

# Investigating positive leadership, psychological empowerment, work engagement and satisfaction with life in a chemical industry

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**Orientation:** The predominant theme of this research attends to the role of perceived positive leadership behaviour in relation to employee outcomes (psychological empowerment, work engagement, and satisfaction with life).

**Research purpose:** The objective of this study was to investigate whether perceived positive leadership behaviour could predict psychological empowerment, work engagement, and satisfaction with life of employees in a chemical organisation in South Africa and whether positive leadership behaviour has an indirect effect on employees work engagement and satisfaction with life by means of psychological empowerment.

**Motivation for the study:** The motivation for this study arose from the evident gap in academic literature as well as in terms of practical implications for the chemical industry regarding positive leadership behaviour, psychological empowerment, work engagement and satisfaction with life of employees.

**Research design, approach and method:** A cross-sectional survey design was used with a convenience sample ( $n = 322$ ). Structural equation modelling (SEM) was used to examine the structural relationships between the constructs.

**Main findings:** Statistically significant relationships were found between positive leadership behaviour, psychological empowerment, work engagement and satisfaction with life of employees. Positive leadership has an indirect effect on work engagement and satisfaction with life via psychological empowerment.

**Practical/managerial implications:** This study adds to the lack of literature in terms of positive leadership, psychological empowerment, work engagement and satisfaction with life within a chemical industry. It can also assist managers and personnel within the chemical industry to understand and perhaps further investigate relationships that exist between the above mentioned concepts.

**Contribution/value-add:** It is recommended that leadership discussions, short training programs and individual coaching about positive leadership and particularly psychological empowerment take place.

## Introduction

Today's business world can be described as a VUCA world, characterised by volatility, uncertainty, complexity and ambiguity (Rodriguez & Rodriguez, 2015). Organisational leaders find today's business environment depressing and in an uncontrollable negative spiral (Youssef-Morgan & Luthans, 2013). Kim Cameron, a leading positive organisational scholar, has said, 'Business leaders give more attention to the negative than to the positive, especially in trying times' (Cameron, 2010, p. 45). Trying times are not the exception anymore, but the norm. The world economy is still struggling, as seen from recent reports on the United States of America and the European economies (Appelbaum, 2012; Brittain, 2012; Inman, 2013). The economic growth in South Africa was slower since 2012 due to the sustained weakness in the global economy and domestic structural constraints (African Economic Outlook, 2012; McKinsey, 2015). The South African economy currently appears quite vulnerable following a deterioration in domestic socio-economic and political conditions (Smit, Grobler & Nel, 2014). The South African economy has slowed down dramatically, job creation has been disappointing, unemployment is high, while the country experience enduring poverty (McKinsey, 2015). These factors, linked with energy challenges, lengthy strikes in the mining industry and pressures on manufacturing organisations led to growing pessimism among people. In addition, the economic downturn in China and thereby lower Chinese demand for commodities has impacted negatively on the South African

economy. In tough times, when organisations are forced to weather change, recession and downsizing, leaders are called to take responsibility for clear, effective and principled leadership (Blackie, 2012). They have a special responsibility to provide as much stability, safety, hope and meaning as possible for their employees (Cone, 2012; Rodriguez & Rodriguez, 2015). Purnell and Johnson (2008) emphasise that keeping employees well and employed has obvious advantages for both the organisation and its employees. For the organisation it means productive employees, profits and greater competitiveness and for the employee it means a safeguard against financial suffering, promoting a better quality of life and allowing them to make the most of their potential (Purnell & Johnson, 2008). The question arises whether a leader's positive approach to managing employees will have an impact on the employee's well-being? The objective of this study is to investigate if a positive approach to leadership can impact on individual outcomes such as psychological empowerment, work engagement and satisfaction with life in an uncertain and negative business environment. Currently a lack of research exists in this area, specifically within South Africa.

Youssef-Morgan and Luthans (2013) postulate that it is becoming more and more difficult for leaders to be positive, while Rodriguez and Rodriguez, (2015) state that 'leadership is going to be a matter of discovering the positive energy in every person' (p. 862). A decade ago researchers began to investigate the impact of the positive energy on individuals and organisations (Spreitzer & Cameron, 2012). Quality of life is the domain of positive psychology and, according to Donaldson and Ko (2010), this field of psychology has blossomed since its introduction at the 1998 American Psychological Association convention. Seligman and Csikszentmihalyi (2000) set forth the focus areas of positive psychology: On an individual level, it is about positive traits and its aim is to study what is right with people, what they do right and how they manage to do it right (Compton, 2005). In an organisational context, components can include positive leadership (Arakawa & Greenberg, 2007; Avolio & Gardner, 2005; Avolio, Gardner, Walumbwa, Luthans, & May, 2004; Bass, 1999; Cameron, 2008; Conger & Kanungo, 1994; Dutton & Spreitzer, 2014; Glynn & Dowd, 2008; Kelloway, Weigand, McKee, & Das, 2013; Van Dierendonck, 2011; Zbierowski & Góra, 2014), psychological empowerment (Menon, 2001; Mishra & Spreitzer, 1998; Quinn & Spreitzer, 1997; Spreitzer, 1995), work engagement (Kahn, 1990; May, Gilson, & Harter, 2004; Schaufeli, Salanova, Gonzalez-Romá, & Bakker, 2002), satisfaction with life (Lucas, Diener, & Suh, 1996; Pavot & Diener, 1993; Rojas, 2006; Sirgy & Wu, 2009) and positive business (Spreitzer & Cameron, 2012).

Positive organisational psychology focuses on individual experiences and characteristics in the workplace and it is used to expand the efficacy and quality of life in organisations (Donaldson & Ko, 2010). Positive organisational behaviour (POB) focuses on positive psychological capacities (PsyCap) that can be measured, developed and managed, as well as

on the study and application of positive human resources strengths (Luthans, 2000). Positive organisational scholarship (POS) on the other hand focuses on positive results, methods and qualities of organisations and their employees (Cameron, Dutton, & Quinn, 2003). It is in this field of research wherein the concept of positive forms of leadership is settled. Laschinger, Wong, Cummings, and Grau, (2014) found that positive leadership improves employees satisfaction, commitment, intention to stay with the organisation and well-being (Salmi, Perttula, & Syväjärvi, 2014).

De Villiers and Stander (2011) found that a leader's approach towards direct reports influence how employees perceive their roles and expectations. Graen and Uhl-Bien (1995) state that leadership is built on how the relationship between the leaders and subordinate is formed (leader-member-exchange).

## Literature review

### Positive leadership

Youssef-Morgan and Luthans (2013) are of the opinion that positivity is crucial for leaders in challenging times. Arakawa and Greenberg (2007) see positive leaders as those that influence their followers positively and therefore increase their engagement and well-being (Krueger & Killham, 2005). They expound that a positive leader has an optimistic explanatory style, which is linked to a wide range of positive performance results in the work domain (Nolan-Hoeksema, Girus, & Seligman, 1986; Peterson & Barrett, 1987; Peterson & Seligman, 1984), as well as better involvement, commitment, motivation and satisfaction of employees (Furnham, Brewin, & O'Kelly, 1994; Furnham, Sadka, & Brewin, 1992). Dasborough and Ashkanasy (2002) contend that leaders who show positive emotions and have a positive attribution style result in followers that have more favourable emotional reactions towards leadership. Fredrickson's (2001) broaden-and-build theory supports this and explains that positive emotions broaden the thought-action repertoires of followers and build enduring personal resources. Positive leadership promotes individuals and organisations, emphasises what goes right with them, what gives them life, what is experienced as good, what is inspiring to them and what is extraordinary (Cameron, 2008). This is supported by Rodriguez & Rodriguez, (2015) as what will be 'a leader for the coming future' (p.862). According to Arakawa and Greenberg (2007) positive leadership consist of a strengths-based approach, positive perspective and giving recognition.

Positive leadership theories that form part of the positive-orientated leadership genre include: authentic (Avolio & Gardner, 2005; Gardner, Avolio, Luthans, May, & Walumbwa, 2005); transformational (Bass, 1999); charismatic (Conger & Kanungo, 1994; Glynn & Dowd, 2008; Haney, 2012); empowering (Albrecht & Andretta, 2011; Arnold, Arad, Rhoades, & Drasgow, 2000; Hakimi, Van Knippenberg, & Griessner, 2010; Konczak, Stelly, & Trusty, 2000) servant

(Russell & Stone, 2002; Van Dierendonck, 2011) as well as ethical and spiritual leadership (Youssef-Morgan & Luthans, 2013).

Gardner *et al.* (2005), on the one hand, conceptualise authentic leadership as part of POB and posit that these leaders draw from PsyCap, which accompanies optimal self-esteem and psychological well-being to model and stimulate the development of these states in others, thereby supporting Arakawa and Greenberg's (2007) positive perspective. Transformational leaders on the other hand arouse followers through idealised influence and inspirational motivation (Bass, 1999). They intellectually stimulate their followers by managing them as individuals (Bass, 1999), which supports Arakawa and Greenberg's (2007) view of focusing on individuals strengths and recognising their efforts. Brun and Dugas (2008) describe *recognition* as a constructive response by a leader that takes into consideration not just works performance, but also commitment and engagement. According to Luthans (2000), effective leadership depends on strengthening, encouraging and rewarding value enhancing behaviours in order to gain greater performance. Dolezalek (2008) emphasises that the recognition a leader gives to employees, should be customised, meaningful and timely. Grawitch, Gottschalk, and Munz (2006) found that employee recognition is the key to protecting and building the uniqueness of individuals, giving their work meaning, supporting their development and contributing to their health and well-being. Employees tend to display more feelings of satisfaction towards their jobs when their efforts are recognised (Henryhand, 2009).

Empowering leaders lead by example, provide employees with accountability, development, autonomy, decision latitude, discretion and power, concern, coaching and information (Albrecht & Andreetta, 2011; Arnold *et al.*, 2000; Konczak *et al.*, 2000; Pearce & Sims, 2002). These behaviours strongly correlate with Arakawa and Greenberg's (2007) focus on a strength-based and developmental approach. Several studies indicate that greater *strengths* use by employees is related to well-being, optimism, vitality, self-esteem, positive affect and lower perceived stress (Diener, 2000; Proctor, Maltby, & Linley, 2011; Wood, Linley, Maltby, Kashdan, & Hurling, 2011). According to Rath and Conchie (2008), leaders who focus on follower's strengths, build a well-rounded team of followers. In an attempt to further clarify the concept of positive leadership, Arakawa and Greenberg (2007) endeavoured to operationalise the positive (optimistic) leadership role of managers in an organisation by developing a reliable and valid questionnaire, which measures perceived behavioural attributes. Based on Youssef-Morgan and Luthans (2013), conceptualisation that positive leadership is unique because of the focus on strengths and development and Kelloway, *et al.* (2013) focus on recognition this study's focus will be on a strength-based approach and giving recognition. Together this will form a positive perspective.

## Psychological empowerment

To empower, means to give power to someone (Thomas & Velthouse, 1990). Conger and Kanungo (1988) see empowerment as the process of enhancing feelings of self-efficacy through management, using empowerment strategies. Thomas and Velthouse (1990) conceptualise psychological empowerment as a cognitive model, including meaning, competence, choice and impact. Other theories regarding psychological empowerment include Menon's (2001) conceptualisation of psychological empowerment, which is characterised by perceptions of control, competence and goal internalisation.

According to Spreitzer (1995) psychological empowerment is a motivational construct consisting of four cognitions that reveal an energetic rather than a lifeless orientation to a work role, meaning that the employee feels able and wishes to form their work role and situations (Spreitzer, 1995; Thomas & Velthouse, 1990). *Meaning* reflects that an employee feels their work is essential and they care about what they are doing (Quinn & Spreitzer, 1997), while Mishra and Spreitzer (1998) describe meaning as dedication or personal association to work. *Competence* means that employees feel that they can perform (Quinn & Spreitzer, 1997) and they believe that they have the skills and ability to do their work well (Mishra & Spreitzer, 1998). *Perceived self-determination* is when employees experience freedom to choose how they do their work (Quinn & Spreitzer, 1997). Finally, *impact* means that employees believe that they influence the system in their organisation (Mishra & Spreitzer, 1998), have influence and others listen to them (Quinn & Spreitzer, 1997). The research of Laschinger *et al.* (2014) proved that when employees perceive their leaders behaviours as positive, employees will feel empowered:

**H1:** Perceived positive leadership behaviour is a significant predictor of employee psychological empowerment.

## Work engagement

Erickson (2005) describes engagement as commitment and compassion while other authors describe engagement as the degree to which employees are involved in their work (Kahn, 1990; Roberts & Davenport, 2002; Rothmann & Jordaan, 2006), or as Erickson (2005) puts it, the willingness to invest oneself to help the employer be successful. Schaufeli *et al.* (2002) describe another view of engagement, defining work engagement as 'a positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption' (p. 74). Vigor expresses itself through high energy and mental resilience, dedication shows a high level of both cognitive and affective involvement and absorption indicates a passing of time fully immersed in one's work (Schaufeli *et al.*, 2002). In Kahn's (1990) research, he induced three psychological conditions that influence employees to personally engage or disengage, namely, meaningfulness, safety and availability (Kahn, 1990). An employee experiences psychological meaningfulness if they feel that they obtain a return on their cognitive, emotional and physical investments

(Kahn, 1990). Psychological safety is experienced if the employee feels able to safely engage themselves in a work role without fearing undesirable consequences to their status, self-image or career (Kahn, 1990). Lastly, when employees experience psychological availability, they feel that they have the *cognitive, emotional and physical* resources to engage personally in a work role (Kahn, 1990). Kelloway, *et al.* (2013) state that a leader's positive behaviour results in employees experiencing positive emotions. We therefore propose the following:

**H2:** Perceived positive leadership behaviour is a significant predictor of employee work engagement.

## Satisfaction with life

The satisfaction with life construct is a component of the subjective well-being (SWB) construct, together with positive and negative affect (Arthaud-Day, Rode, Mooney, & Near, 2005). Conscious cognitive satisfaction with life judgements are done by individuals by assessing the overall quality of their lives based on their own distinct set of measures (Pavot & Diener, 1993). From the life domains literature it can be understood that life satisfaction is the result of satisfaction from various domains of life (Meadow, Mentzer, Rahtz, & Sirgy, 1992; Rampichini & D'Andrea, 1998; Salvatore & Munoz-Sastre, 2001; Veenhoven, 1996). As life is the sum of time spent on and at work, the interaction between life and job satisfaction is crucial (Doğan, Deniz, Odabaş, Özyeşil, & Özgirgin, 2009). Kelloway *et al.* (2013) found positive leadership as predictive of positive employee affect. Research by Zbierowski and Góra (2014) indicates that positive leadership impact on satisfaction with life and subjective happiness. It also seems that strengths-based leadership influences subjective well-being (of which satisfaction with life is a component) (Diener, 2000):

**H3:** Perceived positive leadership behaviour is a significant predictor of employees' satisfaction with life.

Positive leaders focus on an overall positive treatment of their followers. Cameron (2013) states that 'positive leadership practices promote a heliotropic effect, helping people to move toward the positive' (p. 7). It is hypothesised that positive leaders influence their followers' psychological empowerment, work engagement and satisfaction with life (Furnham *et al.*, 1992; 1994; Wijewardena, Samarantunge & Härtel, 2014). Quinn and Spreitzer (1997) emphasise that psychological empowerment is not something that management can do to their employees, but it is the employees' mind-set regarding their role in their organisation. Employees choose to be empowered, but management can create a context that is more empowering (Quinn & Spreitzer, 1997). Several studies have linked leadership to psychological empowerment of employees (Barroso Castro, Villegas Perinan, & Casillas Bueno, 2008; Kark, Shamir, & Chen, 2003; Mendes & Stander, 2011; Seibert, Wang, & Courtright, 2011).

Arakawa and Greenberg (2007) posit that positive leadership (strengths-based approach and recognition) positively

relate to work engagement. Leadership has a great impact on an employee's perception of the safety to engage the employees at work (Alok & Isreal, 2012; Kahn, 1990; Krueger & Killham, 2005; May *et al.*, 2004). On the one hand, if an employee feels that their leader is supportive, resilient and has a clear explanatory style, they are more willing to engage even when circumstances are not ideal (Kahn, 1990). On the other hand, leaders who are unpredictable, inconsistent and reluctant to hand over control instil the message that employees are not to be trusted (Kahn, 1990). May *et al.* (2004) showed that supervisory relations had the strongest effect on psychological safety, indicating how strong a role leadership plays towards an employee's cognitive, emotional and physical engagement levels.

Satisfaction with life theory is seen as part of the subjective or general well-being theory and is rarely included in the work domain research (Erdogan, Bauer, Truxillo, & Mansfield, 2012; Hakanen & Schaufeli, 2012). As work constitutes a large part of a person's life, it can be said that it affects a person's well-being (Russell, 2008). Rode (2004), as well as Pavot and Diener (2008), indicate that life satisfaction is partly conceptualised as the result of satisfaction with various life domains, such as work. Stress and fatigue cause negative spill-over into home life (Bartolome & Evans, 1980), but very little is known about positive spill-over (Spreitzer, 2007). Spreitzer (2007) suggests the possibility of positive spill-over from thriving at work to thriving at home. She indicates this as a 'fertile' area for future research (p. 79).

It is hypothesised that psychological empowerment will have an indirect effect on the relationship between positive leadership, work engagement and satisfaction with life. Several authors confirm a relationship between psychological empowerment and work engagement (Bhatnagar, 2012; De Villiers & Stander, 2011; Durand, 2007; Mendes & Stander, 2011), while psychological empowerment was found to have an indirect effect on the relationship between transformational leadership and employee attitudes (Barroso Castro *et al.*, 2008), especially work engagement (Durand, 2007). Psychological empowerment was found to have an indirect effect on the relationship between leadership and job satisfaction (which has been established is correlated to satisfaction with life) (Aryee & Chen 2006; Dewettinck & Van Amejide, 2011; Durand, 2007):

**H4:** Perceived positive leadership behaviour has an indirect effect on employee work engagement by means of employee psychological empowerment.

**H5:** Perceived positive leadership behaviour has an indirect effect on employee satisfaction with life by means employee psychological empowerment.

Figure 1 summarises the theoretical model that guided this study. The empirical study will be placed within the job demands-resources model (JD-R) (Demerouti & Bakker, 2011), which is a theoretical framework where job demands are seen as initiators of health impairment processes and job resources are seen as initiators of a motivational process (Demerouti & Bakker, 2011). A job resource is seen as

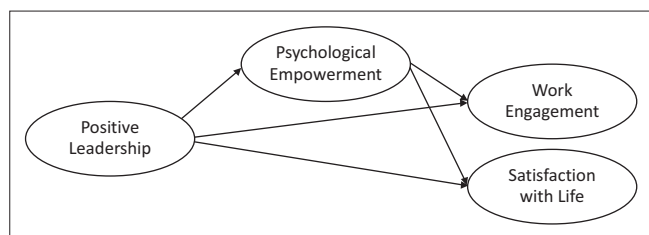


FIGURE 1: The hypothesised research model.

an occupational resource that facilitates the fulfilment of organisational outcomes and goals (Demerouti & Bakker, 2011); therefore positive leadership is seen as a job resource which positively influences psychological empowerment, work engagement and satisfaction with life. It follows from the above discussion that positive leadership should positively relate to satisfaction with life and that it is possible that positive leadership may have an indirect effect on work engagement and satisfaction with life by means of psychological empowerment. We therefore propose the following research model.

## Research design

### Research method

#### Sample and procedure

A quantitative research methodology was followed for this research project (Struwig & Stead, 2001). A randomised, cross-sectional convenience survey design, which entails standardised questionnaires, was used to collect the data. A formal letter from the University, which explains the purpose of the research and a consent letter were attached to the questionnaires. The formal letter and the letter of consent were given to the participants to outline the purpose of the research, why the research is important and beneficial for the individual, business and the university. The confidentiality and anonymity of the participants was ensured. After consent was given, data were collected from a convenience sample in a specific operations business unit ( $N = 700$ ) of a chemical organisation. Of the 700 questionnaires that were distributed 322 (46%) were returned. The study population consisted of 92.5% male participants with females representing 7.5% of the sample. The white participants comprised of 53.7% and the African participants 42.2% of the survey. Most of the participants were between the ages of 26–35 years (32%), while 29.5% reported a grade 12 qualification and 31.7% of the population reported NQF 4 level. Thirty one percent of the participants reported that they had less than five years' experience.

### Measuring instruments

The *Positive Leadership Measure* (PLM; Arakawa & Greenberg, 2007) was developed to investigate positive leadership and consists of a 12-item scale with three subscales. An adapted measure was used consisting of strengths-based approach and recognition. The items were answered using a five-point scale, varying from 1 (*I disagree a lot*) to 5 (*I agree a lot*). Strengths-based approach was measured by five items

(e.g. 'My manager appreciates my strengths',  $\alpha = 0.86$ ) and recognition measured by seven items (e.g. 'My manager recognises my accomplishments regularly',  $\alpha = 0.89$ ).

The *Measuring Empowerment Questionnaire* (MEQ; Spreitzer, 1995) is a 12-item measure of psychological empowerment. Response options range from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items for each of the four sub-dimensions of psychological empowerment included: Meaning was measured by three items (e.g. 'The work I do is very important to me',  $\alpha = 0.86$ ); competence measured by three items (e.g. 'I am confident about my ability to do my job',  $\alpha = 0.81$ ); self-determination measured by three items (e.g. 'I can decide on my own how to go about doing my work',  $\alpha = 0.82$ ), and impact measured by three items (e.g. 'My impact on what happens in my department is large',  $\alpha = 0.88$ ).

The *Work Engagement Scale* (WES; Rothmann, 2010) was used to measure work engagement on a seven-point frequency scale varying from 1 (*almost never or never*) to 7 (*always or almost always*). The items reflected each of the three components of Kahn's (1990) conceptualisation of work engagement, namely cognitive, emotional and physical engagement. Cognitive engagement was measured by three items (e.g. 'I am very absorbed in my work',  $\alpha = 0.78$ ), emotional engagement by four items (e.g. 'I am passionate about my work',  $\alpha = .82$ ) and physical engagement by four items (e.g. 'I feel alive and vital at work',  $\alpha = 0.80$ ). Rothmann (2010) reported evidence for the construct validity of the WES.

The *Satisfaction with Life Scale* (SWL; Diener, Emmons, Larsen, & Griffin, 1985) was developed as a five item measurement of an individual's general satisfaction with life. The response is given on a seven-point scale varying from 1 (*strongly disagree*) to 7 (*strongly agree*). Examples of the items were: (e.g. 'In most ways my life is close to my ideal') and (e.g. 'I am satisfied with my life'). The Cronbach's alpha coefficient for the SWL scale was 0.87 (Diener *et al.*, 1985).

### Statistical analysis

The raw data was converted by means of the SPSS 21 (IBM Corporation, 2012) program for further analysis of descriptive statistics. Cronbach's alpha coefficients ( $\alpha$ ), which determine the reliability of the measuring instruments and Pearson product-moment correlation coefficients, which specify the relationships between the variables were calculated. The effect sizes as described by Steyn (1999) were used to determine the practical significance of the findings. The practical significant cut-off point for correlation coefficients was set at  $p \geq 0.30$  which signifies a medium effect and  $p \geq 0.50$  for a large effect (Cohen, 1992; Steyn, 1999).

SEM was used in order to answer the research questions, to test the hypothesised model (Figure 1) and was applied to test the adequacy of the measurement and structural model. Schreiber (2008) describes structural equation modelling (SEM) as a set of statistical techniques employed to evaluate conceptual or theoretical models through a process of

regressive confirmation. Within this study it was implemented through the Mplus 7 statistical modelling program (Muthén & Muthén, 2011). Confirmatory factor analysis (CFA) was conducted. The conventional estimation methods, such as Maximum Likelihood and General Least Squares estimation are not appropriate to handle categorical data due to the underlying multivariate normality assumption. In this study the Weighted Least Squares (WLS) estimation indices were preferred (Muthén & Muthén, 2011). A two-step, model-building procedure was used to test the hypothesised model through evaluating both measurement and the structural models.

The SRMR, AIC and BIC indices were not computed as a result of the WLS estimator. In order to establish the goodness of fit, the indices used in the study were as follow: Absolute fit indices included the Chi-square ( $\chi^2$ ) statistic, which specifies the absolute fit of the model and Root-Means-Square Error of Approximation (RMSEA). The incremental fit indices included the (TLI) Tucker-Lewis Index and the (CFI) Comparative Fit Index (Hair, Black, Babin, & Anderson, 2010). RMSEA values  $<0.05$  indicate a close fit between the model and the data (Hair, *et al.*, 2010). Acceptable values for the TLI and CFI indices are  $>0.90$  (Muthén & Muthén, 2011).

Mediation determines how an independent variable, in this case psychological empowerment, influence an outcome (Gunzler, Chen, Wu & Zhang, 2013). In order to determine mediation, the indirect effects of variables were computed (Muthén & Muthén, 2011) through the procedure explained by Hayes (2009). Bootstrapping was used to construct two-sided, bias-estimated confidence intervals to evaluate mediation effects. The statistical significance of bootstrap-estimated indirect effects was assessed (Preacher & Hayes, 2009) and the bootstrap confidence intervals (5000 trials) were set at 95% for all indirect effects and computed to assess whether they included zeros. According to Gunzler, *et al.*, (2013) 'the indirect effect describes the pathway from the exogenous variable to the outcome through the mediator' (p. 392).

## Results

### Testing the measurement model

A hypothesised ten-factor measurement model was tested, using confirmatory factor analysis (CFA), to assess whether each of the measurement items would load significantly onto the scales with which they were theoretically associated. In line with the recommendation of Hair *et al.* (2010), each latent variable included two to four observed variables. The correlations were scrutinised for multicollinearity and no relationships  $> 0.90$  were found (Field, 2005). Six measurement models were tested.

Model 1a consisted of four latent variables, namely, (1) positive leadership, consisting of two first order latent variables, that is, strength-based approach (measured by five observed variables) and recognition (measured by seven observable

**TABLE 1:** Fit statistics of measurement models.

Model	$\chi^2$	df	TLI	CFI	RMSEA
Model 1a	1481.82*	614	0.92	0.97	0.07
Model 1b	7164.97	629	0.72	0.74	0.18
Model 1c	1545.54	616	0.96	0.96	0.07
Model 1d	2252.64	618	0.93	0.94	0.09
Model 1e	1607.49	617	0.96	0.96	0.07
Model 1f	3525.48	624	0.88	0.88	0.12

df, degrees of freedom; TLI, Tucker-Lewis; CFI, comparative fit index; RMSEA, root mean square error of approximation.

variables, (2) psychological empowerment, consisting of four first order latent variables, namely, meaning (measured by three observed variables), competence (measured by three observed variables), self-determination (measured by three observed variables) and impact (measured by three observed variables); (3) work engagement, consisting of three first order latent variables, namely, cognitive engagement (measured by three observed variables), emotional engagement (measured by four observed variables) and physical engagement (measured by four observed variables), and (4) satisfaction with life (measured with five observed variables). Models 1b, 1c, 1d, 1e and 1f followed the same template as model 1a. In model 1b, all observable variables were loaded onto one factor to test fit. In Model 1c, all observable variables to do with positive leadership were loaded directly onto positive leadership without distinguishing between strength-based approach and recognition. In Model 1d, all observable variables to do with psychological empowerment were loaded directly onto psychological empowerment without distinguishing between meaning, competence, self-determination and impact. In Model 1e, all observable variables to do with work engagement were loaded onto work engagement without distinguishing between cognitive, emotional and physical engagement. Lastly, in model 1f all observable variables to do with psychological empowerment and work engagement were loaded onto one factor without distinguishing between psychological empowerment and work engagement. The fit statistics for testing the various models are presented in Table 1.

A  $\chi^2$  value of 1481.82 ( $df = 614$ ) was obtained for measurement Model 1a and the fit statistics were acceptable for: TLI = 0.96, CFI = .97 and RMSEA = 0.07. The hypothesised model (Model 1a) had an acceptable fit with the data. Standardised coefficients ranged from 0.72 to 0.93. The results show that the correlation between each observable variable and its corresponding construct was statistically significant ( $p < .01$ ), establishing the relationships among indicators and constructs (Hair *et al.*, 2010).

### Evaluating the structural model

#### Descriptive statistics

In Table 2 the descriptive statistics and Cronbach's alpha coefficients for all variables are reported. The means, standard deviations and Pearson correlations are shown in Table 2. All scales showed adequate internal consistencies.

**TABLE 2:** Descriptive statistics, alpha coefficients, and correlations.

Variable	M	SD	$\alpha$	1	2	3	4	5	6	7	8	9	10	11	12
1. Positive leadership	3.60	0.99	0.86	-	-	-	-	-	-	-	-	-	-	-	-
2. PL Strength-based	3.53	0.96	0.90	0.87***††	-	-	-	-	-	-	-	-	-	-	-
3. PL Recognition	5.81	1.39	0.91	0.98***††	0.86***††	-	-	-	-	-	-	-	-	-	-
4. Psychological Empowerment	6.15	1.02	0.84	0.45***†	0.39***†	0.44***†	-	-	-	-	-	-	-	-	-
5. PE Meaning	4.81	1.63	0.88	0.36***†	0.31***†	0.35***†	0.80***††	-	-	-	-	-	-	-	-
6. PE Competence	5.71	1.22	0.81	0.35***†	0.30***†	0.34***†	0.77***††	0.61***††	-	-	-	-	-	-	-
7. PE Self-impact	4.57	1.30	0.72	0.32***†	0.28**	0.32***†	0.72***††	0.57***††	0.55***††	-	-	-	-	-	-
8. PE Self-determination	5.60	1.42	0.93	0.83***††	0.33***†	0.38***†	0.85***††	0.68***††	0.66***††	0.61***††	-	-	-	-	-
9. Work Engagement	5.28	1.42	0.92	0.45***†	0.39***†	0.44***†	0.71***††	0.57***††	0.55***††	0.51***††	0.61***††	-	-	-	-
10. WE Cognitive	4.39	1.13	0.92	0.32***†	0.28***†	0.32***†	0.51***††	0.41**†	0.40**†	0.37**†	0.44***†	0.72***††	-	-	-
11. WE Emotional	3.56	0.92	0.87	0.43***†	0.37***†	0.42***†	0.69***††	0.55***††	0.53***††	0.50***†	0.60***††	0.97***††	0.70***††	-	-
12. WE Physical	5.62	1.03	0.77	0.43***†	0.37***†	0.42***†	0.69***††	0.55***††	0.53***††	0.49**†	0.58***††	0.96***††	0.69***††	0.93***††	-
13. Satisfaction with life	5.20	1.20	0.84	0.32***†	0.28**	0.31***†	0.47***†	0.38***†	0.36***†	0.34***†	0.40***†	0.43***†	0.31***†	0.42***†	0.41***†

\*, Correlation is significant at the 0.05 level (2-tailed); \*\*, Correlation is significant at the 0.01 level (2-tailed)

†, Correlation is practically significant  $r > 0.30$  (medium effect); ††, Correlation is practically significant  $r > 0.50$  (large effect)

Table 2 indicates that positive leadership has statistically and practically significant correlations with all the constructs, psychological empowerment ( $r = 0.45$ ), work engagement ( $r = 0.45$ ), and satisfaction with life ( $r = 0.32$ ). The practical significance is large with regard to self-determination and medium with regards to the rest of the constructs. Strength-based approach has a statistically significant correlation with all the constructs. Recognition has a practically significant correlation (medium effect) with all the constructs, psychological empowerment ( $r = 0.39$ ), work engagement ( $r = 0.39$ ), and satisfaction with life ( $r = 0.39$ ). Psychological empowerment has a practically significant relationship with total work engagement ( $r = 0.71$ ; large effect) and satisfaction with life ( $r = 0.47$ ; medium effect). Work engagement has a statistically and practically (medium effect) significant correlation with satisfaction with life ( $r = 0.43$ ).

### Evaluating the hypothesised model

As the data is categorical in this study, competing structural models cannot be compared directly. Categorical data does not give AIC and BIC values which are normally used in comparing competing structural models. Structural models were compared using Chi square differencing testing in order to check global model fit (Satorra & Bentler, 2010). Differencing testing is done by constraining different regression paths to zero. The results show what the change in Chi square and degrees of freedom will be for each specific structural model.

The postulated path model for the structural relations was analysed. Model 2a included paths from positive leadership to psychological empowerment, work engagement and satisfaction with life and from psychological empowerment to work engagement and satisfaction with life (see Table 3). Based on the hypothesised model, seven competing structural models were tested (see Table 4).

In Model 2b, the path from positive leadership to psychological empowerment was constrained to zero and included paths from positive leadership to work engagement and satisfaction with life, from psychological empowerment to work engagement and satisfaction with life. Model 2c

**TABLE 3:** Fit statistics of competing structural models.

Model	$\chi^2$	df	TLI	CFI	RMSEA
Model 2a	1479.92	615	0.96	0.97	0.07

df, degrees of freedom; TLI, Tucker-Lewis; CFI, comparative fit index; RMSEA, root mean square error of approximation.

**TABLE 4:** Difference testing for competing structural models.

Model	$\Delta\chi^2$	$\Delta df$	p-value
Model 2b	119.12	2	0.00
Model 2c	13.24	2	0.002
Model 2d	156.22	2	0.00
Model 2e	8.70	0	0.01
Model 2f	69.96	2	0.00
Model 2g	76.32	3	0.00

df, degrees of freedom

included paths from positive leadership to psychological empowerment and satisfaction with life. The path between positive leadership and work engagement was constrained to zero. The model included paths between psychological empowerment, satisfaction with life and work engagement. Model 2d included paths from positive leadership to psychological empowerment, work engagement and satisfaction with life, but the path between psychological empowerment and work engagement was constrained to zero. The model included paths between psychological empowerment and satisfaction with life. Model 2e included paths from positive leadership to psychological empowerment and work engagement. The path between positive leadership and satisfaction with life was constrained to zero. The model included a path between psychological empowerment, work engagement and satisfaction with life.

Model 2f included paths from positive leadership to psychological empowerment, work engagement and satisfaction with life and from psychological empowerment to work engagement. The path between psychological empowerment and satisfaction with life was constrained to zero. Model 2g included paths from positive leadership to psychological empowerment and satisfaction with life, and from psychological empowerment to work engagement. The paths between positive leadership and work engagement and between psychological empowerment and satisfaction

with life were constrained to zero. The results show that model 2a fitted the data the best  $\chi^2 = 1479.92$  ( $df = 615$ ; TLI = 0.96; CFI = 0.97; RMSEA = 0.07) and will be used to discuss the relationship between constructs:

**Hypothesis 1:** Perceived positive leadership behaviour is a significant predictor of employee psychological empowerment.

Regarding the portion of the model predicting psychological empowerment, the path coefficient of positive leadership ( $\beta = 0.45$ ;  $p < 0.01$ ) was significant and had the expected sign. Positive leadership had a positive relationship with psychological empowerment. The ML-estimated equation accounted for a moderate proportion of the variance in psychological empowerment ( $R^2 = 0.20$ ). **H1** is therefore accepted:

**Hypothesis 2:** Perceived positive leadership behaviour is a significant predictor of employee work engagement.

Regarding the portion of the model predicting work engagement, no statistically significant path coefficient was found for positive leadership. Thus, **H2** is rejected:

**Hypothesis 3:** Perceived positive leadership behaviour is a significant predictor of employee satisfaction with life.

Regarding the portion of the model predicting satisfaction with life, the path coefficient of positive leadership was statistically significant ( $\beta = 0.10$ ;  $p < 0.01$ ). **H3** is therefore accepted.

The structural model indicates that possible mediating effect may be evident. To determine whether work engagement and satisfaction with life are indirectly affected by positive leadership and psychological empowerment, indirect effects were analysed. To test the significance of the indirect effects bias-corrected 95% confidence intervals were computed using bootstrapping with 5000 samples (Hayes, 2009).

The bootstrapping approach is regarded as more beneficial compared to the more traditional Baron and Kenny (1986) and the Sobel test due to greater statistical power (MacKinnon, Lockwood, & Williams, 2004) while it provides a more appropriate inference framework for mediation analyses (Gunzler *et al.*, (2013). Through this approach, standard errors (SE) and 95% confidence intervals (CIs) are also assessed (Deng, Allison, Fang, Ash, & Ware Jr, 2013):

**Hypothesis 4:** Perceived positive leadership behaviour has an indirect effect on employee work engagement via employee psychological empowerment.

Table 5 shows that the bootstrap-estimated indirect effect of positive leadership on work engagement (by means of psychological empowerment) was statistically significant ( $p \leq 0.01$ ) and the confidence intervals did not include zero (Preacher & Hayes, 2009). For the portion of the model predicting that psychological empowerment will have an indirect effect between positive leadership and work engagement, the path coefficient was significant. Positive

**TABLE 5:** Indirect Effects of Positive Leadership and Psychological Empowerment.

Scale	Estimate $\beta$	Positive leadership	
		SE	95% CI
Work engagement	0.29	0.05	[0.17, 0.38]
Satisfaction with life	0.14	0.06	[0.03, 0.25]

SE, standard error.

\*\* $p < 0.01$ .

Note: CI, confidence interval

leadership and psychological empowerment explained 53% of the variance in work engagement. Thus an indirect effect from positive leadership on work engagement by means of psychological empowerment was found. **H4** is accepted:

**Hypothesis 5:** Perceived positive leadership behaviour has an indirect effect on employee satisfaction with life by means of employee psychological empowerment.

The bootstrap estimated indirect effect of positive leadership on satisfaction with life (by means of psychological empowerment) was statistically significant ( $p \leq .01$ ) and the confidence intervals did not include zero. For the portion of the model predicting that psychological empowerment will have an indirect effect on the relationship between positive leadership and satisfaction with life, the path was significant. Positive leadership has an indirect effect on satisfaction with life by means of psychological empowerment. **H5** is therefore accepted.

Figure 2 shows positive path coefficients between positive leadership and psychological empowerment, between positive leadership and satisfaction with life and indirect effects are shown via psychological empowerment to work engagement and satisfaction with life. The postulated path between positive leadership and work engagement was insignificant, but a positive path coefficient was found between work engagement and satisfaction with life.

The model fit indices suggests that the relationships postulated in the model account for a considerable percentage of the co-variation in the data. The model accounts for 20% of the variance in psychological empowerment, 53% of the variance in work engagement and 25% of the variance in satisfaction with life.

## Discussion

The aim of this study was to investigate the relationship between positive leadership behaviour, psychological empowerment, work engagement and employees' satisfaction with life in a chemical organisation. The results indicated that statistically significant correlations exist between the constructs of positive leadership, psychological empowerment, work engagement and employees' satisfaction with life. Perceived positive leader behaviour had direct effects on psychological empowerment and satisfaction with life.

Positive leadership was significantly positively related to psychological empowerment and this result is supported



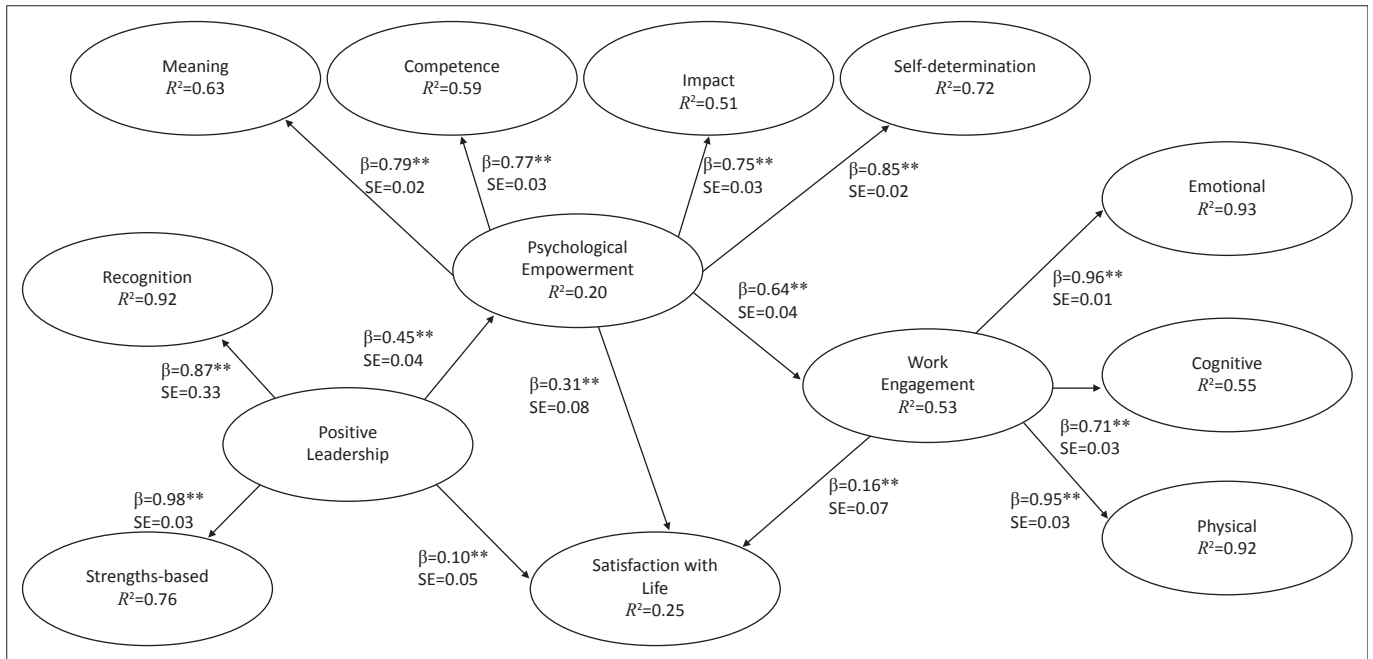


FIGURE 2: Maximum likelihood estimate for the hypothesised model.

\* $p < .05$ . \*\* $p < .01$ .

in other research on positive leadership practices (Barroso Castro *et al.*, 2008; Kark *et al.*, 2003; Seibert *et al.*, 2011; Stander & Rothmann, 2010). A positive leader's ability to match an employee's strengths and talents to their tasks and their regular recognition of accomplishments increases an employee's feelings of meaning towards their work, their awareness of their competence to do their work, the perception of their impact over what happens in their workplace and their ability to decide how their work is done (Quinn & Spreitzer, 1997; Spreitzer, 1995). In practice, this means that employees who have gone through difficult organisational circumstances (as in this study) will benefit from a leader who focuses on the positive and empowers them to do well regardless of their circumstances. The results show a significant correlation (large effect) between positive leadership and the self-determination aspect of psychological empowerment. This may indicate that a positive leadership approach enhances employees' perception that they can freely choose how they do their work without being micro-managed. Bono and Judge (2003) found that followers have a greater ability to adopt autonomous goals and are more satisfied when their leaders support their followers' need for self-direction.

The path coefficient between positive leadership and work engagement was not significant. This is supported by Arakawa and Greenberg (2007) who could not establish a correlation between positive leadership and engagement, while Stander and Mostert (2013) found individual strengths used a strong predictor of work engagement. Positive leadership and psychological empowerment explains 53% of the variance in work engagement. This suggests that when leaders focus on strengths, recognition and employees' psychological empowerment (meaning, competence, impact and self-determination) work engagement will increase.

Employees will be more cognitively alert, emotionally available and have physical energy to perform in their job (Kahn, 1990). Psychologically empowered employees are more likely to experience increased levels of work engagement with simultaneous decreased levels of burnout (Bhatnagar, 2012; De Villiers & Stander, 2011). Practically this implies that employees who experience trying times at work will be positively affected by a positive leadership approach. A work environment where employee's experience that their strengths are optimised and they receive recognition for their contribution, will lead to feelings of being in control and experiencing meaning. As an end result they will be more energised to do their job. Forest *et al.* (2012) are of the opinion that strengths should energise and motivate people towards optimising their potential and being action-driven (Elston & Boniwell, 2011). Stander and Mostert (2013) postulate that it is crucial for management to focus on strengths as a way of achieving organisational objectives. For the organisation, strengths use has been shown to increase the levels of engagement (Biswas-Diener, Kashdan, & Minhas, 2011) which are ultimately linked to improved satisfaction levels (Cameron, Mora, Leutscher, & Calarco, 2011).

This study found that satisfaction with life is impacted positively by psychological empowerment. Furthermore, positive leadership had a moderate indirect effect on satisfaction with life through psychological empowerment, indicating that the combination of positive leadership practices and higher psychological empowerment increases employees' overall satisfaction with life (Aryee & Chen 2006; Dewettinck & Van Aemeijde, 2011; Durand, 2007). This indicates that employees may feel more satisfied with their life in general when their leaders are positive and they feel more empowered while experiencing tough times at work. There is a strong relationship between the recognition

component of positive leadership and satisfaction with life. This could indicate that when a leader gives recognition to an employee it carries over to their general satisfaction with life. Work engagement contributed significantly to satisfaction with life. This may indicate that employees, who become absorbed in their jobs, are passionate and enthusiastic about their job and feel physically alive and vital at work, may be more satisfied with their lives in general.

Finally, the findings indicate an interesting outcome, in that positive leadership, psychological empowerment and work engagement have a combined positive effect on satisfaction with life. Spreitzer (2007) postulates that there could be a spill over effect between work domains and life domains. Purnell and Johnson (2008) encourage organisations to look after their employees' well-being in trying times. The combined effect of the work related variables of positive leadership behaviour (strengths-based and recognition), high employee psychological empowerment (meaning, competence, self-determination and impact) and high work engagement (cognitive, emotional and physical) has a positive influence on the non-work related variable of satisfaction with life (explaining 25% of the variance in satisfaction with life). The results support the opinion by Rodriguez & Rodriguez, (2015) that leadership must discover positive energy, stimulate the best in each employee and develop the potential. From a wellness approach it is encouraging that organisational interventions, in this case leadership development, can contribute to the overall wellness of employees. By developing a positive approach by leaders, organisations can contribute to positive organisational as well as individual outcomes.

The resultant practical implications of this study are numerous. It seems that leaders who add to their leadership style, a strengths-based approach and who make a point of giving recognition to their employees, influence positive outcomes regarding their employees' psychological empowerment, work engagement and satisfaction with life. This may increase an employee's feelings of empowerment, their attitude towards work and their positive perception of their life as a whole. Organisations should do more to develop managers as people developers, focusing on identifying and optimising employees potential. By developing their people, managers will know how to help those employees who report to them to create meaning in their jobs, and take control of their circumstances. This will lead to energised employees that experience satisfaction in life.

## Recommendations and limitations

Based on the results, positive leaders have a positive influence on employees' psychological empowerment, work engagement and satisfaction with life. It is recommended that organisations focus on the training and coaching of leaders on how to identify and harness employees' strengths. Leaders should also be encouraged to give genuine recognition to employees and their accomplishments. It was also seen that psychological empowerment enhances

the effect that positive leadership has on work engagement and satisfaction with life. Firstly, the organisation should focus on increasing the leaders' psychological empowerment through leadership discussions and coaching. Interventions focused on improving the psychological empowerment of employees are encouraged. Specific focus should be on the self-determination aspect of psychological empowerment through group discussion, role-play and individual coaching. From the findings, it was shown that the work related aspect of positive leadership, psychological empowerment and work engagement has a significant effect on satisfaction with life, which is a non-work related aspect. By focusing on the above interventions, satisfaction with life will be positively affected.

Limitations include, among others, that the data was retrieved from a cross-sectional research design, thus inferences about causal relationships were excluded and the participants' feelings, attitudes and beliefs are representative of only one point in time. The use of self-report instruments have certain limitations.

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### Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

### Authors' contributions

M.W.S. (North-West University) was the Supervisor/Study Leader, J.L. (North-West University) was the co supervisor and T.N. (North-West University) was responsible for the research study and compiled the theoretical component as well as prepared the calculations and she also wrote the manuscript.

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