an advisory role in this study and assisted in the conceptualisation of the study and the writing of the research article.

## **ACKNOWLEDGEMENTS**

The material in this article is based on work that the National Research Foundation (NRF) supported. Any opinions, findings, conclusions or recommendations in this article are those of the author(s). Therefore, the NRF does not accept any liability for them.

## REFERENCES

- Adeniji, A. A. (2011). Organizational climate as a predictor of employee job satisfaction: evidence from Covenant University. *Business Intelligence Journal*, 4(1), 151-166.
- Aguinis, H., Gottfredson, R. K., & Joo, H. (2012). Delivering effective performance feedback: The strengths-based approach. *Business Horizons*, 55(2), 105-111. doi: 10.1016/j.bushor.2011.10.004
- Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, 20(4), 265-269. doi: 10.1177/0963721411414534
- Bakker, A. B., & Bal, M. P. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology*, 83(1), 189-206. doi: 10.1348/096317909X402596
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309-328. doi: 10.1108/02683940710733115
- Bakker, A. B., & Geurts, S. A. (2004). Toward a dual-process model of work-home interference. *Work and Occupations*, 31(3), 345-366. doi: 10.1177/0730888404266349
- Bakker, A., Demerouti, E., & Schaufeli, W. (2003). Dual processes at work in a call centre: An application of the Job Demands-Resources model. *European Journal of Work and Organizational Psychology*, 12(4), 393-417. doi: 10.1080/13594320344000165
- Bartlett, K. R. (2001). The relationship between training and organizational commitment: A study in the health care field. *Human Resource Development Quarterly*, 12(4), 335-352. doi: 10.1002/hrdq.1001
- Bell, B. S., & Kozlowski, S. W. (2008). Active learning: effects of core training design elements on self-regulatory processes, learning, and adaptability. *Journal of Applied Psychology*, 93(2), 296-316. doi: 10.1037/0021-9010.93.2.296
- Biswas-Diener, R. (2010). *Practicing positive psychology coaching: Assessment and strategies for success*. Hoboken, NJ: John Wiley & Sons Inc.
- Blanchard, P. N., & Thacker, J. W. (2007). *Effective training: Systems, strategies, and practices* (3rd ed.) NJ: Pearson Prentice Hall.
- Botha, C., & Mostert, K. (2014). A structural model of job resources, organisational and individual strengths use and work engagement. *SA Journal of Industrial Psychology*, 40(1), 01-11. doi:10.4102/sajip.v40i1.1135

- Brown, J. (2002). Training needs assessment: A must for developing an effective training program. *Public Personnel Management*, 31(4), 569-578. doi: 10.1177/009102600203100412
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. Scott Long (Eds.), *Testing structural equation models* (pp. 1-9). Newbury Park, CA: Sage Publications.
- Buckingham, M., & Clifton, D. O. (2001). *Now, discover your strengths*. New York: Free Press.
- Byrne, B. (2010). *Structural equation modeling with AMOS*. New York, NY: Routledge.
- Cameron, K. S., Dutton, J. E., & Quinn, R. E. (2003). Foundations of positive organizational scholarship. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 3-13). San Francisco: Berrett-Koehler Publishers.
- Carr, A. (2004). *Positive psychology: The science of happiness and human strengths*. East Sussex, England: Brunner-Routledge.
- Clifton, D. O., & Harter, J. K. (2003). Investing in Strengths. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 111-121). San Francisco: Berrett Koehler Publishers.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cropanzano, R., Rupp, D. E., & Byrne, Z. S. (2003). The relationship of emotional exhaustion to work attitudes, job performance, and organizational citizenship behaviors. *Journal of Applied Psychology*, 88(1), 160-169. doi: 10.1037/0021-9010.88.1.160
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627-668.
- Demerouti, E., Le Blanc, P. M., Bakker, A. B., Schaufeli, W. B., & Hox, J. (2009). Present but sick: A three-wave study on job demands, presenteeism and burnout. *Career Development International*, 14(1), 50-68. doi: 10.1108/13620430910933574
- Diedericks, E., & Rothmann, S. (2014). Flourishing of information technology professionals: Effects on individual and organisational outcomes. *South African Journal of Business Management*, 45(1), 27-41.



- Dysvik, A., & Kuvaas, B. (2010). Exploring the relative and combined influence of mastery-approach goals and work intrinsic motivation on employee turnover intention. *Personnel Review*, 39(5), 622-638. doi: 10.1108/00483481011064172
- Falender, C. A., & Shafranske, E. P. (2004). *Clinical supervision: A competency-based approach*. Washington, DC: American Psychological Association.
- Frayne, C. A., & Geringer, J. M. (2000). Self-management training for improving job performance: A field experiment involving salespeople. *Journal of Applied Psychology*, 85(3), 361-372. doi: 10.1037/0021-9010.85.3.361
- García, M. Ú. (2005). Training and business performance: The Spanish case. *The International Journal of Human Resource Management*, 16(9), 1691-1710. doi: 10.1080/09585190500239341
- González-Romá, V., Schaufeli, W. B., Bakker, A. B., & Lloret, S. (2006). Burnout and work engagement: Independent factors or opposite poles? *Journal of Vocational Behavior*, 68(1), 165-174. doi:10.1016/j.jvb.2005.01.003
- Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review*, 2(2), 143-153.
- Hair, J. F., Celsi, M. W., Money, A. H., Samouel, P., & Page, M. J. (2003). *Essentials of business research methods*. New York, NY: ME Sharpe Inc.
- Harrison, R. (1992). *Employee development*. London, England: Institute of Personal Management.
- Harzer, C., & Ruch, W. (2013). The application of signature character strengths and positive experiences at work. *Journal of Happiness Studies*, 14(3), 965-983. doi:10.1007/s10902-012-9364-0
- Hellgren, J., Sjöberg, A., & Sverke, M. (1997). Intention to quit: Effects of job satisfaction and job perceptions. In F. Avallone, J. Arnold, & K. de Witte (Eds.), *Feelings work in Europe* (pp. 415-423). Milano, Italy: Guerini.
- Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage.
- Hu, L., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus structural equation modeling, *A Multidisciplinary Journal*, 6(1), 1-55. doi: 10.1080/10705519909540118
- IBM SPSS. (2013). *SPSS 22.0* [computer software]. Chicago, IL: SPSS.

- Jackson, L. T. B., Rothmann, S., & Van de Vijver, F. J. R. (2006). A model of work-related well-being for educators in South Africa. *Stress and Health, 22*(4), 263-274. doi:10.1080/14330237.2014.980617
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction–job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*(3), 376-407. doi.org/10.1037/0033-2909.127.3.376
- Kabungaidze, T., Mahlatshana, N., & Ngirande, H. (2013). The impact of job satisfaction and some demographic variables on employee turnover intentions. *International Journal of Business Administration, 4*(1), 53-65. doi: 10.5430/ijba.v4n1p53
- Kaiser, R. B., & Overfield, D. V. (2011). Strengths, strengths overused, and lopsided leadership. *Consulting Psychology Journal: Practice and Research, 63*(2), 89-109. doi: 10.1037/a0024470
- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria what did they really say? *Organizational Research Methods, 9*(2), 202-220. doi:10.1177/1094428105284919
- Linley, A. (2008). *Average to A+: Realising strengths in yourself and others*. London, England: CAPP Press.
- Linley, P. A., & Harrington, S. (2006). Strengths coaching: A potential-guided approach to coaching psychology. *International Coaching Psychology Review, 1*(1), 37-46.
- Linley, P. A., Nielsen, K. M., Wood, A. M., Gillett, R., & Biswas-Diener, R. (2010). Using signature strengths in pursuit of goals: Effects on goal progress, need satisfaction, and well-being, and implications for coaching psychologists. *International Coaching Psychology Review, 5*(1), 6-15.
- Llorens, S., Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exist? *Computers in Human Behavior, 23*(1), 825-841. doi:10.1016/j.chb.2004.11.012
- Lopez, S. J., Hodges, T., & Harter, J. (2005). *Clifton StrengthsFinder technical report: Development and validation*. Princeton, NJ: The Gallup Organization.
- Masia, U., & Pienaar, J. (2011). Unravelling safety compliance in the mining industry: Examining the role of work stress, job insecurity, satisfaction and commitment as antecedents. *SA Journal of Industrial Psychology, 37*(1), 1-10. doi: 10.4102/sajip.v37i1.937
- Mathis, R. L., & Jackson, J. H. (2005). *Human resource management: Essential perspectives* (3rd ed.). Cincinnati, OH: South-western.

- Mauno, S., Kinnunen, U., & Ruokolainen, M. (2007). Job demands and resources as antecedents of work engagement: A longitudinal study. *Journal of Vocational Behavior*, 70(1), 149-171. Doi: 10.1016/j.jvb.2006.09.002
- Mauno, S., Kinnunen, U., Mäkikangas, A., & Feldt, T. (2010). Job demands and resources as antecedents of work engagement: A qualitative review and suggestions for future research. In S. Albrecht (Eds.), *Handbook of employee engagement: Perspectives, issues, research and practice* (pp. 111–128). Cheltenham, England: Elgar.
- Mayers, A. (2013). *Introduction to statistics and SPSS in psychology*. London: Pearson.
- Meyers, M.C., Van Woerkom, M. & De Reuver, R.S.M., Bakk, Z., & Oberski, D.L. (2015). Enhancing psychological capital and personal growth initiative: Working on strengths or deficiencies. *Journal of Counseling Psychology*, 62(1), 50-62. doi: 10.1037/cou0000050
- Minhas, G. (2010). Developing realised and unrealised strengths: Implications for engagement, self-esteem, life satisfaction and well-being. *Assessment and Development Matters*, 2(1), 12-16.
- Muthén, L. K., & Muthén, B. O. (2014). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén,
- Muthén, L. K. (2010). *Confirmatory factor analysis: Means for latent variables* [Online forum comment]. Retrieved from <http://www.statmodel.com/discussion/messages/9/5825.html?1409874539>
- Ngidi, D. P., & Sibaya, P. T. (2002). Black teachers' personality dimensions and work-related stress factors. *South African Journal of Psychology*, 32(3), 7-15. doi: 10.1177/008124630203200302
- Noe, R. A., Wilk, S. L., Mullen, E. J., & Wanek, J. E. (2014). Employee development: Issues in construct definition and investigation of antecedents. In J. K. Ford, S. W. J. Kozlowski, K. Kraiger, E. Salas, & MS Teachout (Eds.), *Improving training effectiveness in work organizations* (pp. 153-189). New York, NY: Psychology Press.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw-Hill.
- Oliver, M. A., & Venter, D. J. L. (2003). The extent and causes of stress in teachers in the George region. *South African Journal of Education*, 23(3), 186-192.
- Paterson, T. A., Luthans, F., & Jeung, W. (2014). Thriving at work: Impact of psychological capital and supervisor support. *Journal of Organizational Behavior*, 35(3), 434-446. doi 10.1002/job.1907

- Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press.
- Pfeffer, J., & Sutton, R. I. (2006). Evidence-based management. *Harvard Business Review*, 84(1), 62-74.
- Pienaar, J., Sieberhagen, C. F., & Mostert, K. (2007). Investigating turnover intentions by role overload, job satisfaction and social support moderation. *SA Journal of Industrial Psychology*, 33(2), 62-67. doi: 10.4102/sajip.v33i2.378
- Porath, C., Spreitzer, G., Gibson, C., & Garnett, F. G. (2012). Thriving at work: Toward its measurement, construct validation, and theoretical refinement. *Journal of Organizational Behavior*, 33(2), 250-275. doi: 10.1002/job.756
- Proctor, C., Maltby, J., & Linley, P. A. (2011). Strengths use as a predictor of well-being and health-related quality of life. *Journal of Happiness Studies*, 12(1), 153-169. doi 10.1007/s10902-009-9181-2
- Rath, T. (2007). *Strengths Finder 2.0*. New York, NY: Gallup Press.
- Rothmann, S., & Pieterse, J. (2007). Predictors of work-related well-being in sector education training authorities. *South African Journal of Economic and Management Sciences*, 10(3), 298-312.
- Rust, T., Diessner, R., & Reade, L. (2009). Strengths only or strengths and relative weaknesses? A preliminary study. *The Journal of Psychology: Interdisciplinary and Applied*, 143(5), 465-476. doi: 10.3200/JRL.143.5.465-476
- Ryan, R. M., & Deci, E. L. (2011). A self-determination theory perspective on social, institutional, cultural, and economic supports for autonomy and their importance for well-being. In V. I. Chirkov, R. M. Ryan, & K. M. Sheldon (Eds.), *Human autonomy in cross-cultural context: Perspectives on the psychology of agency, freedom and well-being* (pp. 45-64). Netherlands, Dordrecht: Springer.
- Santos, A., & Stuart, M. (2003). Employee perceptions and their influence on training effectiveness. *Human Resource Management Journal*, 13(1), 27-45. doi: 10.1111/j.1748-8583.2003.tb00082.x
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25(3), 293-315. doi: 10.1002/job.248
- Schaufeli, W. B., & Bakker, A. B. (2010). The conceptualization and measurement of work engagement. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp.10-24). New York, NY: Psychology Press.

- Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior, 30*(7), 893-917. doi: 10.1002/job.595
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3*(1), 71-92. doi: 10.1023/A:1015630930326
- Schmidt, S. W. (2007). The relationship between satisfaction with workplace training and overall job satisfaction. *Human Resource Development Quarterly, 18*(4), 481-498. doi: 10.1002/hrdq.1216
- Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York, NY: Free Press.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5-14. doi: 10.1037//0003-066X.55.1.5
- Sirmon, D. G., Hitt, M. A., Arregle, J. L., & Campbell, J. T. (2010). The dynamic interplay of capability strengths and weaknesses: Investigating the bases of temporary competitive advantage. *Strategic Management Journal, 31*(13), 1386-1409. doi: 10.1002/smj.893
- Sjöberg, A., & Sverke, M. (2000). The interactive effect of job involvement and organizational commitment on job turnover revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology, 41*(3), 247-252. doi: 10.1111/1467-9450.00194
- Slade, M. (2010). Mental illness and well-being: The central importance of positive psychology and recovery approaches. *BMC Health Services Research, 10*(1), 1-14. doi:10.1186/1472-6963-10-26
- Smith, E. J. (2006). The strength-based counseling model. *The Counseling Psychologist, 34*(1), 13-79. doi: 10.1177/0011000005277018
- Sonnentag, S., Niessen, C., & Ohly, S. (2004). Learning at work. In C. L. Cooper, & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (Vol. 19, pp. 249-289). Chichester, West Sussex: Wiley.
- Spector, P. E., Allen, T. D., Poelmans, S. A. Y., Lapierre, L. M., Cooper, C. L., O'Driscoll, M. P., et al. (2007). Cross-national differences in relationships of work demands, job satisfaction, and turnover intentions with work-family conflict. *Personnel Psychology, 60*(4), 805-835. doi: 10.1111/apps.12004
- Spreitzer, G., & Porath, C. (2012). Creating sustainable performance. *Harvard Business Review, 90*(1), 92-99.

- Spreitzer, G., Sutcliffe, K., Dutton, J., Sonenshein, S., & Grant, A. M. (2005). A socially embedded model of thriving at work. *Organization Science*, *16*(5), 537-549. doi: 10.1287/orsc.1050.0153
- Storm, K., & Rothmann, S. (2003). A psychometric analysis of the Utrecht Work Engagement Scale in the South African police service. *SA Journal of Industrial Psychology*, *29*(4), 62-70. doi: 10.4102/sajip.v29i4.129
- Tannenbaum, S. I., Mathieu, J. E., Salas, E., & Cannon-Bowers, J. A. (1991). Meeting trainees' expectations: The influence of training fulfillment on the development of commitment, self-efficacy, and motivation. *Journal of Applied Psychology*, *76*(6), 759-769. doi: 10.1037//0021-9010.76.6.759
- Trochim, W. M. K., & Donnelly, J. P. (2007). *The research methods knowledge base* (3rd ed.). Mason, OH: Thompson Custom Solutions.
- Van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology*, *9*(4), 486-492. doi: 10.1080/17405629.2012.686740
- Van Ruysseveldt, J., Proost, K., & Verboon, P. (2011). The role of work-home interference and workplace learning in the energy-depletion process. *Management Revue*, *22*(2), 151-168. doi: 10.1688/1861-9908
- Van Wijhe, C., Peeters, M., Schaufeli, W., & Van den Hout, M. (2011). Understanding workaholism and work engagement: the role of mood and stop rules. *Career Development International*, *16*(3), 254-270. doi: 10.1108/13620431111140156
- Van Woerkom, M., & Meyers, M. C. (2015). My strengths count! Effects of a strengths-based psychological climate on positive affect and job performance. *Human Resource Management*, *54*(1), 81-103. doi: 10.1002/hrm.21623
- Wood, A. M., & Tarrier, N. (2010). Positive clinical psychology: A new vision and strategy for integrated research and practice. *Clinical Psychology Review*, *30*(7), 819-829. doi: 10.1016/j.cpr.2010.06.003
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the Job Demands-Resources model. *International Journal of Stress Management*, *14*(2), 121-141. doi: 10.1037/1072-5245.14.2.121
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behaviour*, *74*(3), 235-244. doi: 10.1016/j.jvb.2008.11.003

## **CHAPTER 5**

### **RESEARCH ARTICLE 4**

# EXAMINING THE RELATIONSHIP BETWEEN STRENGTHS USE, DEFICIT IMPROVEMENT AND WORK ENGAGEMENT

## ABSTRACT

**Orientation:** The relationship between recently conceptualised perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) with organisational outcomes such as work engagement needs to be contextualised in the literature.

**Research purpose:** The primary objective of this study was to examine which of the following two models is a better fitting structural model: (a) a model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI; or (b) a model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement.

**Motivation for the study:** Previous research has indicated contrasting results regarding the relationships between PBSU and PBDI with work engagement. This study endeavoured to cast light on this relationship.

**Research design, approach and method:** This study was conducted among 378 employees in the financial industry in South Africa. A cross-sectional survey design was followed.

**Main findings:** The results indicate that the model where work engagement is the antecedent of proactive behaviour (i.e. PBSU and PBDI) is superior to a model where work engagement is the outcome of PBSU and PBDI. In the best-fitting model, POSSU and POSDI were significant predictors of work engagement. Work engagement, on the other hand, significantly predicted PBSU and PBDI. Therefore, the conditions for mediation are met and significant indirect effects illustrated that work engagement is a mediator in the relationship between POSSU and PBSU and between POSDI and PBDI.

**Practical/managerial implications:** The results from this study illustrate that a supportive environment where employees can use their strengths and improve their deficits is likely to increase their work engagement. The latter, in turn, may mobilise employees to engage in proactive behaviour to use their strengths and improve their deficits. Therefore, the



importance of both strengths use and deficit improvement for optimal employee functioning is illustrated.

**Contribution:** This study adds to the literature by providing preliminary evidence for the relationships between POSSU, POSDI, PBSU, PBDI and work engagement. These relationships should, however, be corroborated in future longitudinal research.

**Keywords:** perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI), work engagement

## INTRODUCTION

The literature on positive psychology and a regard for both the positive and negative aspects of human life is growing. More recently, researchers have promoted a focus on both individuals' strengths and their deficits (Rust, Diessner & Reade, 2009; Sirmon, Hitt, Arregle & Campbell, 2010; Kaiser & Overfield, 2011). This body of knowledge acknowledges that both the use of individuals' strengths and the development of their deficits may have positive outcomes. With regard to deficits, empirical studies have found a positive relationship between the employee training and development with organisational effectiveness and goal attainment (Brown, 2002; García, 2005), increased job satisfaction (Schmidt, 2007), higher levels of organisational commitment (Bartlett, 2001), lower turnover intentions (Pfeffer & Sutton, 2006), increased motivation and a willingness to devote discretionary effort (Dysvik & Kuvaas, 2008), and higher levels of work engagement (Bakker & Geurts, 2004). With regard to strengths, past studies have found that individual strengths use is related to positive emotions and personal well-being (Govindji & Linley, 2007; Proctor, Maltby & Linley, 2011), experiences of personal mastery and growth (Senge, 1990), increased self-efficacy (Kaslow, Falender & Grus, 2012), increased life satisfaction (Park, Peterson & Seligman, 2004), increased in-role and out-role performance (Van Woerkom & Meyers, 2015), and higher levels of personal growth initiative (Meyers, Van Woerkom, De Reuver, Bakk & Oberski, 2015).

In reaction to the support for a focus on both strengths and deficits, Els et al. (article 1 of this thesis) have contextualised strength use and deficit improvement within an organisational context. In this taxonomy, it is argued that, firstly, an equal amount of attention should be paid to employees' strengths use and the improvement of their deficits. Secondly, it is argued that it is the prerogative of the organisation as well as the employees themselves to use their strengths and improve their deficits at work. Consequently, it is explained that (a) individuals are dependent on the organisation to provide them with the support to use their strengths and improve their deficits and that (b) employees themselves should engage in proactive behaviour to use their strengths and improve their deficits.

This resulted in the conceptualisation of four constructs – two organisational-related dimensions, namely perceived organisational support for strengths use (POSSU) and perceived organisational support for deficit improvement (POSDI), and two individual dimensions, namely proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI). The POSSU and POSDI dimensions are considered to be job resources that stimulate personal growth, learning and development, which enable employees to effectively deal with job demands and to assist in achieving their work goals (Bakker & Demerouti, 2007; Els et al., article 1 of this thesis). PBSU and PBDI, on the other hand, can be classified as two types of proactive behaviour that are characterised by self-starting behaviour (Frese, Kring, Soose & Zempel, 1996; Parker, 2000) by employees to use their strengths and improve their deficits. Based on this conceptualisation, the Strengths Use and Deficit Development Questionnaire (SUDIQ) has been developed to measure these four dimensions.

Although the SUDIQ has been validated (Els et al., article 1 of this thesis) and shows promise for future research to assess strengths use and deficit improvement in organisations, limited empirical studies exist that examine the relationship of the four constructs (i.e. POSSU, POSDI, PBSU and PBDI) within the nomological net. The studies that did test these relationships found promising results. POSSU and POSDI have been associated with increased work engagement, learning and job satisfaction, and higher turnover intentions (Els et al., article 3 of this thesis) and negative correlations were found with burnout (Els et al., article 1 of this thesis). Furthermore, research has shown that PBSU is related to work engagement (Botha & Mostert, 2014; Stander, Mostert & De Beer, 2014), exhaustion and

cynicism (Els et al., article 1 of this thesis). Els et al. (article 1 of this thesis) have also shown that PBDI is positively correlated to work engagement and negatively related to cynicism.

Although the results of the above studies promote an understanding of the relationships between the four SUDIQ dimensions, it is, however, not clear how these variables are related to one another in a structural model. It is necessary to test various structural models with all the important organisational-related variables that the four SUDIQ dimensions could be related to. However, this study will focus on the relationships between the four SUDIQ dimensions and work engagement, since all the above-mentioned studies showed a clear and strong relationship with work engagement and considering that work engagement is a positive psychological construct that is associated with a repertoire of positive organisational outcomes, including increased job satisfaction (Schaufeli & Salanova, 2008), higher levels of commitment and lower intentions to leave (Schaufeli & Bakker, 2004), and job performance (Schaufeli, Taris & Bakker, 2006).

From previous research, it is clear that job resources are the antecedents to work engagement (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Schaufeli & Bakker, 2004). It is therefore reasonable to argue that POSSU and POSDI (considered as job resources) will be the antecedents in a structural model. However, research regarding the relationship between proactive behaviour – and therefore also PBSU and PBDI – and work engagement is very limited and contradicting. More specifically, it is unclear in the literature whether proactive behaviour is an antecedent or an outcome of engagement. On the one hand, findings have showed that proactive behaviour significantly predicted work engagement (Bakker, Tims & Derks, 2012). These researchers argue that employees who engage in proactive behaviours at work are skilled at aligning their job demands and resources with their own abilities and needs, through a process of job crafting. This congruence between the employee and his/her work environment leads to increased work engagement. On the other hand, the results of other studies (c.f. Hakanen, Perhoniemi & Toppinen-Tanner, 2008; Schaufeli & Salanova, 2007; Sonnentag, 2003) found the reverse – that work engagement significantly influences the proactive behaviour of employees at work. It is argued that when employees feel energised and enthusiastic about their work (the characteristics of work engagement), individuals will be more inclined to take personal initiative to maintain their positive work environment.

In light of research on the four SUDIQ dimensions, it is therefore also not clear whether the two individual proactive dimensions (PBSU and PBDI) will be antecedents or outcomes of work engagement. The nature of this relationship is important to determine in order to identify which of the two constructs are the mediators in a structural model – PBSU and PBDI or work engagement and for organisations to tailor their interventions.

The goal of this study was therefore to compare two competing models – one model with engagement as a predictor of PBSU and PBDI (and therefore a possible mediator between POSSU/POSDI and PBSU/PBDI) and another model where proactive behaviour (PBSU and PBDI) is the predictor of work engagement (and therefore possible mediator between POSSU/POSDI and work engagement).

These two competing models will be tested within the financial sector. The financial industry is known as a high stress work environment that is highly competitive. Furthermore, as a result of globalisation, the borders for engaging in financial activities (e.g. investments and banking) have been blurred, contributing to the competitiveness in this industry. Unless organisations have committed and engaged employees, they are at risk of losing talent to competitors. Therefore, organisations are aware that their employees' well-being, and specifically engagement at work, should enjoy priority. The results of this study could provide organisations in the financial sector with additional possibilities to increase the work engagement of their employees.

## **LITERATURE REVIEW**

### **POSSU, POSDI, PBSU and PBDI**

Deficits refer to “anything that gets in the way of excellent performance” (Buckingham & Clifton, 2001, p. 148). Synonyms for a deficit or weakness include shortfall, shortage, deficiency, loss, flaw, weak point, shortcoming, and imperfection. Therefore, it can be concluded that a deficit within the work context refers to anything an employee is not good at. Strengths, on the other hand, are our “pre-existing capacity for a particular way of behaving, thinking, or feeling that is authentic and energising to the user, and enables optimal functioning, development and performance” (Linley, 2008, p. 9). Synonyms of a strength

include strong point, skill, asset, advantage, talent, forte, speciality, aptitude (Oxford English Dictionary, 2014; Collins English Dictionary, 2014). In summary, strengths are those aspects of a job employees are particularly good at.

In the workplace, performance appraisals are typically the platform used by organisations to address employees' strengths and/or their deficits. This is the opportunity superiors have to congratulate the employee on successes and also make suggestions on areas of improvement (Aguinis, Joo & Gottfredson, 2011; Bouskila-Yam & Kluger, A2011). In the literature, organisations are often urged to follow such a balanced approach of focusing on strengths and deficits, and organisations are encouraged to provide opportunities for employees to apply both their strengths in their jobs, as well as engage in activities to improve their weaknesses. Based on this, Els et al. (article 1 of this thesis) argue that this support from the organisation for employees to use their strengths and improve their deficits can be conceptualised as perceived organisational support for strengths use (POSSU) and perceived organisational support for deficit improvement (POSDI). POSSU is defined as the extent to which employees perceive their organisation to be supportive of them using their strengths. POSDI describes the extent to which employees perceive their organisation to be supportive of them improving their deficits. Els et al. (article 1 of this thesis) argue that employees are dependent on the organisation to provide them with an environment where they are encouraged to display their strengths and develop their deficits, and therefore may rely on the organisation to provide them with support in this regard. Therefore, they conceptualise POSSU and POSDI as job resources provided by the organisation.

In addition to POSSU and POSDI, it is also suggested that employees display proactive behaviour in the workplace to use their strengths and improve their deficits. Proactive behaviour is the initiative of an individual to actively, rather than passively, engage in behaviours that might improve their current circumstances (Crant, 2000). Salanova and Schaufeli (2008) describe proactive employees as individuals who show personal initiative, are action-directed, goal-directed, seek new challenges, and are persistent in the face of obstacles. Various types of proactive behaviour have been found within the context of organisational literature, including seeking feedback (Ashford, Blatt & Van de Walle, 2003), demonstrating initiative (Frese & Fay, 2001), building networks (Ashford & Black, 1996), seeking information (Morrison, 1993), helping others (Organ, 1988), taking charge (Morrison & Phelps, 1999), redefining work (Wrzesniewski & Dutton, 2001), and job crafting (Tims &

Bakker, 2010). Recently, proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) have also become of interest (Els et al., article 1 of this thesis). PBSU refers to employees' self-starting behaviour to use their strengths at work. PBDI, on the other hand, is described as employees' self-starting behaviour to improve their deficits at work.

## **Work engagement**

Work engagement is a clearly conceptualised construct in the positive psychology literature. It is described as a positive, fulfilling, work-related state of mind that is characterised by three dimensions: vigour, dedication and absorption (Schaufeli, Salanova, González-Romá & Bakker, 2002; Schaufeli & Bakker, 2010). Vigour is characterised by high energy levels and a willingness to invest extra effort in one's work. Dedication refers to a strong involvement in one's work and experiencing feelings such as enthusiasm, inspiration and pride. Absorption is experienced when one is engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work. However, previous studies have revealed that the two core dimensions of work engagement include vigour and dedication (Bakker, Schaufeli, Leiter & Taris, 2008; González-Romá, Schaufeli, Bakker & Lloret, 2006).

As mentioned in the introduction, the relationships between work engagement with strengths use and deficit improvement, and specifically POSSU, POSDI, PBSU and PBDI, need to be clarified through empirical research. One model that explains the underlying process of work engagement is the Job Demands-Resources (JD-R) model. The JD-R model is a heuristic model widely recognised in well-being literature. The central tenet of the JD-R model is that employee well-being is primarily influenced by two sets of working conditions, namely job demands and job resources (Bakker & Demerouti, 2007; Bakker, Demerouti, De Boer & Schaufeli, 2003; Bakker, Demerouti & Verbeke, 2004; Demerouti et al., 2001). Job demands refer to the physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs (Bakker & Demerouti, 2007). Examples of job demands include the pace and amount of work, emotional workload and cognitive workload (Bakker, 2011; Mauno, Kinnunen, Mäkikangas & Feldt, 2010). Job resources are considered as the physical, psychological, social, or organisational aspects of the job that are (a) functional in achieving work goals, (b) reduce job demands and

the associated physiological and psychological costs, and (c) stimulate personal growth, learning and development (Bakker & Demerouti, 2007). Job resources widely mentioned in the literature include autonomy, social support, feedback and role clarity (Bakker, Ten Brummelhuis, Prins & Van der Heijden, 2011; Demerouti, Bakker & Fried, 2012; Hu, Schaufeli & Taris, 2011). As explained by Els et al. (article 1 of this thesis), POSSU and POSDI are considered to be job resources.

The JD-R model further specifies how well-being is affected by job demands and job resources through two underlying psychological processes: an energetic process and a motivational process. The energetic process assumes that high job demands exhaust an individual's physical and psychological resources, causing burnout, which, in the long run, is associated with health problems (Bakker, Demerouti & Schaufeli, 2003; Demerouti et al., 2001; Schaufeli & Bakker, 2004). The motivational process proposes that job resources, due to their motivational potential, contribute to work engagement, which, in turn, leads to positive organisational outcomes such as organisational commitment (Demerouti et al., 2001; Schaufeli & Bakker, 2004). For the purpose of this study, the motivational process is relevant to the influence of POSSU and POSDI on work engagement.

### **The relationship between POSSU, POSDI and work engagement**

Drawing on the JD-R model described above, when employees are given the support by the organisation to use their strengths and improve their deficits in the workplace, it may lead to increased levels of work engagement (Harter, Schmidt & Hayes, 2002; Lockwood, 2007). This expected relationship can be explained by considering the nature of strengths use. Using one's strengths may energise you (Biswas-Diener, 2010), since these strengths are believed to be a natural talent and would not be requiring extra effort. Therefore, it is expected that strengths use may increase employees' levels of vigour. Furthermore, one may expect that using one's strengths may create positive affect. In addition, individuals find it pleasurable to engage in activities where they can use their talents (Biswas-Diener, 2010; Wood, Linley, Maltby, Kashdan & Hurling, 2011). This positivity may also be prevalent when strengths are used at work, and this may influence individuals' attitude towards their jobs positively (i.e. increase their levels of dedication).

With regard to POSDI, having the opportunity and support to improve one's weaknesses may leave employees feeling optimistic and may create a prospect for increased future performance due to the mastery of new skills. This may leave them feeling energised and excited (i.e. feeling more vigorous). Similarly, the willingness to invest in the deficit improvement of employees may leave these employees feeling valued by the organisation (Santos & Stuart, 2003). This, in turn, may leave them feeling more positive about their jobs (i.e. feel more dedicated). Therefore, it is expected that POSSU and POSDI will lead to higher levels of work engagement.

Despite expecting POSSU to influence PBSU through work engagement, and POSDI to influence PBDI through work engagement, it is also expected that a direct relationship exists between POSSU and PBSU and between POSDI and PBDI. This is supported by Els et al. (article 1 of this thesis) who argue that when employees have a supportive organisational environment where they can use their strengths and improve their deficits, employees may have the confidence to also engage in proactive behaviour to use their strengths and improve their deficits. It can reasonably be expected that when employees are given the opportunity to use their strengths (i.e. POSSU), they will be more likely to do so (i.e. engage in PBSU). The same holds true that when employees believe their organisation is supportive of them developing their weaknesses (i.e. POSDI), they may be more inclined to look for opportunities where they can improve their deficits (i.e. PBDI).

### **The relationship between work engagement and proactive behaviour (PBSU and PBDI)**

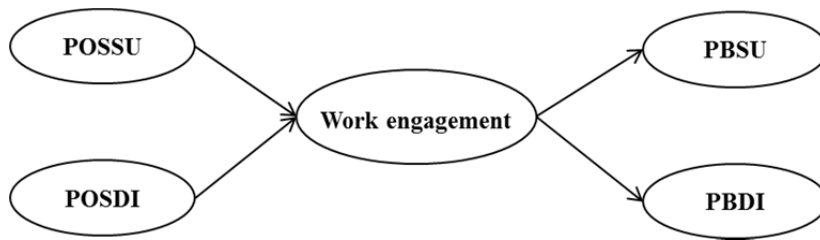
The relationship between work engagement and proactive behaviour has been investigated to a limited extent. As previously mentioned, research has shown that individuals with high work engagement tend to also engage in self-starting, proactive behaviour at work. For example, Hakanen et al. (2008) found that work engagement predicted personal initiative (which is a characteristic of proactivity; Crant, 2000; Sonnentag, 2003). These authors argue that when experiencing a positive state of emotional and motivational fulfilment at work, such as work engagement, employees may be more likely to display a willingness to take initiative in their work. Schaufeli and Salanova (2008) also found that individuals with high levels of engagement are likely to display proactive behaviour. They claim that work engagement has a motivating potential that ensures goal-oriented behaviour and persistence in attaining objectives; and this, along with high levels of energy (i.e. vigour) and a positive



attitude towards one's job (i.e. dedication) may increase proactive work behaviour. The same arguments were followed in a study by Sonnentag (2003) that for individuals to engage in proactive behaviour they need to be positive about their work, be dedicated to their job, and consider their work to be worth the extra effort. The results of her research confirmed that work engagement significantly predict proactive behaviour.

In line with these studies, it is also possible to argue that work engagement may be a predictor of PBSU and PBDI (as two types of proactive behaviour). This argument is supported by the assumption that when employees enjoy their work and care about their job (i.e. dedication), they will be expected to be willing to exert extra effort in work-related activities to keep their work conditions positive (Bakker, 2011; Sonnentag, 2003), of which the latter may include opportunities to use their strengths and improve their deficits. Furthermore, to engage in proactive behaviour at work, it is necessary for employees to have the energy (i.e. vigour) to exert extra effort in additional activities (Sonnentag, 2003) such as strengths use and deficit improvement. Therefore, it can be expected that when employees experience higher levels of vigour and dedication (i.e. work engagement), they will also be more motivated to engage in proactive behaviour to use their strengths and improve their deficits at work (i.e. PBSU and PBDI).

It is also necessary to investigate the possible mediating effect of work engagement between POSSU/POSDI and PBSU/PBDI. Considering the argued relationships between these constructs, it can be argued that if POSSU leads to work engagement and work engagement leads to PBSU, then work engagement acts as a mediator between POSSU and PBSU. Similarly, if POSDI leads to work engagement and work engagement leads to PBDI, then work engagement acts as a mediator between POSDI and PBDI. In their study, Salanova and Schaufeli (2008) confirmed that work engagement mediated the relationship between job resources and proactive behaviour. We can therefore also expect that work engagement will mediate the relationship between POSSU and POSDI (job resources) and PBSU and PBDI (proactive behaviour). To elaborate on this, it is therefore expected that POSSU influences PBSU through work engagement. Consequently, when employees feel they can use their strengths at work, they may tend to feel more engaged (vigorous and dedicated) in their work, which, in turn, would drive them to exert more effort in their jobs through proactively seeking opportunities to use their strengths. The same logic follows deficit improvement. This model is depicted in Figure 1.



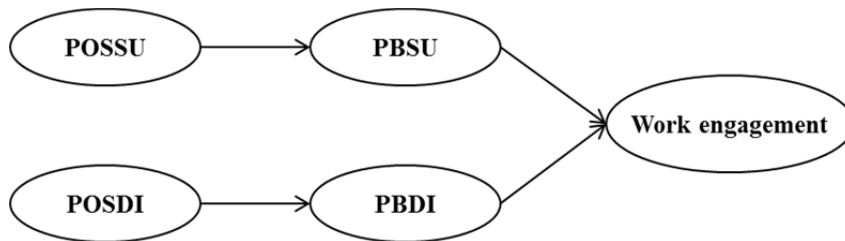
*Figure 1: Work engagement as predictor of PBSU and PBDI and possible mediator between POSSU and PBSU and POSDI and PBDI*

Contrary to the above research and arguments, the reversed relationships between proactive behaviour and work engagement may also be possible. A recent study by Bakker et al. (2012) has found that proactive behaviour significantly predicted work engagement. In this study, the authors found that individuals who demonstrate proactivity in their work tended to adapt their work environment, and specifically their job demands and job resources, to create a better congruence between themselves and their jobs, a process termed job crafting (Tims & Bakker, 2010). This, in turn, has led to higher work engagement.

Consistent with the above research results and arguments, similar arguments may be posed that PBSU and PBDI (as two types of proactive behaviour) predict work engagement. It is proposed that employees who proactively use their strengths and improve their deficits at work may do so in an attempt to create a better fit between themselves and their jobs. They may consequently experience higher work engagement, as illustrated in a study by Warr and Inceoglu (2012), where they found that person-job fit is associated with high levels of work engagement. Moreover, using one's strengths at work makes employees feel good about themselves (Linley & Harrington, 2006), and similarly, mastering new skills at work (for example through developing one's deficits) may also elicit positive emotions from employees (Ben-Zur, 2002; Folkman & Moskowitz, 2000). These positive emotions or positive affect may result in higher work engagement (Bosman, Rothmann & Buitendach, 2005).

Following the arguments outlined above, it can be expected that if POSSU leads to PBSU and PBSU leads to work engagement, then PBSU acts as a mediator between POSSU and work engagement. Similarly, if POSDI leads to PBDI and PBDI leads to work engagement, then PBDI acts as a mediator between POSDI and work engagement. Therefore, when employees feel they have the support from the organisation to use their strengths at work, they may be

more likely to also engage in proactive behaviour to use their strengths. This proactive strengths use may lead to higher levels of work engagement. Similarly, employees who feel that their organisation supports them to use their strengths may likely engage in proactive deficit improvement at work, which, in turn, may lead to higher levels of work engagement. This model is depicted in Figure 2.



*Figure 2: Work engagement as outcome of PBSU and PBDI and PBSU and PBDI possible mediators between POSSU/POSDI and work engagement*

To conclude, based on the results of past research, two possible models depicting the relationships between POSSU, POSDI, PBSU, PBDI and work engagement can be specified. In model 1, work engagement is specified as an antecedent of PBSU and PBDI (and therefore a possible mediator between POSSU and PBSU and between POSDI PBDI). In model 2, proactive behaviour (PBSU and PBDI) is the predictor of work engagement (and therefore possible mediator between POSSU/POSDI and work engagement), as can be seen in the two structural models graphically depicted in Figure 1 and Figure 2 above).

From the above review of the literature, it is evident that the empirical support for proactive behaviour as an outcome of work engagement seems to be stronger, with more sound theoretical arguments for this relationship. At least three studies have found support for this argument (i.e. Hakanen et al., 2008; Schaufeli & Salanova, 2008; Sonnentag, 2003), as opposed to only one study that could be found that investigated the reversed relationship with work engagement as an outcome of proactive behaviour (Bakker et al., 2012). Therefore, it is hypothesised that the model where work engagement predicts PBSU and PBDI may be a superior model compared to the model where PBSU and PBDI predict work engagement (and work engagement is therefore the outcome).

H1: A structural model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI will be a better model compared to a structural model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement.

## **RESEARCH DESIGN**

### **The research approach**

A quantitative research approach was followed to achieve the objectives of this study. The research followed a cross-sectional survey design. Therefore, data was collected at one particular point in time (Salkind, 2009) by means of questionnaires. The study was descriptive and explanatory in nature. The primary purpose of descriptive research is to describe a phenomenon as it occurs, describing the characteristics of a particular individual, situation or a group. Explanatory research is aimed at determining the extent to which a phenomenon occurs, and the extent to which the phenomenon is associated with something else (Kothari, 2004).

### **Research participants and procedure**

Various organisations in the financial sector were targeted to participate in this study, including banks, insurance companies and accounting firms in Gauteng. Data was collected from a convenient availability sample ( $N = 378$ ). This sample was chosen based on convenience and accessibility to the researcher. The inclusion criteria that applied to this study were that participants had to be working in the financial industry in South Africa. Furthermore, it was important that all participants had a good command of the English language (i.e. at least grade 10), based on the participants' own evaluation of their English proficiency. The characteristics of the participants are displayed in Table 1 below.

**TABLE 1:** Characteristics of participants ( $N = 378$ )

<b>Item</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Gender	Female	225	59.50
	Male	149	39.40
Ethnicity	Asian	24	6.30
	Black	89	23.50
	Coloured*	59	15.60
	White	198	52.40
	Other	6	1.60
Home language	Afrikaans	146	38.60
	English	141	37.30
	Sepedi	19	5.10
	Sesotho	20	5.30
	Setswana	13	3.40
	Tshivenda	3	0.80
	isiZulu	13	3.40
	isiXhosa	10	2.60
	Xitsonga	6	1.60
	isiNdebele	1	0.30
	Other	2	0.50
Highest qualification	Grade 10	15	4.00
	Grade 11	12	3.20
	Grade 12	192	50.80
	Technical college diploma	37	9.80
	Technicon diploma	33	8.70
	University degree	40	10.60
	Post-graduate degree	44	11.60
Organisation tenure	0-5 years	205	54.20
	6-10 years	91	24.10
	11-20 years	44	11.60
	21-30 years	33	8.70
	31-40 years	3	0.80
	41-50 years	1	0.30
Job tenure	0-5 years	287	75.90
	6-10 years	64	16.90
	11-20 years	20	5.30
	21-30 years	4	1.10
	31-40 years	2	0.50

\* This is an official term in South Africa used to describe citizens of mixed ethnic origin.

The study population consisted of 59.50% females and 39.40% males. The mean age of the population was 37.08 years, with a standard deviation of 11.17. The population was diverse in terms of ethnicity, with the majority being white (52.40%) and black (23.50%). The majority of the participants were Afrikaans (38.60%) and English (37.30%), with African languages totalling 23% of the sample. Of the total sample, 7.20% did not complete high school, but obtained at least as Grade 10, 50.80% held a Grade 12 diploma, and 40.70% held a tertiary education qualification. Most of the participants have been in their current

organisation for five years or less (54.20%) and for six to ten years (24.10%). Finally, 75.90% of the population has been in their current job position for five years or less.

Written consent to collect the data was obtained from the management of all the participating organisations. The surveys were distributed by hand to those employees who were available at their respective workplaces at the given time of questionnaire distribution. In cases where it was preferred by the participants, a survey was available in electronic format, and was therefore sent to the participants via e-mail, and returned via e-mail to the researcher. As previous research has found support for measurement equivalence between paper-and-pencil surveys and computer-based surveys (Davis, 1999; Hardré, Crowson, Xie & Ly, 2006; Richman, Kiesler, Weisband & Drasgow, 1999), it was decided to allow for the two different modes of questionnaire administration. One limitation of this, however, is that the two modes of administration made it difficult to determine an accurate response rate of this study. The participants were allowed to complete the questionnaires at a time and place convenient to them. A letter explaining the purpose of the study was sent to all the participants, and informed consent was obtained from them. Participation was completely voluntary and participation could be withdrawn at any time. The participants were assured of the anonymity and confidentiality when reporting on the research results.

### **Measuring instruments**

*Biographical questionnaire:* A biographical questionnaire was used to determine the biographical characteristics of the participants, such as gender, ethnicity, home language, level of education, organisational tenure and job (position) tenure.

The newly developed *Strengths Use and Deficit Improvement Questionnaire* (SUDIQ): The SUDIQ was developed by Els et al. (article 1 of this thesis) and consists of perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI). A study by Els et al. (article 2 of this thesis), identified the biased items of the SUDIQ, and these items were excluded from this study. All dimensions were measured on a 7-point Likert scale ranging from 0 (never) to 6 (almost always). POSSU was measured with five items (e.g. This organisation makes the most of people's talents;  $\alpha = 0.94$ ). POSDI was measured with six items (e.g. In this organisation,

employees receive training to improve their weak points;  $\alpha = 0.92$ ). PBSU was measured with seven items (e.g. I use my strengths at work;  $\alpha = 0.92$ ) and PBDI (e.g. I engage in activities to develop my weak points at work;  $\alpha = 0.87$ ) was measured with five items (Els et al., in process; article 2 of this thesis).

*Utrecht Work Engagement Scale (UWES)*: Work engagement was measured by means of two dimensions of the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2002) and was used to measure vigour (six items; e.g. At my work, I feel I am bursting with energy) and dedication (five items; e.g. I am enthusiastic about my job). All items are measured on a seven-point frequency-rating scale, varying from 0 (never) to 6 (every day). The Cronbach's alpha coefficients range between 0.75 and 0.86 (Schaufeli et al., 2002). Sufficient Cronbach's alpha coefficients have also been obtained for vigour ( $\alpha = 0.73$ ) and dedication ( $\alpha = 0.85$ ) when used within the South African context (Mostert, Peeters & Rost, 2011).

### **Statistical analysis**

The data was analysed by means of the SPSS program (IBM SPSS, 2013) and Mplus 7.2 (Muthén & Muthén, 2014). The reliability of the instruments was assessed with Cronbach's alpha coefficients, with values larger than 0.70 indicating satisfactory internal consistency (Nunnally & Bernstein, 1994). Relationships between the variables were examined with Pearson correlations and cut-off points of 0.30 (medium effect) and 0.50 (large effect) were set for the practical significance of coefficients (Cohen, 1988). The confidence interval level for statistical significance was set at a value of 95% ( $p \leq 0.05$ ).

Confirmatory factor analysis (CFA) was conducted to assess the fit of the measurement model. Furthermore, structural equation modelling (SEM) was used to test the two competing structural mediation models. The goodness-of-fit of the models was tested using the traditional  $\chi^2$  statistic, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardised root mean square residual (SRMR). Although there is no consensus regarding the cut-off values for adequate fit (Lance, Butts & Michels, 2006), general guidelines were followed and fit was considered adequate if CFI and TLI values were larger than 0.90 (Byrne, 2010; Hoyle, 1995). An RMSEA value of 0.05 or less indicates a good fit, and values between 0.08 and 0.05 represent a moderately good model fit (Browne & Cudeck, 1993; Van de Schoot, Lugtig & Hox, 2012).

According to Hu and Bentler (1999), the SRMR value should ideally be smaller than 0.05. The Akaike information criterion (AIC) and sample adjusted Bayesian information criterion (BIC) were used to compare the fit of competing models, where the model with the lowest value suggests superior fit (Van de Schoot, et al., 2012). Conclusions regarding the model with the best fit will be based on the significance of the difference in  $\chi^2$  and by comparing the fit indices outlined above. Bootstrapping analysis was applied to determine the indirect or mediating effects for the best fitting model. Confidence intervals at the 95% level (Preacher & Hayes, 2008) applied and it was decided to set the bootstrapping at 5 000 draws. This implies that the indirect estimates of the model have been calculated by repeatedly resampling the data and estimating the indirect effect in each resampled dataset (Preacher & Hayes, 2008).

## **RESULTS**

The results of the statistical analysis are presented in this section, including the estimates of the measurement model, as well as the Pearson correlations, Cronbach's alpha coefficients of the measuring instruments and the results from the two competing models that were tested.

### **The measurement model**

Confirmatory factor analysis (CFA) was conducted to assess the factor structure of the measurement scales. The results for the measurement model suggested that the dimensions of the SUDIQ (POSSU, POSDI, PBSU and PBDI) fitted the data best as a distinct four-factor model ( $\chi^2 = 741.74$ ;  $df = 164$ ;  $p \leq 0.05$ ; AIC = 26115.04; BIC = 26390.37), compared to a one-factor model that included all four dimensions ( $\chi^2 = 3765.33$ ;  $df = 170$ ;  $p \leq 0.05$ ; AIC = 29126.63; BIC = 29376.94), a two-factor model (a) consisting of POSSU and POSDI as factor one and PBSU and PBDI as factor two ( $\chi^2 = 2478.76$ ;  $df = 169$ ;  $p \leq 0.05$ ; AIC = 27842.07; BIC = 28096.54), a two-factor model (b) consisting of POSSU and PBSU as factor one, and POSDI and PBDI as factor two ( $\chi^2 = 2909.82$ ;  $df = 169$ ;  $p \leq 0.05$ ; AIC = 28273.12; BIC = 28527.59). These results are presented in Table 2 below.



**TABLE 2:** Fit statistics for the hypothesised model and four competing models

Model	$\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	RMSEA	SRMR	AIC	BIC
One-factor	3765.33	170	0.00*	0.53	0.47	0.21	0.14	29126.63	29376.94
Two-factor (a)	2478.76	169	0.00*	0.70	0.66	0.17	0.10	27842.07	28096.54
Two-factor (b)	2909.82	169	0.00*	0.64	0.60	0.64	0.14	28273.12	28527.59
Four-factor	741.74	164	0.00*	0.92	0.91	0.08	0.04	26115.04	26390.37

$\chi^2$  = chi-square; *df* = degrees of freedom; *p* = statistical significance; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion

In addition, the results suggest no difference in the model fit of work engagement as a single-factor construct ( $\chi^2 = 278.24$ ; *df* = 44; *p* ≤ 0.05; AIC = 15230.60; BIC = 15367.92) or as a bi-dimensional construct consisting of vigour and dedication ( $\chi^2 = 274.90$ ; *df* = 43; *p* ≤ 0.05; AIC = 15229.26; BIC = 15370.74). It was, therefore, decided to draw on the correlation between the vigour and dedication dimensions to assist in a decision of a one-factor versus a two-factor model. The correlation coefficient between these two dimensions was found to be extremely high (*r* = 0.98), and therefore it was decided to continue subsequent analysis with work engagement as a one-factor model.

### Pearson correlations and Cronbach's alpha coefficients

The means<sup>1</sup>, standard deviations, Pearson correlations and Cronbach's alpha coefficients for the instruments are presented in Table 3.

**TABLE 3:** Correlation matrix (*r*) of the latent variables

Variable	Mean	SD	POSSU	POSDI	PBSU	PBDI	Engagement
POSSU	4.22	1.60	(0.92)				
POSDI	3.99	1.61	0.71	(0.90)			
PBSU	5.22	1.22	0.58	0.45	(0.87)		
PBDI	4.67	1.36	0.47	0.57	0.67	(0.92)	
Engagement	5.21	1.29	0.59	0.53	0.57	0.50	(0.92)

Note: All correlations were significant at *p* ≤ 0.01 ; *r* ≥ 0.30 is practically significant (medium effect); *r* ≥ 0.50 is practically significant (large effect). Cronbach's alpha coefficients ( $\alpha$ ) are presented on the diagonal in brackets.

<sup>1</sup> Please note that these are the means for the scales, and not the latent variables. In Mplus, the means for latent variables in cross-sectional models are set to standardised zero. According to Muthén (2010), one cannot compare the means of latent variables to other factor means because there is no basis for comparison (as would be the case in multi-group analysis).

The correlation results indicate that all four variables are statistically significantly correlated. More specifically, practically significant correlations were found between POSSU and POSDI ( $r = 0.71$ ; large effect), PBSU ( $r = 0.58$ ; large effect), PBSU ( $r = 0.47$ ; medium effect) and work engagement ( $r = 0.59$ ; large effect). POSDI was significantly correlated with PBSU ( $r = 0.45$ ; medium effect), PBDI ( $r = 0.57$ ; large effect) and work engagement ( $r = 0.53$ ; large effect). Practically significant correlations with large effects between PBSU ( $r = 0.57$ ) and PBDI ( $r = 0.50$ ) and work engagement were found. Finally, the correlations between PBSU and PBDI ( $r = 0.67$ ) were practically significant with a large effect. Although the correlation between POSSU and POSDI is relatively high ( $r = 0.71$ ), it is below the guideline of 0.80 (Field, 2000; Hinkle, Wiersma & Jurs, 2003), and the conceptual overlap between the variables is to be expected, as these two concepts share the characteristics of being job resources, and more specifically indicating a form of perceived organisational support. To assess the possibility of multicollinearity the variance inflation factor (VIF) was calculated. The results indicate a VIF of 1.82 for POSSU and 2.30 for POSDI, indicating a low risk of multicollinearity, since a VIF > 5 may indicate a risk (Rogerson, 2001).

### **The structural models**

Structural equation modelling was used to test the two competing structural models. The models were specified as follows:

- *Model 1:* For model 1, structural paths were included from POSSU and POSDI to work engagement, and from work engagement to PBSU and PBDI. Direct paths from POSSU to PBSU and from POSDI to PBDI were also included. Engagement was therefore the mediator in this model, with POSDI and PBDI the outcomes.
- *Model 2:* For model 2, structural paths were included from POSSU to PBSU and from POSDI to PBDI. Furthermore, paths were specified from PBSU and from PBDI to work engagement. Direct paths from POSSU and POSDI to and work engagement were also specified. Therefore, PBSU was specified as a mediator between POSSU and work engagement, and PBDI was specified as a mediator between POSDI and work engagement.

**TABLE 4:** Fit statistics for the structural models

Model	$\chi^2$	<i>df</i>	<i>p</i>	CFI	TLI	RMSEA	SRMR	AIC	BIC
Model 1	1362.85	519	0.00	0.92	0.91	0.07	0.05	39543.44	39976.28
Model 2	1421.28	428	0.00	0.91	0.90	0.07	0.10	41139.01	41552.01

$\chi^2$  = chi-square; *df* = degrees of freedom; *p* = statistical significance; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion

Based on the model results, it can be concluded that model 1 fitted the data better compared to model 2 ( $\Delta\chi^2 = 58.43$ ;  $\Delta df = 91$ ;  $p > 0.05$ ). In addition, various fit indices were considered to substantiate the latter. The results indicate that model 1 ( $\chi^2 = 1362.85$ ;  $df = 519$ ;  $p \leq 0.01$ ; AIC = 39543.44; BIC = 39976.28) has a better fit to the data compared to model 2 ( $\chi^2 = 1421.28$ ;  $df = 428$ ;  $p \leq 0.01$ ; AIC = 41139.01; BIC = 41552.01). A graphical representation of the best-fitting model (model 1) is presented in Figure 1.

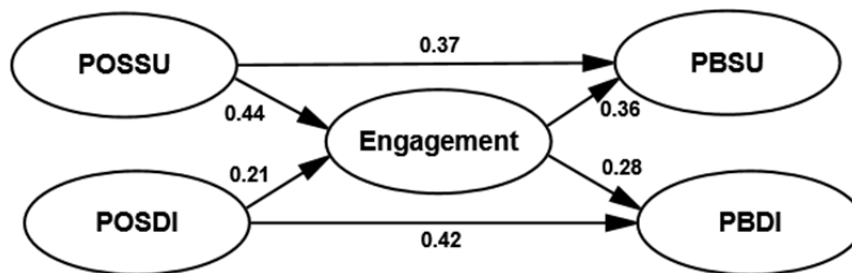


Figure 1: Structural paths of model 1

The structural paths for the best fitting model (model 1 as presented in Figure 1) are depicted in Table 5.

**TABLE 5:** Estimates ( $\beta$ ) of the direct structural paths in model 1

Structural path	Non-standardised $\beta$	Standardised $\beta$	S.E.	<i>p</i>
POSSU→Engagement	0.44	0.44	0.07	0.00*
POSSU→PBSU	0.29	0.37	0.05	0.00*
POSDI→Engagement	0.19	0.21	0.07	0.00*
POSDI→PBDI	0.42	0.42	0.05	0.00*
Engagement→PBSU	0.28	0.36	0.05	0.00*
Engagement→PBDI	0.31	0.28	0.05	0.00*

$\beta$  = beta; S.E. = standard error; *p* = statistical significance ( $p \leq 0,01$ )

\*  $p \leq 0.01$

The results suggest that all the structural paths examined between the variables were significant. Specifically, POSSU significantly predicted work engagement and PBSU ( $\beta = 0.37$ ). On the other hand, POSDI was a significant predictor of both work engagement and PBDI ( $\beta = 0.42$ ). The results also indicate that POSSU was a stronger predictor of work engagement compared to POSDI. In addition, work engagement was found to be a significant predictor of both PBSU and PBDI.

Following the above results, the potential indirect effects observed in model 1 (the best-fitting model) have been analysed. The results indicated that POSSU could have an indirect effect on PBSU through work engagement, and that POSDI could have an indirect effect on PBDI through work engagement. To assess the significance of the indirect effects, bootstrapping was used and it was decided to set the bootstrapping to 5 000 draws. The results of the indirect effects are presented in Table 6 below.

**TABLE 6:** Indirect effects for Model 1

<b>Indirect effects</b>	<b>Estimate</b>	<b>S.E.</b>	<b><i>p</i></b>	<b><i>Lower</i> 95% CI</b>	<b><i>Upper</i> 95% CI</b>
POSSU → PBSU	0.16	0.04	0.00*	0.08	0.23
POSDI → PBDI	0.06	0.02	0.02*	0.01	0.11

\*  $p \leq 0.05$ ; CI = Confidence intervals

The results suggest that all the indirect effects are significant ( $p \leq 0.05$ ; upper and lower CI did not include zero). More specifically, the indirect effect from POSSU to PBSU through work engagement was significant (0.16 (95% CI[0.08; 0.23])). The same holds true for the indirect effect from POSDI to PBDI through work engagement (0.06 (95% CI [0.01; 0.11])). It can therefore be concluded that work engagement is a significant mediator in the relationship between POSSU and PBSU and between POSDI and PBDI. Since the direct effect between POSSU and PBSU and between POSDI and PBDI was also found to be significant, it can be said that work engagement is a complimentary mediator (Zhao, Lynch & Chen, 2010) between POSSU and PBSU and between POSDI and PBDI.

Based on the results found in this study, it can be concluded that the hypothesised model is accepted.

## DISCUSSION

The main objective of this study was to compare two competing models in order to provide some preliminary evidence of the possible relationship between proactive behaviour (specifically PBSU and PBDI) and work engagement. In order to reach this objective, two competing models were tested: (a) a model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI; and (b) a model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement.

The two models were tested and compared with each other. The results indicated that the model hypothesising work engagement as the predictor of PBSU and PBDI (model 1) fitted the data significantly better compared to the model where engagement was specified as the outcome of PBSU and PBDI (model 2).

In this model (model 1), it was found that both POSSU and POSDI were significant predictors of work engagement. These results therefore indicate that in an environment where employees feel that their organisation supports their strengths use and encouraged the improvement of their deficits, these employees may experience increased levels of work engagement. These results are in line with previous research (Minhas, 2010; Sonnentag, 2003; Stander & Mostert, 2013), which indicated that employees who applied their strengths in their job experienced higher levels of work engagement. Similarly, previous research found that employees who engaged in training opportunities to address their weaknesses experienced high work engagement (Mone, Eisinger, Guggenheim, Price & Stine, 2011; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). These results are not surprising as one would expect that employees who are provided with the desired development opportunities, and who feel that their strengths and contributions are valued by the organisation may experience a positive effect. They may feel more valued by the organisation, have higher energy levels and are more likely to enjoy their work.

An interesting finding in the current study worth noting is that POSSU seems to be a stronger predictor of work engagement compared to POSDI. Therefore, it seems as if in the financial

industry when employees have the opportunities to use their strengths, employees are more likely to be energised by their work (i.e. vigour) and feel enthusiastic about their work (i.e. dedication). Contrasting findings were reported by Els et al. (article 3 of this thesis), where it was found that, among educators, POSDI was a stronger predictor of work engagement than POSSU. In this case, it can be argued that the nature of the work environment may influence the relationship between POSSU/POSDI and work engagement. Among teachers in a learning environment, development (of for example deficits) may be more prominent, whereas in a financial setting, precision, quality and competence (in line with individuals' strengths) may be considered more essential.

In the current study, it was also found that the model where work engagement was specified as the antecedent, and not the outcome, of PBSU and PBDI fitted the data best. This can give an indication that proactive behaviour (and specifically PBSU and PBDI) is a result of high work engagement levels. It can therefore be expected that employees who are enthusiastic about their jobs (i.e. are dedicated) and who are energised by their work (i.e. are vigorous) may invest extra effort at work by seeking opportunities to use their strengths and improve their deficits. This corresponds with the results of previous studies that confirmed that work engagement predicts proactive behaviour (Hakanen et al., 2008; Sonnentag, 2003). These studies argue that employees who are experiencing their work as positive and fulfilling may be inclined to take initiative in their jobs. The energy and enthusiasm associated with work engagement leverage the willingness of employees to exert extra effort in their work through proactive behaviour. In a similar fashion, it can accordingly be asserted that the increased levels of energy (vigour) and positivity (dedication) as a result of work engagement result in employees feeling more willing to invest time and effort in actively looking for opportunities to use their strengths and improve their deficits.

In addition, positive relationships between POSSU and PBSU, and between POSDI and PBDI were also confirmed. The results indicate that when employees believe that their organisation supports them to use their strengths and improve their deficits, they will be more likely to engage in proactive behaviour of strengths use and deficit improvement themselves. This confirms the assumptions of the theory by Els et al. (article 1 of this thesis), and is in line with the results of previous studies (Beukes, 2015; Botha & Mostert, 2014). It is argued that when organisations are supportive of strengths use and deficit improvement, employees become aware that the organisation values strengths use and deficit improvement. In turn,

employees are more inclined to engage in behaviour that they know will ensure the approval of the organisation. Therefore, employees may feel more at ease to also focus on things that they know the organisation values, which is in this case looking for opportunities in their job where they can engage in strengths use and deficit improvement activities.

Based on the best-fitting model (model 1 in this study), it was reasonable to expect that work engagement acts as a mediator between POSSU and PBSU and between POSDI and PBDI. The results indicate that the indirect effects of the mediation analyses were significant. Work engagement was found to mediate the relationship between POSSU and PBSU through an indirect mediation. This implies that the direct relationship between POSSU may influence PBSU through work engagement. Work engagement acts as a complimentary mediator between POSDI and PBDI with the direct relationship between POSDI and PBDI remaining significant when work engagement was introduced. These results therefore imply that when employees believe their organisation to support them in using their strengths and improving their deficits at work, they are likely to also display proactive behaviour to use their strengths and improve their deficits. This is encouraged by the fact that they experience their work as meaningful and enjoyable. Furthermore, the increased levels of vitality because of work engagement provide employees with sufficient energy to invest extra effort in their job through proactive behaviours.

In conclusion, the results in this study found that a model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI fitted the data better compared to a model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement. This result is not surprising, as it may be argued that it is more likely that a positive work environment (i.e. POSSU and POSDI) may stimulate a change in employee attitude (i.e. work engagement), which, in turn, may change employee behaviour (i.e. PBSU and PBDI), than it would be for a positive work environment (i.e. POSSU and POSDI) to change employee behaviour (i.e. PBSU and PBDI), which may then change employee attitudes (i.e. work engagement). These results are in line with previous research that found job resources such as autonomy and learning opportunities (work environment) to influence work engagement (attitude), which consequently influenced performance (behaviour; Bakker & Bal, 2010). Similarly, a study by Babcock-Roberson and Strickland (2010) revealed that

work engagement (attitude) mediated the relationship between charismatic leadership (work environment) and organisational citizenship behaviour (behaviour).

The results of this study provide evidence of the importance of creating a work environment where employees can apply their talents, and where they can develop their weaknesses to contribute to their work engagement levels. This, in turn, will then create a motivating process where employees will tend to actively look for opportunities in their work to apply their strengths and improve their deficits. It can be expected that this positive cycle may ultimately assist the organisation to achieve its objectives through a skilled, competent and engaged workforce.

### **Limitations and recommendations**

The biggest limitation of this study was the use of a cross-sectional design. A cross-sectional research design limits the researcher in the sense that no inferences can truly be made regarding the causal relationships between variables (Gravetter & Forzano, 2009). This study provides a preliminary view of the relationship between work engagement and proactive behaviour (PBSU and PBDI) and found evidence for a structural model with PBSU and PBDI as outcomes of work engagement rather than as antecedents of work engagement. However, these results should merely be considered as preliminary evidence. Longitudinal research will allow future research to make inferences of causality based on the behaviour of PBSU, PBDI and work engagement. For example, longitudinal research will allow one to assess one individual and changes in his or her PBSU, PBDI and work engagement over time (Gravetter & Forzano, 2009). Therefore, it is strongly suggested that the relationships found in this study be corroborated through longitudinal research.

Another limitation was that a convenient sampling strategy was followed in this study, which limits the generalisability of the research results. It is therefore recommended that future studies investigating similar constructs follow a probability sampling strategy. Similarly, the sample size of this study was relatively small with a low response rate. It is accordingly suggested that future studies should target a larger population to confirm the results in this study. Moreover, it may be insightful to industries other than the financial work environment to investigate whether similar relationships between strengths use and deficit improvement with work engagement exist.



In line with the above, it is recommended that future research should employ a longitudinal research design to empirically investigate the causal relationships between POSSU, POSDI, PBSU, PBDI and work engagement. Such studies may also be focused on drawing a more representative sample. In addition, the results of this study indicate that there is a possibility that the nature of the work (i.e. sector or industry) may influence employees' perceptions regarding strengths use and deficit improvement. Specifically, it seems as if different contexts do not necessarily place the same emphasis on strengths use and deficit improvement. Therefore, it is suggested that future research should explore the relationships investigated in this study also in different organisational settings. In addition, as POSSU, POSDI, PBSU and PBDI are newly conceptualised constructs in the positive psychology tradition, it is suggested that future research should further explore the relationships between these four constructs with other work-related outcomes.

The importance of strengths use and deficit improvement for organisations is well illustrated in this study. Firstly, the positive relationships between POSSU and POSDI with work engagement suggest that organisations that support their employees to use their strengths and improve their deficits may be rewarded with employees who are vigorous and enthusiastic about their job. The benefits of increased work engagement are of course well documented and include positive outcomes such as increased job satisfaction (Schaufeli & Salanova, 2008), higher levels of commitment and lower intentions to leave (Schaufeli & Bakker, 2004), and job performance (Schaufeli et al., 2006). Consequently, investing in employees' strengths and deficits may result in higher work engagement, which may, in turn, yield a range of positive outcomes for the individual.

Similarly, this research illustrates that another possible outcome of work engagement is proactive behaviour. Specifically, the current study reveals that work engagement is associated with higher proactive behaviour towards strengths use and deficit improvement. Therefore, ensuring high levels of work engagement through increased POSSU and POSDI (as suggested above) results in employees taking responsibility for their own strengths use and deficit improvement. These employees will realise the value organisations place on strengths use and deficit improvement, and may, in turn, reward the organisation with their proactivity in this regard.

The above discussion urges organisations to invest in the training and development of their employees, while simultaneously providing them with the scope to apply their strengths in their jobs, without neglecting either strengths or deficits. Of course, it is not merely work engagement that may be related to strengths use and deficit improvement. It is suggested that organisations assess other positive outcomes resulting from the optimal use of employees' strengths and the improvement of their deficits.

## **AUTHOR'S NOTE**

The first author, Me. Crizelle Els fulfilled the role of the primary researcher, and this study formed part of her PhD research. She was responsible for the conceptualisation of the article, collecting of the data, the statistical analysis of the data in consultation with a statistical consultant, the interpretation of the research results, and the writing of the article. Prof. Karina Mostert acted as promoter to this study, whereas Dr Marianne van Woerkom acted as co-promoter. Prof. Mostert and Dr Van Woerkom played an advisory role in this study and assisted in the conceptualisation of the study and the writing of the research article.

## **ACKNOWLEDGEMENTS**

The material in this article is based on work that the National Research Foundation (NRF) supported. Any opinions, findings, conclusions or recommendations in this article are those of the author(s). Therefore, the NRF does not accept any liability for them.

## REFERENCES

- Aguinis, H., Joo, H., & Gottfredson, R. K. (2011). Why we hate performance management: And why we should love it. *Business Horizons*, 54(6), 503-507. doi:10.1016/j.bushor.2011.06.001
- Ashford, S. J., & Black, J. S. (1996). Proactivity during organizational entry: Antecedents, tactics, and outcomes. *Journal of Applied Psychology*, 81(2), 199-214. doi: 10.1037/0021-9010.81.2.199
- Ashford, S. J., Blatt, R., & Van de Walle, D. (2003). Reflections on the looking glass: A review of research on feedback-seeking behaviour in organizations. *Journal of Management*, 29(6), 769-799. doi: 10.1016/S0149-2063(03)00079-5
- Babcock-Roberson, M. E., & Strickland, O. J. (2010). The relationship between charismatic leadership, work engagement, and organizational citizenship behaviors. *The Journal of Psychology*, 144(3), 313-326. doi: 10.1080/00223981003648336
- Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, 20(4), 265-269. doi: 10.1177/0963721411414534
- Bakker, A. B., & Bal, M. P. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology*, 83(1), 189-206. doi: 10.1348/096317909X402596
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309-328. doi: 10.1108/02683940710733115
- Bakker, A. B., & Geurts, S. A. (2004). Toward a dual-process model of work-home interference. *Work and Occupations*, 31(3), 345-366. doi: 10.1177/0730888404266349
- Bakker, A., Demerouti, E., & Schaufeli, W. (2003). Dual processes at work in a call centre: An application of the Job Demands-Resources model. *European Journal of Work and Organizational Psychology*, 12(4), 393-417. doi: 10.1080/13594320344000165
- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the Job Demands-Resources model to predict burnout and performance. *Human Resource Management*, 43(1), 83-104. doi: 10.1002/hrm.20004
- Bakker, A. B., Demerouti, E., De Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior*, 62(2), 341-356. doi: 10.1016/S0001-8791(02)00030-1

- Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress*, 22(3), 187-200. doi: 10.1080/02678370802393649
- Bakker, A. B., Ten Brummelhuis, L. L., Prins, J. T., & Van der Heijden, F. M. (2011). Applying the Job Demands–Resources model to the work–home interface: A study among medical residents and their partners. *Journal of Vocational Behavior*, 79(1), 170-180. doi: 10.1016/j.jvb.2010.12.004
- Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, 65(10), 1359-1378. doi: 10.1177/0018726712453471
- Bartlett, K. R. (2001). The relationship between training and organizational commitment: A study in the health care field. *Human Resource Development Quarterly*, 12(4), 335-352. doi: 10.1002/hrdq.1001
- Ben-Zur, H. (2002). Coping, affect and aging: The roles of mastery and self-esteem. *Personality and Individual Differences*, 32(2), 357-372. doi:10.1016/S0191-8869(01)00031-9
- Beukes, L. (2015). Strengths-based development and intention to leave: The role of psychological empowerment and work engagement amongst teachers (Unpublished master's dissertation). North-West University, Potchefstroom, South Africa.
- Biswas-Diener, R. (2010). *Practicing positive psychology coaching: Assessment and strategies for succes*. Hoboken, NJ: John Wiley & Sons Inc.
- Bosman, J., Rothmann, S., & Buitendach, J. H. (2005). Job insecurity, burnout and work engagement: The impact of positive and negative affectivity. *SA Journal of Industrial Psychology*, 31(4), 48-56. doi: 10.4102/sajip.v31i4.199
- Botha, C., & Mostert, K. (2014). A structural model of job resources, organisational and individual strengths use and work engagement. *SA Journal of Industrial Psychology*, 40(1), 01-11. doi:10.4102/sajip.v40i1.1135
- Bouskila-Yam, O., & Kluger, A. N. (2011). Strength-based performance appraisal and goal setting. *Human Resource Management Review*, 21(2), 137-147. doi:10.1016/j.hrmr.2010.09.001
- Brown, J. (2002). Training needs assessment: A must for developing an effective training program. *Public Personnel Management*, 31(4), 569-578. doi: 10.1177/009102600203100412

- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. Scott Long (Eds.), *Testing structural equation models* (pp. 1-9). Newbury Park, CA: Sage Publications.
- Buckingham, M., & Clifton, D. O. (2001). *Now, discover your strengths*. New York, NY: Free Press.
- Byrne, B. (2010). *Structural equation modeling with AMOS*. New York, NY: Routledge.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Collins English Dictionary. (2014). Retrieved from <http://www.collinsdictionary.com/>
- Crant, J. M. (2000). Proactive behaviour in organizations. *Journal of Management*, 26(3), 435-462. doi: 10.1177/014920630002600304
- Davis, R. N. (1999). Web-based administration of a personality questionnaire: Comparison with traditional methods. *Behavior Research Methods, Instruments, & Computers*, 31(4), 572-577. doi: 10.3758/BF03200737
- Demerouti, E., Bakker, A. B., & Fried, Y. (2012). Work orientations in the job demands-resources model. *Journal of Managerial Psychology*, 27(6), 557-575. doi: 10.1108/02683941211252428
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The Job Demands-Resources model of burnout. *Journal of Applied Psychology*, 86(3), 499-512. doi: 10.1037/0021-9010.86.3.499
- Dysvik, A., & Kuvaas, B. (2008). The relationship between perceived training opportunities, work motivation and employee outcomes. *International Journal of Training and Development*, 12(3), 138-157. doi: 10.1111/j.1468-2419.2008.00301.x
- Field, A. P. (2000). *Discovering statistics using SPSS for Windows: Advanced techniques for the beginner*. London, England: SAGE Publications.
- Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist*, 55(6), 647-654. doi: 10.1037//0003-066X.55.6.647
- Frese, M., & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. *Research in Organizational Behaviour*, 23(4), 133-187. doi: 10.1016/S0191-3085(01)23005-6
- Frese, M., Kring, W., Soose, A., & Zempel, J. (1996). Personal initiative at work: Differences between East and West Germany. *Academy of Management Journal*, 39(1), 37-63. doi: 10.2307/256630

- García, M. Ú. (2005). Training and business performance: The Spanish case. *The International Journal of Human Resource Management*, 16(9), 1691-1710. doi: 10.1080/09585190500239341
- González-Romá, V., Schaufeli, W. B., Bakker, A. B., & Lloret, S. (2006). Burnout and work engagement: Independent factors or opposite poles? *Journal of Vocational Behavior*, 68(1), 165-174. doi:10.1016/j.jvb.2005.01.003
- Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review*, 2(2), 143-153.
- Gravetter, F. J., & Forzano, G. (2009). *Research methods for the behavioral sciences* (3rd ed.). Belmont, CA: Wadsworth.
- Hakanen, J. J., Perhoniemi, R., & Toppinen-Tanner, S. (2008). Positive gain spirals at work: From job resources to work engagement, personal initiative and work-unit innovativeness. *Journal of Vocational Behavior*, 73(1), 78-91. doi:10.1016/j.jvb.2008.01.003
- Hardré, P. L., Crowson, H. M., Xie, K., & Ly, C. (2006). Testing differential effects of computer-based, web-based and paper-based administration of questionnaire research instruments. *British Journal of Educational Technology*, 38(1), 5-22. doi: 10.1111/j.1467-8535.2006.00591
- Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87(2), 268-279. doi: 10.1037//0021-9010.87.2.268
- Hinkle, D. E., Wiersma, W., & Jurs, S. G. (2003). *Applied statistics for the behavioral sciences*. Boston, MA: Houghton Mifflin Company.
- Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage.
- Hu, L., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus structural equation modeling, *A Multidisciplinary Journal*, 6(1), 1-55. doi: 10.1080/10705519909540118
- Hu, Q., Schaufeli, W. B., & Taris, T. W. (2011). The Job Demands–Resources model: An analysis of additive and joint effects of demands and resources. *Journal of Vocational Behavior*, 79(1), 181-190. doi:10.1016/j.jvb.2010.12.009
- IBM SPSS. (2013). SPSS 22.0 [computer software]. Chicago, IL: SPSS.

- Kaiser, R. B., & Overfield, D. V. (2011). Strengths, strengths overused, and lopsided leadership. *Consulting Psychology Journal: Practice and Research*, 63(2), 89-109. doi: 10.1037/a0024470
- Kaslow, N. J., Falender, C. A., & Grus, C. L. (2012). Valuing and practicing competency-based supervision: A transformational leadership perspective. *Training and Education in Professional Psychology*, 6(1), 47-54. doi: 10.1037/a0026704
- Kothari, C. R. (2004) *Research Methodology: Methods and Techniques*. New Delhi, India: New Age International Publishers.
- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria what did they really say? *Organizational Research Methods*, 9(2), 202-220. doi: 10.1177/1094428105284919
- Linley, A. (2008). *Average to A+: Realising strengths in yourself and others*. London, England: CAPP Press.
- Linley, P. A., & Harrington, S. (2006). Strengths coaching: A potential-guided approach to coaching psychology. *International Coaching Psychology Review*, 1(1), 37-46.
- Lockwood, N. R. (2007). Leveraging employee engagement for competitive advantage. *Society for Human Resource Management Research Quarterly*, 1, 1-12.
- Mauno, S., Kinnunen, U., Mäkikangas, A., & Feldt, T. (2010). Job demands and resources as antecedents of work engagement: A qualitative review and suggestions for future research. In S. Albrecht (Eds.), *Handbook of employee engagement: Perspectives, issues, research and practice* (pp. 111–128). Cheltenham, England: Elgar.
- Meyers, M.C., Van Woerkom, M. & De Reuver, R.S.M., Bakk, Z., & Oberski, D.L. (2015). Enhancing psychological capital and personal growth initiative: Working on strengths or deficiencies. *Journal of Counseling Psychology*, 62(1), 50-62. doi: 10.1037/cou0000050
- Minhas, G. (2010). Developing realised and unrealised strengths: Implications for engagement, self-esteem, life satisfaction and well-being. *Assessment and Development Matters*, 2(1), 12-16.
- Mone, E., Eisinger, C., Guggenheim, K., Price, B., & Stine, C. (2011). Performance management at the wheel: driving employee engagement in organizations. *Journal of Business and Psychology*, 26(2), 205-212. doi: 10.1007/s10869-011-9222-9
- Morrison, E. W. (1993). Longitudinal study of the effects of information seeking on newcomer socialization. *Journal of Applied Psychology*, 78(2), 173-183. doi: 10.1037/0021-9010.78.2.173

- Morrison, E. W., & Phelps, C. C. (1999). Taking charge at work: Extrarole efforts to initiate workplace change. *Academy of Management Journal*, 42(4), 403-419. doi: 10.2307/257011
- Mostert, K., Peeters, M., & Rost, I. (2011). Work-home interference and the relationship with job characteristics and well-being: A South African study among employees in the construction industry. *Stress and Health*, 27(3), e238-e251. doi: 10.1002/smi.1374
- Muthén, L. K. (2010). *Confirmatory factor analysis: Means for latent variables* [Online forum comment]. Retrieved from <http://www.statmodel.com/discussion/messages/9/5825.html?1409874539>
- Muthén, L. K., & Muthén, B. O. (2014). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén,
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw-Hill.
- Organ, D. W. (1988). *Organizational citizenship behaviour: The good soldier syndrome*. Lexington, MA: Lexington Books.
- Oxford English Dictionary. (2014). Retrieved from <http://www.oxforddictionaries.com/>
- Park, N., Peterson, C., & Seligman, M. E. (2004). Strengths of character and well-being. *Journal of Social and Clinical Psychology*, 23(5), 603-619. doi: 10.1521/jscp.23.5.603.50748
- Parker, S. K. (2000). From passive to proactive motivation: The importance of flexible role orientations and role breadth self-efficacy. *Applied Psychology: An International Review*, 49(3), 447-469. doi: 10.1111/1464-0597.00025
- Pfeffer, J., & Sutton, R. I. (2006). Evidence-based management. *Harvard Business Review*, 84(1), 62-74.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891. doi: 10.3758/BRM.40.3.879
- Proctor, C., Maltby, J., & Linley, P. A. (2011). Strengths use as a predictor of well-being and health-related quality of life. *Journal of Happiness Studies*, 12(1), 153-169. doi: 10.1007/s10902-009-9181-2
- Richman, W. L., Kiesler, S., Weisband, S., & Drasgow, F. (1999). A meta-analytic study of social desirability distortion in computer-administered questionnaires, traditional questionnaires, and interviews. *Journal of Applied Psychology*, 84(5), 754-775. doi: 10.1037/0021-9010.84.5.754



- Rogerson, P. A. (2001). *Statistical methods for geography*. London: Sage.
- Rust, T., Diessner, R., & Reade, L. (2009). Strengths only or strengths and relative weaknesses? A preliminary study. *The Journal of Psychology: Interdisciplinary and Applied*, *143*(5), 465-476. doi: 10.3200/JRL.143.5.465-476
- Salanova, M., & Schaufeli, W. B. (2008). A cross-national study of work engagement as a mediator between job resources and proactive behaviour. *The International Journal of Human Resource Management*, *19*(1), 116-131. doi:10.1080/09585190701763982
- Salkind, N.J. (2009). *Exploring research*. (7th Ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Santos, A., & Stuart, M. (2003). Employee perceptions and their influence on training effectiveness. *Human Resource Management Journal*, *13*(1), 27-45. doi: 10.1111/j.1748-8583.2003.tb00082.x
- Schaufeli, W. B. & Salanova, M. (2008). Enhancing work engagement through the management of human resources. In K. Näswall, M. Sverke, & J. Hellgren (Eds.), *The individual in the changing working life* (pp. 380-404). Cambridge, UK: Cambridge University Press.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, *25*(3), 293-315. doi: 10.1002/job.248
- Schaufeli, W. B., & Bakker, A. B. (2010). The conceptualization and measurement of work engagement. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp.10-24). New York, NY: Psychology Press.
- Schaufeli, W. B., & Salanova, M. (2007). Work engagement: An emerging psychological concept and its implications for organizations. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki (Eds.), *Research in social issues in management: Managing social and ethical issues in organizations* (Vol. 5, pp. 135-177). Greenwich, CT: Information Age Publishers.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, *3*(1), 71-92. doi: 10.1023/A:1015630930326
- Schaufeli, W. B., Taris, T. W., & Bakker, A. B. (2006). Dr. Jekyll and Mr. Hyde: On the differences between work engagement and workaholism. In R. Burke (Ed.), *Work hours and work addiction* (pp. 193–252). Northampton, UK: Edward Elgar.

- Schmidt, S. W. (2007). The relationship between satisfaction with workplace training and overall job satisfaction. *Human Resource Development Quarterly*, 18(4), 481-498. doi: 10.1002/hrdq.1216
- Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York, NY: Doubleday.
- Sirmon, D. G., Hitt, M. A., Arregle, J. L., & Campbell, J. T. (2010). The dynamic interplay of capability strengths and weaknesses: Investigating the bases of temporary competitive advantage. *Strategic Management Journal*, 31(13), 1386-1409. doi: 10.1002/smj.893
- Sonnetag, S. (2003). Recovery, work engagement, and proactive behaviour: A new look at the interface between nonwork and work. *Journal of Applied Psychology*, 88(3), 518. doi: 10.1037/0021-9010.88.3.518
- Stander, F. W., & Mostert, K. (2013). Assessing the organisational and individual strengths use and deficit improvement amongst sport coaches. *SA Journal of Industrial Psychology*, 39(2), 1-13. doi: 10.4102/sajip.v39i2.1160
- Stander, F. W., Mostert, K., & de Beer, L. T. (2014). Organisational and individual strengths use as predictors of engagement and productivity. *Journal of Psychology in Africa*, 24(5), 403-409. doi: 10.1080/14330237.2014.997007
- Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology*, 36(2), 1-9. doi: 10.4102/sajip.v36i2.841
- Van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology*, 9(4), 486-492. doi: 10.1080/17405629.2012.686740
- Van Woerkom, M., & Meyers, M. C. (2015). My strengths count! Effects of a strengths-based psychological climate on positive affect and job performance. *Human Resource Management*, 54(1), 81-103. doi: 10.1002/hrm.21623
- Warr, P., & Inceoglu, I. (2012). Job engagement, job satisfaction, and contrasting associations with person-job fit. *Journal of Occupational Health Psychology*, 17(2), 129-138. doi: 10.1037/a0026859
- Wood, A. M., Linley, P. A., Maltby, J., Kashdan, T. B., & Hurling, R. (2011). Using personal and psychological strengths leads to increases in well-being over time: A longitudinal study and the development of the strengths use questionnaire. *Personality and Individual Differences*, 50(1), 15-19. doi: 10.1016/j.paid.2010.08.004

- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, 26(2), 179-201. doi: 10.5465/AMR.2001.4378011
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behaviour*, 74(3), 235-244. doi: 10.1016/j.jvb.2008.11.003
- Zhao, X., Lynch, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197-206. doi: 10.1086/651257

## **CHAPTER 6**

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

In this final chapter, the conclusions of the study will be presented. The limitations and recommendations for future research and practice will also be discussed.

#### **6.1 CONCLUSIONS**

In recent years, positive psychology has shifted the focus from the negative to a stronger focus on the positive (Seligman & Csikszentmihalyi, 2000). Therefore, it is acknowledged that although individuals have deficits they need to improve, they also have strengths they can utilise for optimal functioning (Cameron, 2003; Carr, 2004). It can be argued that for employees to improve their deficits and use their strengths at work, they are dependent on the organisation to provide them with the necessary support in this regard. Once organisations provide employees with the supportive environment for strengths use and deficit improvement, individuals will likely proactively look for opportunities to use their strengths and improve their deficits at work. However, organisational support for strengths use and deficit improvement, and individual proactive behaviour towards strengths use and deficit improvement have not been clearly defined and conceptualised in the literature. Furthermore, the aforementioned cannot be empirically investigated due to a lack of a valid, reliable, unbiased and equivalent measuring instrument for the assessment of organisational and individual strengths use and deficit improvement. In addition to a lacking conceptualisation and measuring instrument, previous research has not investigated whether strengths use, deficit improvement or a combined approach focusing on both may yield more positive outcomes for the organisation, such as higher work engagement, learning and job satisfaction, and lower turnover intention. Similarly, the relationship between work engagement (a well-established positive psychology construct) with organisational support for strengths use and deficit improvement and specifically individuals' proactive strengths use and deficit improvement is largely unexplored in the literature.

This research aimed at addressing the above mentioned gaps in the literature by addressing the following general research objectives:

- To conceptualise a taxonomy of strengths use and deficit improvement and to develop and validate the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) that measures four constructs, namely perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI);
- To examine the item bias, structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ among South African ethnic groups;
- To examine whether POSSU, POSDI or a combination of these two will lead to the best organisational outcomes (i.e. work engagement, learning, job satisfaction and turnover intention); and
- To compare two competing models – one model with engagement as a predictor of PBSU and PBDI (and therefore a possible mediator between POSSU/POSDI and PBSU/PBDI) and another model where proactive behaviour (PBSU and PBDI) are the predictors of work engagement (and therefore possible mediators between POSSU/POSDI and work engagement).

These objectives were addressed in four research articles, each with their own set of specific objectives.

The general objective of research article 1 was to conceptualise a taxonomy of strengths use and deficit improvement and to develop and validate the Strengths Use and Deficit Improvement Questionnaire (SUDIQ). The first specific objective of this study was to conceptualise perceived organisational support for strengths use (POSSU), perceived organisational support for deficit improvement (POSDI), proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI).

In this study, it was suggested that strengths use and deficit improvement within an organisational context can manifest at the organisational and individual level. More specifically, in this study it was argued that, firstly, employees are dependent on their organisation to provide

support for strengths use and for deficit improvement. Secondly, it was argued that individuals also need to display proactive behaviour to use their strengths and improve their deficits at work. Following the above argument, this study conceptualised and defined four constructs relevant to strengths use and deficit improvement:

- Perceived organisational support for strengths use (POSSU): The extent to which employees perceive their organisation to be supportive of them using their strengths in the workplace.
- Perceived organisational support for deficit improvement (POSDI): The extent to which employees perceive their organisation to be supportive of them improving their deficits in the workplace.
- Proactive behaviour towards strengths use (PBSU): Employees' self-starting behaviour directed towards using their strengths in the workplace.
- Proactive behaviour towards deficit improvement (PBDI): Employees' self-starting behaviour directed towards improving their deficits in the workplace.

In addition to the above, POSSU and POSDI were conceptualised as job resources. This conceptualisation follows the conceptual overlap with other previously defined job resources, in that it is (a) functional in achieving work goals, (b) reduces job demands and the associated physiological and psychological costs, and (c) stimulates personal growth, learning and development (Bakker & Demerouti, 2007). PBSU and PBDI are regarded as proactive, self-starting behaviour as they are an indication of the extent to which employees themselves actively seek opportunities to use their strengths and improve their deficits.

Specific objective 2 of this article was addressed by developing an instrument, the Strengths Use and Deficit Improvement Questionnaire (SUDIQ), to measure POSSU, POSDI, PBSU and PBDI. By means of a pilot study and finally a validation study among a heterogeneous sample of working individuals, the final version of the SUDIQ consisted of POSSU, with seven items, POSDI, with eight items, PBSU, with seven items, and PBDI, with seven items.

Specific objective 3 of this study was to assess the reliability, construct validity, convergent validity and criterion-related validity of the SUDIQ in a heterogeneous working population in South Africa. The convergent validity of POSSU and POSDI was confirmed since a positive

relationship between POSSU and POSDI (conceptualised as job resources) with both autonomy and participation in decision-making (two well-known job resources found in the literature; Bakker & Demerouti, 2007) was found. Therefore, the conceptual overlap between these constructs was illustrated. PBSU and PBDI were positively related to self-efficacy, confirming the convergent validity of these two constructs. It can be argued that employees who use their own strengths and improve their deficits may experience a sense of confidence in his or her ability to cope with difficult tasks or problems (i.e. increased self-efficacy; Bandura, 1977).

The criterion validity of the SUDIQ was confirmed since POSSU, POSDI, PBSU and PBDI were positively related to vigour and dedication and negatively related to exhaustion and cynicism. One exception in this study was PBDI that was not significantly correlated with exhaustion. These results confirm the basic assumptions of the Job Demands-Resources (JD-R) model, which states that job resources are positively related to work engagement and negatively related to the dimensions of burnout, exhaustion and cynicism (Bakker, Demerouti & Euwema, 2005; Schaufeli, Salanova, González-Romá & Bakker, 2002; Schaufeli & Bakker, 2010). Furthermore, it was argued that strengths use and deficit improvement (and in the case of this study PBSU and PBDI) may yield a range of positive attitudes towards an employee's job. These positive emotions are likely to increase enthusiasm and energy, which are associated with work engagement (Langelaan, Bakker, Schaufeli & Van Doornen, 2006; Schaufeli & Salanova, 2007). Moreover, these positive feelings may reduce the negative effects of burnout (Erickson & Grove, 2007).

The development and validation of a measure of strengths use and deficit improvement by both the organisation and the employees themselves provide researchers with the opportunity to empirically investigate the four dimensions represented in the SUDIQ. The potential positive implications that strengths use and deficit improvement may have for the organisation may assist organisations in optimising their approach to employee development.

The primary objective of research article 2 was to examine the item bias, structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ. To address the first specific objective of this study, the item bias, construct equivalence, measurement unit equivalence and

full-score equivalence of the Strengths Use and Deficit Improvement Questionnaire (SUDIQ) were examined in a heterogeneous sample in South Africa. The results of this study indicated that the SUDIQ is unbiased and equivalent to use for the measurement of POSSU, POSDI, PBSU and PBDI among white, black and coloured participants within a South African context. More specifically, items that were uniformly or non-uniformly biased were identified and excluded from the instrument. The uniformly biased items included one POSSU item, two POSDI items, two PBSU items and three PBDI items. Three POSSU items were found to be non-uniformly biased. The structural equivalence, measurement unit equivalence and scalar equivalence of the SUDIQ were confirmed. Therefore, it can be expected that, when the SUDIQ is used in future studies, the conclusions drawn from such studies are likely to be fairly accurate and would not discriminate against any ethnic group within the South African context.

It can therefore be concluded that the results of this study provide some preliminary evidence that the SUDIQ can be used with relative confidence in a multicultural environment. This allows future research to yield valid and reliable results of employee strengths use and deficit improvement within the work context that are relatively free from ethnic bias. Consequently, future research can draw more accurate conclusions regarding the antecedents and outcomes of POSSU, POSDI, PBSU and PBDI.

The primary objective of research article 3 was to examine whether POSSU, POSDI or a combination of these two constructs will lead to the best organisational outcomes, including work engagement, learning, job satisfaction and turnover intention. To address the first and second specific objectives of this article, the relationships between POSSU and POSDI with work engagement, learning, job satisfaction and turnover intention were examined. The results from this study provided support that both POSSU and POSDI are significant predictors of the four organisational outcomes work engagement, learning, job satisfaction and turnover intention. However, the study results also revealed that although POSSU and POSDI in isolation predicted learning and job satisfaction, when POSSU and POSDI were both included in one structural model and the covariance between these two variables was taken into account, the paths between POSSU and learning and between POSSU and job satisfaction became insignificant. These results imply that in organisations where both strengths use and deficit improvement are present,



POSDI may play a stronger role in increasing learning and job satisfaction and that POSSU may become less significant. This unexpected result may be due to the learning culture found in educational settings such as where this study was conducted. It seems as if development (in this case the development of weaknesses) may play a more prevalent role in educators' work environment than strengths use does.

Specific objective 3 was to determine whether POSSU, POSDI or a combined approach is associated with higher levels of work engagement, learning and job satisfaction and lower turnover intention among teachers in South Africa. To examine this objective, the participants were divided into one of four groups consisting of (a) employees who perceive the organisation as neither supporting their strengths use nor their deficit improvement (i.e. low levels of POSSU and low levels of POSDI); (b) employees who experience low levels of POSSU, but high levels of POSDI (i.e. a strengths-based approach); (c) employees who experience high levels of POSSU, but low levels of POSDI (i.e. a deficit-based approach); and (d) employees who experienced high levels of both POSSU and POSDI (i.e. a combined approach).

The results indicated that those employees following a combined approach experienced significantly higher levels of work engagement, learning and job satisfaction, and lower turnover intention compared to employees with low levels of POSSU and low POSDI. The results did not confirm differences between employees perceiving their organisations as following a combined approach, those who believe their organisation follows a strengths-based approach and those perceiving a deficit-based approach. One exception is that a combined approach was associated with higher job satisfaction than a strengths-based approach. It is, however, worth noting that no differences were found between a strengths-based approach and a deficit-based approach when these employees were compared to the group with low POSSU and low POSDI. Therefore, it cannot be claimed that following either a strengths-based approach or a deficit-based approach yields better results for work engagement, learning, job satisfaction and turnover intentions than a complete lack of POSSU and POSDI. Consequently, exclusively focusing on strengths or on deficits is no better than a lack of both POSSU and POSDI. The exceptions to the above is that a deficit-based approach was shown to be associated with higher levels of work engagement and turnover intentions compared to an environment with low POSSU and low POSDI.

The results of this study clearly suggest that in an environment where the organisation follows a combined approach (focusing on both POSSU and POSDI), employees are likely to experience higher levels of work engagement, learning and job satisfaction and lower turnover intention, compared to organisations where neither strengths use nor deficit improvement receive much consideration. Therefore, organisations are encouraged to invest equally in both their employees' deficits and their strengths, rather than overemphasising or neglecting either strengths use or deficit improvement.

The specific objective of research article 4 was to determine which of the following two models is a better fitting structural model: (a) a model where work engagement is the antecedent of proactive behaviour (PBSU and PBDI) and possible mediator between POSSU and PBSU, and between POSDI and PBDI or (b) a model where work engagement is the outcome of proactive behaviour (PBSU and PBDI) and where PBSU and PBDI possibly mediate the relationship between POSSU and POSDI with work engagement. The two models were tested and compared with each other and the research results indicated that model 1 hypothesising work engagement as a predictor of PBSU and PBDI fitted the data significantly better compared to model 2. This result is in line with previous research that found more support for proactive behaviour as an outcome of work engagement (Hakanen, Perhoniemi & Toppinen-Tanner, 2008, Schaufeli & Salanova, 2008; Sonnentag, 2003), whereas only one previous study has indicated proactive behaviour to be an antecedent of work engagement (Bakker, Tims & Derks, 2012).

To elaborate on the relationships specified in this best-fitting model, it was found that both POSSU and POSDI were significant predictors of work engagement. Interestingly, it was found that POSSU was a stronger predictor of work engagement. This is contrasting to the results found in article 3 of this thesis where POSDI was a stronger predictor of work engagement compared to POSSU. This discrepancy may be attributed to the different populations studied in article 3 and article 4, respectively. It can be theorised that in educational settings (as in article 3), training and development (such as the development of weaknesses) may be more prevalent than a focus on strengths use. On the other hand, in a financial environment (as investigated in

article 4), precision, quality and competence (in line with individuals' strengths) may be considered more essential than the development of deficits.

The results further revealed that work engagement predicted PBSU and PBDI. This is in line with the results of previous research (Hakanen et al., 2008, Schaufeli & Salanova, 2008; Sonnentag, 2003). In addition, it was found that POSSU predicted PBSU, and POSDI predicted PBDI. This implies that when employees believe that their organisation supports them to use their strengths and improve their deficits, they will be more likely to engage in proactive behaviour of strengths use and deficit improvement themselves.

The confirmed relationships of POSSU and POSDI predicting work engagement and work engagement that significantly predict PBSU and PBDI meet the criteria set for mediation (Baron & Kenny, 1986). This indirect effect was confirmed in this study, together with the direct relationships between POSSU with PBSU and POSDI with PBDI. These results therefore confirm work engagement as a complimentary mediator in the relationship between POSSU and PBSU and between POSDI and PBDI. Therefore, when employees feel that their organisation supports their strengths use and encourages the improvement of their deficits these employees may experience increased levels of work engagement. This positivity toward their job leaves them more energised and enthusiastic about their work, which, in turn, may result in employees willing to display proactive behaviour to use their strengths and improve their deficits at work.

These results again confirm the importance of creating a work environment where employees can apply their talents, and where they can develop their weaknesses to contribute to their work engagement levels and ultimately to them actively seeking opportunities in their work to apply their strengths and improve their deficits. It can be expected that this positive cycle may ultimately assist the organisation to achieve its objectives through a skilled, competent and engaged work force.

## **6.2 LIMITATIONS OF THIS RESEARCH**

In all four articles of this thesis, data was collected by means of self-report measures. This may pose certain risks related to common method variance, causing the correlations between variables to become inflated (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). However, Spector (2006) argues that the bias in a study is rarely caused by the method (i.e. self-report measures) alone. He argues that the nature of bias depends on both the construct of interest and how it is measured (Spector & Brannick, 1995), and not all studies relying on self-report measures will find the significant correlations between the study variables, even with large sample sizes. Therefore, he argues that the issues related to common method variance may often be overestimated. Instead, it is suggested that the nature of the variables guides the researcher regarding common method variance. Specifically, the means to measure a specific construct should be appropriate, and it is believed that the most accurate information about individuals' attitudes or emotions is obtained by means of self-reports (Spector, 2006).

The cross-sectional nature of the research done in all four articles of this thesis is a limitation. This limitation specifically limits the inferences made from the results found in article 3 and article 4 of this thesis. Cross-sectional research does not allow one to draw accurate causal inferences regarding the relationships between the study variables (Gravetter & Forzano, 2009). The implication for research article 3 is that the predictive value of POSSU and POSDI in relation to work engagement, learning, job satisfaction and turnover intention should be confirmed through a longitudinal investigation of these relationships. Similarly, in article 4, the cross-sectional nature of the study limits the researcher in drawing definite conclusions regarding the direction of causality between specifically work engagement and PBSU and PBDI. Therefore, a further investigation that studies the relationships between POSSU, POSDI, PBSU, PBDI and work engagement should employ a longitudinal research design. Such longitudinal studies, as suggested above, may provide researchers with the opportunity to investigate how the relationships between the variables behave and develop over time, and therefore do not merely provide a snapshot of these relationships at a single point in time (Gravetter & Forzano, 2009). In line with the latter, it is worth noting that this thesis forms part of a larger project at the WorkWell Research Unit for Economic and Management Sciences, where several subsequent

studies are in process that follow a longitudinal research design to confirm the relationships identified in this study. The results found in this PhD should therefore be seen as preliminary results pertaining to the four constructs, POSSU, POSDI, PBSU and PBDI, and their relationships with other variables.

Another limitation related to all four the research articles in this thesis relates to the measuring instruments that were only administered in English, despite the fact that this is not the primary language of most of the participants. Due to very high costs involved in the translation and validation of instruments in all eleven languages in South Africa, this was not possible. However, English is considered to be the *lingua franca* in this country, and it was also a prerequisite for participation that the participants be fluent in English.

In article 1 and article 2 of this thesis, the psychometric properties of the SUDIQ (i.e. reliability, validity, bias and equivalence) were investigated among a heterogeneous sample of the general working population in South Africa. However, this may be a limitation, since the unique characteristics of specific organisational contexts may have been overlooked. For example, as seen in the contrasting results from article 3 and article 4 of this thesis, it was found that for teachers' POSDI was a stronger predictor of work engagement, whereas for employees in the financial industry, POSSU seemed to be a stronger predictor of work engagement compared to POSDI. This clearly illustrates how strengths use and deficit improvement may differ within various contexts. For this reason, it is suggested that future research should also explore the reliability and validity of the SUDIQ in specific industries.

Another limitation of research article 2 was that, due to the limited scope of this study, only the bias and equivalence of the SUDIQ based on ethnicity were investigated. However, measuring instruments can be biased based on other characteristics such as language, gender, occupation and job level, to name but a few. Therefore, in order to render the SUDIQ as unbiased and equivalent, it is suggested that the differences in test scores based on other characteristics should also be established. Especially relevant in this regard, is the unique South African context where a clear distinction should be made regarding ethnicity and language groups, as they are not synonymous with each other. The vast majority of black South Africans speak one of nine

official South African languages. This implies that, although these individuals share the same ethnicity, there may be some group differences based on language that should be explored in future research. Therefore, future researchers are encouraged to explore the bias and equivalence of the SUDIQ among the 11 official language groups in South Africa as well. However, this may prove to be expensive and it may be challenging to draw a representative sample to sufficiently represent each language group. Another limitation in terms of the psychometric properties of the SUDIQ, as investigated in article 1 and article 2 of this thesis, was that the scope of this study has been narrowed to include a limited few different types of reliability, validity, bias and equivalence. More specifically, this study investigated internal consistency of the SUDIQ, factorial validity, convergent validity, criterion validity, uniform item bias, non-uniform item bias, structural equivalence, measurement unit equivalence and scalar equivalence. These mentioned few have been chosen since they represent the most common types of reliability, validity, bias and equivalence typically found in validation studies of measuring instruments.

One limitation of article 3 was the relatively small sample size ( $N = 266$ ). The reason for the small sample may be attributed to the low response rate by the participants, as the data was collected in the beginning of the South African academic year. This time of data collection has proven to be less than ideal since it is associated with a high administrative load by teachers. The relatively small sample size may jeopardise the extent to which the sample is representative of the total study population. This, in turn, may limit the extent to which the researcher can generalise the results of this study (Trochim & Donnelly, 2006).

## **6.3 RECOMMENDATIONS**

The following recommendations are made for future research and to the organisation.

### **6.3.1 Recommendations to the organisation**

A validated questionnaire to measure POSSU, POSDI, PBSU and PBDI – the SUDIQ – could enable organisations to effectively assess the extent to which their employees believe that the organisation creates a supportive environment where they can apply their strengths and improve

their deficits, and the extent to which employees engage in proactive behaviour to use their strengths and improve their deficits. As previously mentioned in this thesis, research has shown that strengths use is associated with positive outcomes such as work engagement, increased happiness and increased well-being (Govindji & Linley, 2007; Linley & Harrington, 2006; Proctor, Maltby, & Linley, 2011). Similarly, deficit improvement may lead to positive outcomes such as increased job satisfaction, reduced turnover intentions and improved organisational effectiveness (Brown, 2002; García, 2005; Pfeffer & Sutton, 2006; Schmidt, 2007). This clearly demonstrates the importance of these constructs. Once organisations are aware of employees' perceptions regarding their employees' POSSU, POSDI, PBSU and PBDI levels (by means of measuring this with the SUDIQ), they may be able to target specific interventions to rectify less favourable conditions. Also worth noting is that since the SUDIQ has been proven to be unbiased and equivalent for ethnic groups in South Africa, organisations can draw relatively accurate conclusions from the measurement of POSSU, POSDI, PBSU and PBDI with the SUDIQ across different ethnic groups.

To realise the true value of POSSU, POSDI, PBSU and PBDI, it is recommended that organisations should apply the principles of using their employees' strengths and creating opportunities for them to improve their deficits, especially since the results in this study have provided preliminary evidence of the potential benefits that strengths use and deficit improvement may hold for the organisation. The results of this study provide evidence that organisations are advised to invest the same amount of time and resources in their employees' strengths and their deficits, since such a combined approach has shown to be related to positive organisational outcomes, such as higher levels of work engagement, learning and job satisfaction and lower turnover intention.

These four outcomes have proven to be very beneficial to the organisation. For example, research has indicated that high engagement is related to increased job satisfaction (Schaufeli & Salanova, 2008), higher levels of commitment and lower intentions to leave (Schaufeli & Bakker, 2004), and performance (Schaufeli, Taris & Bakker, 2006), as well as increased personal initiative (Sonnentag, 2003) and proactive behaviour (Salanova & Schaufeli, 2008). Similarly, learning (as a component of thriving) is associated with the acquiring and application of

knowledge and skills (Spreitzer, Sutcliffe, Dutton, Sonenshein & Grant, 2005), which, in turn, can be applied to the benefit of the organisation. Furthermore, research has documented that job satisfaction is associated with increased performance (Crossman & Abou-Zaki, 2003), organisational commitment (Olcer, 2015) and intentions to stay with the organisation (Chiang, Back & Canter, 2005). Finally, turnover intention has been proven to be a precursor of actual employee turnover (Griffeth, Hom & Gaertner, 2000). The above discussion clearly illustrates the importance of high work engagement, learning and job satisfaction and low turnover intention. Therefore, this study has indicated that in organisations where employees believe that the organisation provides them with a supportive environment to use their strengths and improve their deficits, these employees are likely to experience increased work engagement, learning, job satisfaction and lower turnover, which, in turn, may be related to a broad range of positive outcomes for the organisation.

Another finding of this study that is of great value to the organisation is that when the organisation provides support for strengths use and deficit improvement, employees may be mobilised to engage in proactive behaviour to actively seek opportunities where they can use their strengths and improve their deficits. Such a supportive work environment may be fostered in a number of ways. To increase employees' POSSU, organisations should first and foremost become aware of the strengths that each of their employees has. Once these strengths have been identified, organisations may formulate action plans where these strengths may be applied to optimise their benefits. Another way in which employees' strengths may be applied at work is by redesigning job positions in such a way that they utilise employees' potential to the full. POSDI, on the other hand, may be increased by devising strategies to identify employees' weaknesses, and to create sufficient opportunities (through, for example, training and development programmes) to improve these deficits.

In addition to the above, the research results of specifically article 3 and article 4 of this thesis have indicated that in different work environments, strengths use and deficit improvement may not necessarily carry the same weight. For example, as mentioned, the results of this research have indicated that for teachers, POSDI may be a stronger predictor of work engagement, whereas in the financial sector, POSSU seems to be a stronger predictor of work engagement.



These findings illustrate the importance for organisations to do a thorough analysis of their employees' needs in terms of strengths use and deficit improvement. Once these organisations are able to determine whether their employees place the same amount of value on strengths and deficits, they are better able to address their employees' needs in this regard.

To realise the ideal value of strengths use and deficit improvement, organisations are encouraged to neither overemphasise nor neglect either one of these two, as it can be concluded from the results of this research that employees have a need to both apply their strengths and improve their deficits for optimal functioning in the workplace.

### **6.3.2 Recommendations for future research**

For future research, the ideal would be to develop objective measures or ratings by others (as opposed to self-report instruments such as the SUDIQ) to assess the extent to which organisations use employees' strengths and improve their deficits, and also the extent to which employees engage in proactive behaviour to use their strengths and improve their deficits. This may reduce the risk of common method variance described earlier (Podsakoff et al., 2003). Consequently, objective measures may create the opportunity to examine the difference in employees' perceived strengths use and deficit improvement, as opposed to their actual activities related to strengths use and deficit improvement.

The small sample sizes in this study may limit the extent to which the results from this research can be generalised. Therefore, it is strongly suggested that subsequent studies corroborate the results found in this study among significantly larger study populations. This will allow researchers to draw more accurate conclusions that can be generalised to the larger population. In addition to sample size, it is also strongly suggested that future research should investigate the functioning of POSSU, POSDI, PBSU and PBDI within a variety of organisational contexts. This will shed light on the somewhat contrasting results found in this study where it was seen that among educators, POSDI, rather than POSSU, was a stronger predictor of work engagement, and on the other hand it was found that POSSU was a stronger predictor of work engagement among financial services employees. Therefore, examining the relationships between POSSU,

POSDI, PBSU and PBDI with other variables in different work environments will further clarify the constructs within the nomological net.

Research building on the work done in the current thesis may consider examining the bias and equivalence of the SUDIQ among, for example, gender groups, different occupational groups and levels, and language groups. This will strengthen the suitability of the SUDIQ in measuring POSSU, POSDI, PBSU and PBDI within the diverse South African context.

Finally, due to the limited scope of a thesis, the true nature and behaviour of the four core constructs of this research project, POSSU, POSDI, PBSU and PBDI have only been examined in a limited number of studies. However, to completely understand and contextualise these variables, it is recommended that future research should explore the relationships and causal relationships between the four constructs and other constructs. This would provide stronger evidence for the nomological net and practical value of POSSU, POSDI, PBSU and PBDI. Furthermore, in an attempt to explore the causal relationships between POSSU, POSDI, PBSU and PBDI with other variables, future studies are encouraged to utilise a longitudinal research design. This will ensure that these studies will not be handicapped by the limitations of cross-sectional studies as discussed earlier.

## REFERENCES

- Crossman, A., & Abou-Zaki, B. (2003). Job satisfaction and employee performance of Lebanese banking staff. *Journal of Managerial Psychology*, 18(4), 368-376. doi: 10.1108/02683940310473118
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309-328. doi: 10.1108/02683940710733115
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, 10(2), 170-180. doi: 10.1037/1076-8998.10.2.170
- Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, 65(10), 1359-1378. doi: 10.1177/0018726712453471
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. doi: 10.1037/0033-295X.84.2.191
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality & Social Psychology*, 51(6), 1173-1182. doi: 10.1037/0022-3514.51.6.1173
- Brown, J. (2002). Training needs assessment: A must for developing an effective training program. *Public Personnel Management*, 31(4), 569-578. doi: 10.1177/009102600203100412
- Cameron, K. S. (2003). Organizational virtuousness and performance. In K. S. Cameron, J. E. Dutton & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 48-65). San Francisco: Barrett-Koehler Publishers.
- Carr, A. (2004). *Positive psychology: The science of happiness and human strengths*. East Sussex, England: Brunner-Routledge.
- Chiang, C. F., Back, K. J., & Canter, D. D. (2005). The impact of employee training on job satisfaction and intention to stay in the hotel industry. *Journal of Human Resources in Hospitality & Tourism*, 4(2), 99-118. doi:10.1300/J171v04n02\_06
- Erickson, R., & Grove, W. (2007). Why emotions matter: age, agitation, and burnout among registered nurses. *Online Journal of Issues in Nursing*, 13(1). doi: 10.3912/OJIN.Vol13No01PPT01

- García, M. Ú. (2005). Training and business performance: The Spanish case. *The International Journal of Human Resource Management*, 16(9), 1691-1710. doi: 10.1080/09585190500239341
- Govindji, R., & Linley, P. A. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *International Coaching Psychology Review*, 2(2), 143-153.
- Gravetter, F. J., & Forzano, G. (2009). *Research methods for the behavioral sciences* (3rd ed.). Belmont, CA: Wadsworth.
- Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management*, 26(3), 463-488. doi: 10.1177/014920630002600305
- Hakanen, J. J., Perhoniemi, R., & Toppinen-Tanner, S. (2008). Positive gain spirals at work: From job resources to work engagement, personal initiative and work-unit innovativeness. *Journal of Vocational Behavior*, 73(1), 78-91. doi:10.1016/j.jvb.2008.01.003
- Langelan, S., Bakker, A. B., Schaufeli, W. B., & Van Doornen, L. J. P. (2006). Burnout and work engagement: Do individual differences make a difference? *Personality and Individual Differences*, 40(3), 521-532. doi: 10.1016/j.paid.2005.07.009
- Linley, P. A., & Harrington, S. (2006). Strengths coaching: A potential-guided approach to coaching psychology. *International Coaching Psychology Review*, 1(1), 37-46.
- Olcer, F. (2015). An empirical study on the relationships among transformational leadership dimensions, job satisfaction and organizational commitment of bank employees. *European Journal of Business and Management*, 7(7), 72-87.
- Pfeffer, J., & Sutton, R. I. (2006). Evidence-based management. *Harvard Business Review*, 84(1), 62-74.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903. doi: 10.1037/0021-9010.88.5.879
- Proctor, C., Maltby, J., & Linley, P. A. (2011). Strengths use as a predictor of well-being and health-related quality of life. *Journal of Happiness Studies*, 12(1), 153-169. doi 10.1007/s10902-009-9181-2

- Schaufeli, W. B. & Salanova, M. (2008). Enhancing work engagement through the management of human resources. In K. Näswall, M. Sverke, & J. Hellgren (Eds.), *The individual in the changing working life* (pp. 380-404). Cambridge, UK: Cambridge University Press.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behaviour*, 25(3), 293-315. doi: 10.1002/job.248
- Schaufeli, W. B., & Bakker, A. B. (2010). The conceptualization and measurement of work engagement. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp.10-24). New York, NY: Psychology Press.
- Schaufeli, W. B., & Salanova, M. (2007). Work engagement: An emerging psychological concept and its implications for organizations. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki (Eds.), *Research in social issues in management: Managing social and ethical issues in organizations* (Vol. 5, pp. 135-177). Greenwich, CT: Information Age Publishers.
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92. doi: 10.1023/A:1015630930326
- Schaufeli, W. B., Taris, T. W., & Bakker, A. B. (2006). Dr. Jekyll and Mr. Hyde: On the differences between work engagement and workaholism. In R. Burke (Ed.), *Work hours and work addiction* (pp. 193–252). Northampton, UK: Edward Elgar.
- Schmidt, S. W. (2007). The relationship between satisfaction with workplace training and overall job satisfaction. *Human Resource Development Quarterly*, 18(4), 481-498. doi: 10.1002/hrdq.1216
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5-14. doi: 10.1037//0003-066X.55.1.5
- Sonnentag, S. (2003). Recovery, work engagement, and proactive behaviour: A new look at the interface between nonwork and work. *Journal of Applied Psychology*, 88(3), 518. doi: 10.1037/0021-9010.88.3.518
- Spector, P. E. (2006). Method variance in organizational research truth or urban legend? *Organizational Research Methods*, 9(2), 221-232. doi: 10.1177/1094428105284955
- Spector, P. E., & Brannick, M. T. (1995). The nature and effects of method variance in organizational research. In C. L. Cooper, & I. T. Robertson (Eds.), *International review of*

*industrial and organizational psychology* (Vol. 10, pp. 249-274). New York, NY: John Wiley.

Spreitzer, G., Sutcliffe, K., Dutton, J., Sonenshein, S., & Grant, A. M. (2005). A socially embedded model of thriving at work. *Organization Science*, *16*(5), 537-549. doi: 10.1287/orsc.1050.0153

Trochim, W. M. K., & Donnelly, J. P. (2007). *The research methods knowledge base* (3rd ed.). Mason, OH: Thompson Custom Solutions.