

AUTHENTIC LEADERSHIP, PSYCHOLOGICAL CAPITAL, ORGANISATIONAL CLIMATE AND WORK ENGAGEMENT

Simeon Amunkete

Industrial Psychologist and Senior Manager: Human Resources, Nam Power, Windhoek, Namibia

ABSTRACT

The aim of the study was to investigate the relations between authentic leadership, psychological capital, organisational climate, and work engagement in state-owned enterprises. A cross-sectional survey was used in a multilevel design with a convenience sample of 452 employees. The Authentic Leadership Questionnaire, Psychological Capital Questionnaire, Supportive Organisational Climate Questionnaires and the Work Engagement Scale were administered. The results showed that authentic leadership and psychological capital predicted work engagement. Climate on the organisational level was related to work engagement on an individual level, but only if authentic leadership and psychological capital were not included in the model. Psychological capital mediated the relation between authentic leadership and work engagement on an individual level.

Keywords: Authentic leadership, psychological capital, supportive organisational climate, and work engagement

INTRODUCTION

Organisations face a challenge of optimising human potential and obtaining a return on investment (Cardy, 2004; Luthans, Avey, Clapp-Smith, & Li, 2008). Organisations could obtain these outcomes by identifying and developing positive psychological capacities of individuals and engaging them at work (Arrowsmith & Parker, 2013; Gruman & Saks, 2010; Rothmann, 2013). Studies indeed showed that work engagement remains one of the top priorities for organisations (Clinton & Woollard, 2012). Work engagement affects work performance, customer satisfaction, productivity, low absenteeism, and low turnover, and indirectly contributes to the bottom line of organisations (Emmott, 2009; Gaul, 2013).

Positive workplace conditions and relationships between leaders and followers have been found to be associated with high levels of work engagement (Jenkins & Delbridge, 2013). Research showed that work engagement could be affected by the relationship between workers and leaders (Hassan & Ahmed, 2011; Schaufeli & Salanova, 2007), and the climate of organisations (Saks, 2006). Moreover, Siu, Bakker, and Jiang (2013) found that positive psychological capacities could affect work engagement. Luthans et al. (2004) developed the psychological capital model that focuses on the effects of psychological capacities (including optimism, self-efficacy, hope and resilience) on employee and organisational outcomes. Various studies (e.g., Rego, Sousa, Marques, & Cunha, 2012; Zamahani, Ghorbani, & Rezaei, 2011) showed that leadership and

organisational factors can influence psychological capital. Bakker and Demerouti (2008) found that developing such psychological capacities contribute to work engagement.

While studies have been focussing on the antecedents of psychological capital (Avey, 2014; Luthans, Norman, Avolio, & Avey, 2008), various research gaps exist. First, the association between psychological capital and work engagement is not clear. Second, while it has been shown that leadership contributes to psychological capital and work engagement, the indirect effects of leadership on work engagement via psychological capital have not been studied. Third, few studies have focused on organizational level antecedents of work engagement. Saks (2006) included an individual perspective on engagement but argued that organisational arrangements may have a stronger effect on employees' tendency to engage. Fourth, studies regarding the antecedents of both psychological capital and work engagement have focussed on the individual level rather than on the organisational level. Indeed Luthans (2012) acknowledged that studies regarding psychological capital did not focus on both the individual and organisational levels. It is important to investigate whether authentic leadership, psychological capital and organisational climate are valuable resources among employees of state-owned enterprises. These resources could enhance the engagement of employees and eventually increase their well-being and performance. This current study aimed at addressing the gaps mentioned above in the literature.

Work engagement

Variations are evident in the terms used to refer to the engagement concept, e.g. "work engagement" and "employee engagement" (Truss, Delbridge, Alfes, Shantz, & Soane, 2014). The term *work engagement* refers to individuals' relationship with their jobs. *Employee engagement* refers to the individuals' relationship with their jobs as well as with their organisations (Schaufeli, 2014). For purposes of this study, the term work engagement is used.

Work engagement is defined as the "harnessing of organizational members' selves to their work role by which they employ and express themselves physically, cognitively and emotionally during role performance" (Kahn, 1990, p. 694). Kahn (1990) argues that people can use varying degrees of their selves physically, cognitively, and emotionally in the work they perform. When employees draw on their selves to perform their roles, they perform better. Furthermore, engagement is the simultaneous employment and expression of a person's preferred self in task behaviours that promote connections to work and others (Kahn & Heaphy, 2014). It comprises three dimensions, namely physical, cognitive and emotional engagement (Macey & Schneider, 2008).

Kahn and Heaphy (2014) identified a need to focus on the effects of relationships on work engagement. Relationships are the backbone of getting work accomplished, either on an individual or team level (Bechky, 2006). In pursuing the relational contexts of engagement with specific reference to leaders, studies have confirmed the explanation of work engagement through psychological capital. Simonis and Buitendach (2013) found a significant relation

between psychological capital and work engagement among call centre employees. Similarly, Siu et al. (2013) found empirical evidence of a relation between psychological capital and study engagement - among university students. Both studies confirm the role of psychological capital in enhancing work engagement as one of the desirable workplace outcomes.

Research in this area has been focusing on the individual level of analysis. More specifically research focused on individual employees or leaders and the characteristics of the individual (Yammarino, Dionne, Schriesheim, & Dansereau, 2008). A need exists to explore the effects of individual and organisational level variables on work engagement (Yammarino et al., 2008). Authentic leadership and psychological capital are examples of individual-level variables. Organisational climate is a case of a variable on an organisational level. Studies often focused on the effects perceptions of job demands and resources (Bakker & Demerouti, 2008; Fleck & Inceoglu, 2010) on engagement, but psychological capacities of employees have not often been considered.

Psychological Capital

Psychological capital is a person's positive psychological state of development and is characterised by four components, namely self-efficacy, optimism, hope and resiliency (Luthans et al., 2007). Each of these components has a considerable theory that has contributed to a combined theoretical foundation of psychological capital (Luthans, Avolio, et al., 2007).

Self-efficacy is based on Bandura's (1997) social cognitive theory which attempts to understand human reasoning, action motivation, and emotion. The theory assumes that people are active shapers instead of passive reactors of their environments (Kappagoda, Othmans, & deAlwis, 2014). Self-efficacy refers to the belief that a person has abilities to find the necessary motivation and resources to accomplish tasks in a given context (Avey, Luthans, & Jensen, 2009). Self-efficacious people believe in their strengths. Therefore they generate motivation, cognitive resources and courses of action required to accomplish specific tasks. Self-efficacy affects the behaviour that people engage in, and how much they persevere in their efforts in the face of obstacles and challenges.

Snyder et al. (1991, p. 287) define *hope* as an interactively derived sense of successful (a) agency (goal-directed energy) and (b) pathways (planning to meet goals). Hope reflects the belief that one can find pathways to desired goals and become motivated to use those pathways (Avey et al., 2009; Luthans, Avolio, Avey, & Norman, 2007). Hopeful people are motivated by being aware of their capability to come up with different ways of succeeding in what they are doing.

The concept *optimism* is based on the theory of attribution founded by Seligman (1998). Optimists anticipate positive things to happen to them. Optimists believe that positive events come about as a result of internal, permanent and inescapable causes, and that negative events are caused by external, temporary and situation-specific ones (Luthans et al., 2007; Seligman, 1998). Optimists engage in more focused and active coping than pessimists.

The theoretical foundation for *resilience* is the work of Masten (2001) and Masten and Reed (2002). Resilience is defined as “a positive coping and adaptation in the face of significant risk or adversity”(Luthans, Avolio et al., 2007, p. 547). Resilient people have abilities to deal with adversity, uncertainty, overwhelming events and changes such as increased responsibility (Luthans, Youssef, & Avolio, 2007; Masten, 2001). They can deal with difficult situations, embrace new learning and experiences, and find meaning in life (Luthans et al., 2007).

Psychological capital as a high-order composite and the individual positive psychological resources/components have been found to be related to work engagement (Sweetman & Luthans, 2010; Youssef-Morgan & Bockorny, 2014). Research by Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009a, 2009b) found personal resources (e.g., self-efficacy and optimism) and job resources affect work engagement. Psychological capital therefore is a resource set that can mediate the relation between job resources and engagement (Youssef-Morgan & Bockorny, 2014).

Authentic Leadership

Leaders play a critical role in creating an environment conducive to work engagement in organisations (Kahn & Heaphy, 2014; Soane, 2014). According to Harter and Adkins (2015), leaders’ behaviours account for up to 70% of the variance in work engagement scores. Trust in a leader, which is affected by authentic leadership, leads to work engagement (Wang & Hsieh, 2013). Porath (2014) found that employees were 55% more engaged when leaders treated them with respect. Half of workers in her study did not feel respected by their leaders.

Authentic leadership is a high-order core construct composed of four related components, namely, internalised moral perspective, self-awareness, relational transparency and balanced processing (Luthans et al., 2007). Self-awareness refers to the extent that a person is conscious of his/her personal characteristics and how these impact others (Penger & Cěrne, 2014). Balanced processing refers to the extent to which leaders show that they objectively analyse data free from bias before coming to a decision (Penger & Cěrne, 2014). Authentic leaders do not distort, exaggerate or ignore information that has been collected, but rather pay attention to both positive and negative interpretations about themselves and their leadership style. Internalised moral perspective means that leaders possess and display internal moral standards and values rather than adopting behaviours due to external pressure (Penger & Cěrne, 2014). This process includes one’s motives, goals and values that are completely transparent to followers, leading by example and demonstrating consistency between espoused theories and theories-in-use (Avolio, 2005). Relational transparency encompasses all of the earlier capabilities in the act of open sharing of information and self-disclosure. Authentic leaders are transparent in revealing their expressions to their followers (Mazutis & Slawinski, 2008).

These four factors were found to be part of a higher-order factor (Rego et al., 2012), and which is the central factor among the four, overlapping authentic leadership components. Authentic leadership was found to have an effect on important work attitudes and behaviours (Rego et al.,

2012).

The influence of authentic leadership on employee performance may be mediated by other factors (mediators) such as psychological capital and supportive organisational climate (Khan, 2010). There have been several theoretical works in the literature that propose a link between authentic leadership, psychological capital and performance (Avolio & Gardner, 2005). Hence authentic leaders contribute to employees being personally engaged in their work.

Supportive Organisational Climate

Luthans, Norman, et al. (2008, p. 225) defined supportive organisational climate as “the overall amount of perceived support employees received from their immediate peers, other departments, and their supervisor that they view as helping them to perform their work duties.” A supportive context is needed for human resources to achieve sustainable growth and performance. A supportive organisational climate refers to the perceived support employees feel they receive from their leaders and colleagues that help them to perform their work duties successfully (Luthans et al., 2008). This perceived supportive climate relates to the desired outcomes such as work engagement (Luthans et al., 2008).

Several researchers attempted to link authentic leadership with positive organisational behaviour (Luthans & Avolio, 2009; Yammarino et al., 2008), and work engagement (Alok & Israel, 2012; Hassam & Ahmed, 2011). Research provides evidence that authentic leadership and work engagement are related (Gardner, Avolio, Luthans, May, & Walumbwa, 2005). When the employees are treated in a fair and caring manner, they are more committed and more likely to have positive attitudes concerning their work (Dirks & Ferrin, 2002; Jensen & Luthans, 2006).

Several studies have investigated the relation between authentic leadership, psychological capital, and work engagement. Authentic leaders foster positive organisational climates that are moral, communicative and supportive (Woolley, Caza, & Levy, 2011). These positive organisational climates affect the hope, optimism, self-efficacy and resilience of employees (Luthans & Avolio, 2003).

The perceptions of a supportive climate may create the positive conditions necessary for psychological capital to flourish (Luthans et al., 2008). Psychological capital may play a mediating role between supportive organisational climate and employee outcomes (Luthans et al., 2008). For instance, when employees feel they are supported, they are likely to use their pathway of hope to try new methods for executing their tasks within their organisational context. In addition, a supportive organisational climate may act as a contextual resource for employees to ‘bounce back’ during adversarial times (resiliency). Employees can also remain focussed and respond in a positive way after a setback (efficacy). Finally, when employees commit mistakes, these are attributed to external, unstable and concrete issues, and will encourage employees to be more optimistic in their future attributions (Luthans et al., 2008).

A supportive context is needed for human resources to achieve sustainable growth and performance. Luthans et al. (2008) asserted that this perceived supportive climate relates to desired outcomes (e.g. work engagement). Research on organisational support climate acknowledges the importance of individual factors such as ability and effort in the link between organisational support climate and performance. There seems to be a shortage of research conducted in the area of how supportive organisational climate is contributing to work engagement. It is against this background that supportive organisational climate will be considered a supportive context within which relational contexts of personal engagement is taking place at the workplace.

Aim and Hypotheses

The aim of this study was to investigate the relations among authentic leadership, psychological capital and work engagement, to establish whether psychological capital mediates the relation between authentic leadership and work engagement. Further, to establish whether supportive climate at organisational level predicts work engagement. Based on the Job Demands-Resources model, it can be expected that psychological capital change work demands into challenges (Bakker & Demerouti, 2008). Furthermore, employees with a higher psychological capital are more intrinsically motivated, which promotes work engagement.

The author proposes that a leader that displays high levels of self-awareness, balanced processing, self-guidance and relational transparency (Gardner et al., 2005; Rego et al., 2012; Zamahani et al., 2011), tends to enhance psychological capital (hope, efficacy, resilience and optimism) among employees. The perceptions of a supportive organisational climate create a positive condition for authentic leadership, psychological capital and work engagement to flourish in organisations. For the leaders to be able to provide authentic leadership, which influences the psychological capital among employees and eventually makes employees to be engaged in their work, organisational climate should be positive and supportive.

Given the analytical strategy and based on the literature review, the following hypotheses were set for this study:

Hypothesis 1: Authentic leadership is positively associated with psychological capital.

Hypothesis 2: A supportive organisational climate on individual level is positively associated with psychological capital.

Hypothesis 3: Authentic leadership is positively associated with work engagement.

Hypothesis 4: Psychological capital is positively associated with work engagement.

Hypothesis 5: A supportive organisational climate is positively associated with work engagement on organisational level.

Hypothesis 6: Authentic leadership is positively associated with work engagement on organisational level.

Hypothesis 7: Psychological capital is positively associated with work engagement on organisational level.

Hypothesis 8: Authentic leadership indirectly affects work engagement via psychological capital.

METHOD**Research Design**

The author used a quantitative research approach to achieve the research objectives. A cross-sectional survey design with questionnaires was used to obtain information from the target population. This study used a multi-level design that focused on working with individuals *within* organisations. Possible reasons for work engagement were studied within both the individual and the organisation.

Participants

The target population for this study was employees from 24 state-owned enterprises. The participating companies included regulatory, service rendering, economic and productive and general enterprises. A convenience sampling was used to select the sample for this study. A total of 500 respondents representing 24 organisations were approached to take part in this study. A final sample of 452 (228 male and 224 female) from 20 organisations completed the survey online resulting in a response rate of 90.4%.

The ages of the participants varied from 18 to 63 (mean = 37.41; *SD* = 8.60). The length of service in the various companies varied between less than one year and 30 years. Concerning education, 83.4% of the participants had tertiary qualifications. Of the 452 participants, 55.8% was non-managerial employees, 33% was middle management, and the remaining 11.2% was senior or executive management. About 73% of the participants earned a salary less than N\$ 40 000 per month. Table 1 gives the characteristics of the participants.

Table 1*Characteristics of Participants (N=452)*

Item	Category	Frequency	Percentage
Gender	Male	228	50.4
	Female	224	49.6
	Total	452	100.0
Age	Below 23	4	0.9
	23 – 30	105	23.2
	31 – 39	164	36.3
	40 – 45	90	19.9
	46 –55	79	17.5
	Over 55	10	2.2
Education	Grade 12	75	16.6
	Diploma	130	28.8
	Degree	146	32.3
	Postgraduate degree	101	22.3

Year of Experience	Less than 3	18	4.0
	3 – 8	139	30.7
	9 – 14	102	22.6
	15 – 20	89	19.7
	21 – 26	62	13.7
	Over 27	42	9.3
Job Level	Executive Management	23	5.0
	Senior Management	28	6.2
	Middle Management	149	33.0
	Non-Managerial	252	55.8
	Total	452	100.0
Years in Job	Less than 1	11	2.4
	1 – 2	122	27.0
	3 – 5	133	29.4
	6 – 10	114	25.2
	More than 10	72	16.0
Salary Range p/m	Less than N\$ 10 000	46	10.2
	10 000 – 19 999	163	36.1
	20 000 – 39 999	122	27.0
	40 000 – 59 999	54	11.9
	60 000 – 79 999	25	5.5
	80 000 – 99 999	11	2.4
	Over 100 000	31	6.9

Measuring Instruments

The study used the *Authentic Leadership Questionnaire* (ALQ; Avolio & Gardner, 2005) to measure authentic leadership. The questionnaire comprises 16 items, which measure four scales of the authentic leadership, i.e. self-awareness (four items, e.g. “My leader accurately describes how others view his or her capabilities”), balanced processing (three items, e.g. “My leader analyses relevant data before coming to a decision”), ethical/moral (four items, e.g. “My leader makes decisions based on his or her core values”) and relational transparency (five items, e.g. “My leader tells you the hard truth”). The answering format for all the questions ranges from 1 (*not at all*) to 5 (*frequently, if not always*). Zamahani et al. (2011) and Rego et al. (2012) found reliabilities for this instrument to range between $\alpha = 0.80$ and $\alpha = 0.93$ for the four scales.

The *Supportive Organisational Climate Questionnaire* (SOCQ; Rogg, Schmidt, Shull, & Schmidt, 2001) was used to measure supportive organisational climate. Three of the four original dimensions considering managerial, employees and departments’ perspectives (16 items) were used. Sample items of the questionnaire include “Managers follow through on commitments,” “Departments cooperate to get the job done effectively and efficiently,” and “Employees trust each other”. The response categories of the questionnaire vary from 1 (*strongly disagree*) to 6

(*strongly agree*). Hughes, Avey, and Norman (2008) found the scale and its components to be reliable within acceptable levels, with alphas ranging from 0.80 to 0.90.

The study used the *Psychological Capital Questionnaire* (PCQ; Luthans, Avolio, & Avey, 2007) to measure psychological capital. The 23-item PCQ consists of measure dimensions, namely hope (six items, e.g. “There are lots of ways around any problem”); resilience (six items, e.g. “I feel I can handle many things at a time at this job”); optimism (five items, e.g. “If something can go wrong for me work-wise, it will”); and self-efficacy (six items, e.g. “I feel confident helping to set targets/goals in my work area”). The PCQ responses are on a six-point Likert-type scale with categories ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The subscales and the overall PCQ demonstrated adequate internal reliability and construct validity (Avey, Nimmicht, & Pigeon, 2010).

An adapted version of the *Work Engagement Scale* (WES; May, Gilson, & Harter, 2004) was used to measure work engagement. For all items, a seven-point frequency scale varying from 1 (*almost never or never*) to 7 (*always or almost always*) was used. The nine items reflect the three components of Kahn’s (1990) conceptualisation of work engagement, namely cognitive (two items; e.g. “I am very absorbed in my work”), emotional (three items; e.g. “I am passionate about my work”), and physical engagement (three items; e.g. “I feel alive and vital at work”). An alpha coefficient of 0.85 was found for the total scale (Rothmann&Rothmann, 2010).

Data Analysis

Latent variable modelling with Mplus version 7.31 (Muthén & Muthén, 1998-2014) was used to test the measurement and structural models. Latent variable modelling is advantageous. Since the biasing effects of measurement error are reduced, multilevel models can be tested, indices of overall fit are obtained and indirect effects can be evaluated (Wang & Wang, 2012). A weighted least-squares with mean and variance adjustment (WLSMV) estimator was used to test the models. This estimator is robust; it does not assume normally distributed variables and it provides the best option for modelling categorical data (Wang & Wang, 2012).

The following Mplus fit indices were used in this study: absolute fit indices, which included the Chi-square statistic (the test of absolute fit of the model), the weighted root mean square residual (WRMR) and the root means square error of approximation (RMSEA); incremental fit indices, which included the Tucker-Lewis Index (TLI); and the Comparative Fit Index (CFI) (West, Taylor, & Wu, 2012). Criticism against the use of χ^2 is that it is a strict test that detects trivial differences between the hypothesised model and the data. Therefore the χ^2 test is often not of general interest when the fit of models is tested.

Various practical fit indices have been developed to evaluate model fit. The Comparative Fit Index (CFI) compares the hypothesised and independent models but takes sample size into account. The Tucker-Lewis Index (TLI) is a relative measure of co-variation explained by the hypothesised model that has been specifically designed for the assessment of factor models.

Critical values for good model fit have been recommended for the CFI and TLI to be acceptable above the 0.90 level (Wang & Wang, 2012), although Hu and Bentler (1999) recommended a cut-off value of 0.95. RMSEA provides an indication of the overall amount of error in the hypothesized model-data fit, relative to the number of estimated parameters (complexity) in the model. The recommended acceptable levels of the RMSEA should be 0.05 or less and should not exceed 0.08. West et al. (2012) point out that cut-off standards for model fit recommended by Hu and Bentler (1999) were based on simulation studies and should be used as rough indicators only. This is even more applicable when models and data further away from confirmatory factor analysis models with complete data are studied.

Raykov's (2009) confirmatory factor analysis-based estimate of scale reliability (ρ) was computed for each scale. This estimate of reliability provides a more dependable estimate of scale reliability if items are not tau-equivalent (Wang & Wang, 2012).

Multilevel analyses were performed with individual scores nested within organisations. The robust maximum likelihood estimator was used to test multilevel models on factor scores that were computed based on the measurement model. Multilevel modelling allows the researcher to consider both the individual and organisational levels of hierarchically structured data simultaneously (Hox, 2010). Particularly, the author investigated the extent to which employees from the same organisation shared similar perceptions in terms of organisational support. Intra-class correlations (ICC) provide an estimate of what proportion of the total variance is attributed to within area/role homogeneity (Hox, 2010).

The multilevel analyses were carried out in the following steps (Geiser, 2010). First, the ICC was calculated in the null model (intercept-only model) to determine what proportion of the variance in work engagement is attributable to organisational climate and what is attributable to the individual level. No predictor was included in the first step. Second, the one-way random effects model was tested. This model included predictors on an individual level (authentic leadership and psychological capital), but no predictor at an organisational level. Third, the means-as-outcome model was tested. This model included a predictor at the organisational level (organisational climate), but no predictors on an individual level. Fourth, an intercepts-and-slopes-as-outcomes model was tested. In this model, the regression lines for the regressions of the independent variables on the dependent variable could now have a different intercept and a different slope in each organisation. Lastly, a fixed effects model was tested.

Research Procedure

The author obtained permission from state-owned enterprises to administer the online survey to employees. Participation in the survey was voluntary and anonymous. By virtue of their involvement, the respondents were informed that they have given consent to partake in the survey. Confidentiality was emphasised throughout the research process. The author conducted this research within the ethics approval (Number: SH-SB-2012-0074), by the Ethics Committee of North-West University (Vaal Triangle Campus), South Africa in February 2013. The survey

questionnaire was administered online. A covering note accompanied the questionnaire. The note explained the purpose and emphasised confidentiality of the research project. The author made use of a questionnaire to gather data online between February and July 2013. The online survey captured the raw data. The completed raw data were then converted to an SPSS dataset for use in Mplus 7.31.

RESULTS

Testing the Measurement Model

Using the confirmatory factor analysis (CFA), the author tested a four-factor measurement model as well as alternative models to assess whether each of the measurement items would load significantly onto the scales with which they were associated. The author tested five models.

Model 1 consisted of four latent variables: Authentic leadership, which consisted of four latent variables: relational transparency (measured by means of four items), self-regulation/moral/ethics (measured by means of five items), balanced processing (measured by means of three items) and self-awareness (also measured by means of four items). Supportive organisational climate consisted of three latent variables: managerial climate (measured by means of eight items), employee climate (measured by means of five items) and departmental climate (measured by means of three items). Psychological capital consisted of four latent variables, namely self-efficacy (measured by means of six items), hope (measured by means of six items), resilience (measured by means of six items) and optimism (also measured by means of six items). Work engagement was measured by means of nine items. In model 1, the author allowed all the latent variables to correlate.

Models 2, 3, 4, and 5 followed the same template. For model 2, the author specified 24 items of psychological capital (without classifying them according to the four components of hope, efficacy, resilience and optimism) and correlated them with the four latent variables of authentic leadership (relational transparency, self-regulation, balanced processing and self-awareness), three latent variables of supportive organisational climate (managerial, employee and departmental), and the nine items measuring work engagement. The author further specified in model 3 the four latent variables of psychological capital, and allowed the 16 items measuring the latent variables of authentic leadership (without classifying the four components of relational transparency, self-regulation, balanced processing and self-awareness respectively), with the three latent variables measuring supportive organisational climate, and the nine items that measure work engagement. For model 4, the author specified four latent variables measuring psychological capital loaded onto four latent variables measuring authentic leadership, three latent variables measuring supportive organisational climate and the nine items of work engagement. Model 5 specifies all the 65 items together that measure four variables: psychological capital, authentic leadership, supportive organisational climate and work engagement as one latent factor.

Tables 2 presents fit statistics for the test of the various models.

Table 2

Fit Statistics of Competing Measurement Models

Model	χ^2	<i>df</i>	TLI	CFI	RMSEA	WRMR
1	3934.40	1998	0.95	0.95	0.05* [0.044, 0.048]	1.52
2	4331.27	1996	0.94	0.94	0.05* [0.049, 0.053]	1.63
3	3971.47	1996	0.95	0.95	0.05* [0.045, 0.049]	1.52
4	3826.47	1992	0.95	0.96	0.05* [0.043, 0.047]	1.48
5	15685.92	2015	0.66	0.67	0.12 [0.121, 0.124]	3.99

χ^2 , chi-square statistic; *df*, degrees of freedom; TLI, Tucker-Lewis Index; CFI, Comparative Fit Index; RMSEA, root mean square error of approximation; WRMR, Weighted Root Men Square Residual

The author obtained an χ^2 value of 3934.40 (*df* = 1998) for the hypothesised measurement model. The fit statistics on the four fit indices were acceptable: TLI = 0.95, CFI = 0.95 and RMSEA = 0.05 and WRMR = 1.52. The hypothesised model had a fairly acceptable fit with the data on the fit indices.

The analysis continued in an exploratory mode to improve the fit of the selected model. One item measuring optimism from the psychological capital questionnaire, Item 20: “If something goes wrong for me work-wise, it will” was removed because of its high residual variance and low *R*² value. Another item from Engagement Scale, Item 3: “When I am working, I often lose track of time,” was removed for the same reasons. The statistics for the revised model showed that the model fit improved significantly: $\chi^2 = 3646.80$, *df* = 873; CFI = 0.96; TLI = 0.96; RMSEA = 0.05 [0.044, 0.048] and WRMR = 1.48. These statistics show a good fit for the hypothesised model.

Testing the Structural Model

Table 3 reports the descriptive statistics, reliabilities and correlations of authentic leadership, psychological capital, supportive organisational climate, and work engagement.

Table 3

Descriptive Statistics, Reliability Coefficients and Correlations of the Scales (N = 452)

Variable	ρ	1	2	3
1. Psychological capital	0.97	-	-	-
2. Authentic leadership	0.87	0.37**	-	-

3. Organisational climate	0.82	0.56**	0.69**	-
4. Work engagement	0.82	0.77**	0.35**	0.51**

* $p < 0.05$; ** $p < 0.01$

Table 3 shows scale reliabilities ranging from 0.82 to 0.97, which indicate acceptable internal consistency (Raykov, 2009; Wang & Wang, 2012). Table 3 shows that authentic leadership is positively related to psychological capital (medium effect). Hypothesis 1 is accepted. Psychological capital is also positively correlated to a supportive organisational climate on an individual level. Hypothesis 2 is accepted. Furthermore, authentic leadership is positively correlated to work engagement (medium effect). Hypothesis 3 is accepted. Finally, psychological capital is significantly related to work engagement (large effect).

Multilevel Analyses

This section explains the multilevel regression model for two-level data. The parameters of multilevel regression models are estimated using regression coefficients and the variance components. The usual estimators in multilevel regression analysis are maximum likelihood (ML) estimators, but in this study, the WLSMV was used as the estimator. Table 4 presents the parameter estimates and standard errors for both models. The models with a lower deviance fit better than models with a higher deviance.

Table 4
Models of Work Engagement

Model	M0: Intercept only	M1: One-way Random Effects	M2: Means as Outcomes	M3: Intercepts and Slopes as Outcomes	M4: Fixed Effects
Fixed part	Coefficient (SE.)	Coefficient (SE.)	Coefficient (SE.)	Coefficient (SE.)	Coefficient (SE.)
Intercept	-0.02 (0.04)	-0.02 (0.02)	-0.01 (0.04)	-0.02 (0.03)	-0.02 (0.02)
Authentic leadership		0.06 (0.03)**		0.07 (0.04)	0.06 (0.04)*
Psychological capital		0.85 (0.02)**		(0.84 (0.09)**	0.85 (0.02)**
Organisational climate			0.31 (0.16)*	0.02 (0.08)	0.03 (0.08)
Random part					

σ^2_e	0.27 (0.02)**	0.11 (0.01)**	0.27 (0.02)**	0.11 (0.01)**	0.11 (0.01)**
σ^2_{u0}	0.02 (0.03)	0.00 (0.00)	0.01 (0.01)	0.00 (0.01)	0.00 (0.00)
σ^2_{u1}				0.00 (0.02)	
σ^2_{u2}				0.00 (0.01)	
Deviance	701.48	298.08	691.93	297.53	297.90

* $p < 0.05$; ** $p < 0.01$

σ^2_e - employee-level residual errors; σ^2_{u0} - organisations-level residual errors

The intra-class correlation was 0.01. Table 4 indicates that work engagement is significantly predicted by authentic leadership (beta = 0.06, SE = 0.03, $\beta = 0.07$, $p < 0.01$), and psychological capital (beta = 0.85, SE = 0.02, $\beta = 0.74$, $p < 0.01$). These two variables explained 59.6% of the total variance in work engagement. Table 4 also shows that work engagement is significantly predicted by organisational climate (beta = 0.31, SE = 0.16, $\beta = 0.82$, $p < 0.05$). Organisational climate explained 67% of the variance in work engagement.

In Table 4, the intercept-only model estimates the intercept as -0.02, which is the average work engagement across the organisations and employees. The variance of the employee-level residual errors, symbolised by σ^2_e , is estimated to be 0.27. The variance of the organisations-level residual errors, symbolised by σ^2_{u0} , is estimated to be 0.02. The parameter for employee-level is larger than the corresponding standard error; therefore significant, while the parameter for organisations-level is smaller than the corresponding standard error and is not significant. Since the intercept-only model contains no explanatory variables, the residual variances represent unexplained error variance. The deviance reported in Table 4 is a measure of model misfit: when explanatory variables to the model were added the deviance is expected to go down.

The second model in Table 4 includes authentic leadership and psychological capital on an individual level as explanatory variables. The regression coefficients of authentic leadership and psychological capital are significant, although the regression coefficient of the latter variable is substantially higher. Hypotheses 3 and 4 are accepted.

The third model in Table 4 includes organisational climate on a group level as an explanatory variable. The regression coefficient of organisational climate is significant, although the standard error was also high. Hypothesis 5 is accepted. However, the fourth model showed that when authentic leadership and psychological capital are on an individual level, and organisational climate on a group level were entered into the analysis, the latter variable was not statistically significant.

The model with the explanatory variables includes variance components for the regression coefficients of authentic leadership and psychological capital, symbolised by σ^2_{u1} and σ^2_{u2} in

Table 4. The variance of the regression coefficients for both authentic leadership and psychological capital are estimated to be -0.00 with a standard error of 0.01, and 0.00 with a standard error of 0.01 respectively. These variance components are not significant. Hypotheses 5-7 are rejected.

Indirect effect

To determine whether work engagement was directly affected by psychological capital, the procedure explained by Hayes (2013) was used. Bootstrapping (with 10,000 samples) was used to construct two-sided bias-corrected 95% confidence intervals (CIs) so as to evaluate indirect effects. The results showed that authentic leadership had a significant effect on work engagement via psychological capital: $\beta = 22$, $SE = 0.04$, $p < 0.01$, 95% BC CI [0.11, 0.26]. Hypothesis 8 is accepted.

DISCUSSION

The purpose of this study was to investigate the relation between psychological capital and work engagement and to establish the effect of antecedents of psychological capital such as authentic leadership and supportive organisational climate on work engagement in the state-owned enterprises in Namibia. The results of the reliability coefficients and the analysis of the correlations indicated that psychological capital was significantly related to authentic leadership, supportive organisational climate and work engagement. Similarly, authentic leadership was also found to be statistically related to supportive organisational climate and work engagement. A supportive organisational climate was significantly related to work engagement.

The relation between psychological capital and work engagement implies that when the level of psychological capital is high, employees in Namibian SOEs tend to be engaged in their work and their organisations. The results suggest a strong prevalence of workers' reported psychological capital and their perception of how engaged they are to their work and organisations. This finding supports and confirms the conclusion of other researchers (Simonis & Buitendach, 2013; Siu et al., 2013), namely, that psychological capital plays a vital role in enhancing work engagement.

Employees who display a high level of psychological capital tend to perceive themselves and be perceived by others as highly engaged in their work. They are likely to accomplish their duties well. This positive outcome may be perceived to lead employees to improve their level of psychological capital (resources), gain confidence in their work (self-efficacy), anticipate a positive future in their work (optimism and hope), and lead them to endeavour new challenges in their work (Siu et al., 2013).

The relation between a supportive organisational climate and work engagement yielded a positive result. A supportive organisational climate explained 67% of the variance in work engagement. The study considered a supportive climate within which relational contexts of

personal engagement is taking place such as managerial, departmental and employee dimensions. The result of this research confirmed the findings of Luthans et al. (2008), which demonstrated that the perceived supportive climate relates well to the desired employees outcomes such as work engagement.

Although the relation between authentic leadership and work engagement was found to be significant, this correlation was moderate and the regression coefficient was low. The higher the level of psychological capital becomes among the employees, the lower the extent of authentic leadership. Therefore, authentic leadership had an indirect effect on work engagement through psychological capital.

The study employed multilevel analyses to determine the relation between different variables at both the individual and organisation level. Researchers have shown that a supportive organisational climate is positively correlated to work engagement (Luthans et al., 2008), that psychological capital is related to work engagement (Simonis & Buitendach, 2013; Siu et al., 2009); and that authentic leadership leads to work engagement (Wang & Hsieh, 2013; Porath, 2014). However, the results of this study showed that these relations did not exist on an organisational level. As a result, the author could not confirm the relation between work engagement and supportive organisational climate, authentic leadership and psychological capital. Different factors might have contributed to this.

The sample size on the group level was relatively small. The sample size might have affected both the estimates and standard errors of the intercepts and random slopes due to the small number of groups. The negative impact of the small sample size decreases the power to identify and confirm some of the relationships that were hypothesised. Moineddin, Matheson, and Glazier (2007) recommend that a minimum group size of 50 is required to yield acceptable and valid estimates in a multilevel analysis approach. For future studies, the collection of data should be done from a large number of groups to ensure accurate analyses of data that illustrate the required effects and produce the anticipated results.

This study had various limitations. First, the research design was cross-sectional, whereby all the variables were measured simultaneously, and there is no evidence to suggest the causal relations. Although this study confirmed the relation between psychological capital and work engagement, and between supportive organisational climate and work engagement, by no means does this study imply causal inferences between different variables. The study cannot rule out the possibility of alternative hypotheses. Second, the size of the non-probability, convenient sample used was relatively small at the organisational level. Therefore the findings from this study cannot be used alone to generalise the outcomes to the entire population. Third, the study runs a risk of common method bias, whereby all the questionnaires used in the study were self-reported measures. The common method variance refers to the variance associated with the systematic influences on constructs by the method of collecting data (Whitman & Woszczyński, 2004). The problem with common method variance is that the researcher may end up finding some significant effects when the real effect was caused by the data collection used. However,

Johnson, Rosen, and Djurdjevic (2011) argue that common method variance is rarely strong enough to invalidate findings. This limitation can be minimised by employing multi-source data such as in-depth interviews and objective ratings.

Recommendations

The study confirmed that authentic leadership indeed has an effect on work engagement. The study also confirmed that psychological capital has an influence on work engagement and that authentic leadership relates positively to psychological capital. These findings imply that authentic leaders affect the psychological capacities of followers as well as their engagement. In addition to authentic leadership, employees tend to be engaged when their levels of psychological capital are high.

Based on these findings, the following recommendations are made: Managers and supervisors should be trained to develop their skills and capacities in authentic leadership. Authentic leadership must be integrated within the leadership development programmes of organisations to make managers aware of the benefits it has to work engagement. Management should be held accountable to keep their employees engaged since they have a significant role to play in contributing to work engagement through the type of leadership they display. This can be done by including work engagement in their performance reviews, whereby managers will be rated on how well they keep their employees engaged. Organisations should implement training and development programmes aimed at improving psychological capital. Developing psychological capital will enhance employees' level of engagement and encourage positive outcomes such as work performance (Luthans et al., 2007).

A need exists for a longitudinal study to be conducted on psychological capital and its antecedents and outcomes to enhance a body of knowledge of the research on organisational behaviour. It is also necessary to use a larger sample and explore multi-level analysis of these concepts to contribute to the future research on work engagement, authentic leadership and psychological capital.

REFERENCES

- Alok, K., & Israel, D. (2012). Authentic leadership and work engagement. *Indian Journal of Industrial Relations*, 47(3), 498–510.
- Arrowsmith, J., & Parker, J. (2013). The meaning of 'employee engagement' for the values and roles of HRM function. *The International Journal of Human Resource Management*, 24, 2692–2712.
- Avey, J. B. (2014). The left side of psychological capital: New evidence on the antecedents of psychological capital. *Journal of Leadership & Organizational Studies*, 21(2), 141–149.
- Avey, J. B., Luthans, F., & Jensen, S. (2009). Psychological capital: A positive resource for combating stress and turnover. *Human Resource Management*, 48, 677–693.
- Avey, J. B., Nimnicht, J. L., & Pigeon, N. G. (2010). Two fieldstudies examining the association

- between positive psychological capital and employee performance. *Leadership and Organisation Development Journal*, 31, 384–401.
- Avolio, B. J. (2005). *Leadership development in balance: Made/born*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Avolio, B. J., & Gardner, L. W. (2005). Authentic leadership development: Getting to the rot of positive forms of leadership. *Leadership Quarterly*, 16, 315–338.
- Bakker, A.B., & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International*, 13, 209–223.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Bechky, B. A. (2006). Gaffers, gofers, and grips: Role-based coordination in temporary organizations. *Organization Science*, 17, 3–21.
- Cardy, R. L. (2004). *Performance management: Concepts, skills, and exercises*. Armonk, NY: M. E. Sharpe.
- Clinton, M., & Woollard, S. (2012). *Facing continuing uncertainty: The state of HR*. London, United Kingdom: Speechly Bircham.
- Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: Meta-analytic findings and implications for research and practice. *Journal of Applied Psychology*, 87, 611–628.
- Emmott, M. (2009). An HR director's guide to employee engagement, A discussion paper; CIPD Retrieved from http://www.digitalopinion.co.uk/files/documents/An_HR_Directors_Guide_to_Employee_Engagement.pdf
- Fleck, S., & Inceoglu, I. (2010). A comprehensive framework for understanding and predicting engagement. In S. Albrecht (Ed.), *The handbook of employee engagement: Models, measures and practice* (pp. 31–42). Cheltenham, United Kingdom: Edward-Elgar Publishing House.
- Gardner, W. L., Avolio, B. J., Luthans, F., May, D. R., & Walumbwa, F. O. (2005). Can you see the real me? A self-based model of authentic leader and follower development. *The Leadership Quarterly*, 16, 343–372.
- Gaul, P. (2013). The magic triangle of employee engagement: A new study provides a model for organizations, management, and employees to work together. *Talent Development*, 67(11), 20 pages.
- Geiser, C. (2010). *Data analysis with Mplus*. New York, NY: The Guilford Press.
- Gruman, A. J., & Saks, A. M. (2011). Performance management and employee engagement. *Human Resource Management Review*, 21, 123–136 .
- Harter, J., & Adkins, A. (2015, April). What great managers do to engage employees. *Harvard Business Review*. Retrieved from <https://hbr.org/2015/04/what-great-managers-do-to-engage-employees>
- Hassan, A., & Ahmed, F. (2011). Authentic leadership, trust and work engagement. *International Journal of Human and Social Sciences*, 6(3), 164–170.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.
- Hox, J. J. (2010). *Multilevel analysis: Techniques and applications* (2nd ed.). New York, NY: Routledge.

- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1–55.
- Hughes, L.W., Avey, J. B., & Norman, S. M. (2008). A study of supportive climate, trust, engagement and organisational commitment. *Journal of Business & Leadership: Research, Practice and Teaching*, 4(2), 51–59.
- Jenkins, S., & Delbridge, R. (2013). Context matters: Examining ‘soft’ and ‘hard’ approaches to employee engagement in two workplaces. *International Journal of Human Resource Management*, 24, 2670–2691.
- Jensen, S., & Luthans, F. (2006). Entrepreneurs as authentic leaders: Impact on employees' attitudes. *Leadership & Organization Development Journal*, 27, 646–666.
- Johnson, R., Rosen, C., & Djurdjevic, E. (2011). Assessing the impact of common method variance on higher-order multi-dimensional constructs, *Journal of Applied Psychology*, 96, 744–761.
- Kahn, W. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33, 692–724.
- Kahn, W., & Heaphy, E.D. (2014). Relational contexts of personal engagement at work. In C. Truss, R. Delbridge, E. Soane, K. Alfes, & A. Shantz (Eds.) *Employee engagement in theory and practice* (pp. 163–179). Abingdon, United Kingdom: Routledge.
- Khan, S. N. (2010). Impact of authentic leaders on organisation performance. *International Journal of Business and Management*, 5(12), 167–172.
- Luthans, F. (2012). Psychological capital: Implications for HRD, retrospective analysis, and future directions. *Human Resource Development Quarterly* 23, 1-8.
- Luthans, F., Avey, J. B., Clapp-Smith, R., & Li, W. (2008). More evidence on the value of Chinese workers' psychological capital: A potentially unlimited competitive resource? *The International Journal of Human Resource Management*, 19, 818–827.
- Luthans, F., & Avolio, B. J. (2003). Authentic leadership: Positive developmental approach. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 241–261). San Francisco, CA: Berrett-Koehler.
- Luthans, F., & Avolio, B. J. (2009). The “point” of positive organizational behaviour. *Journal of Organizational Behaviour*, 30, 291–307.
- Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, 60, 541–572.
- Luthans F., Luthans, K., & Luthans, B. (2004). Positive psychological capital: Going beyond human and social capital. *Business Horizons*, 47(1), 45–50.
- Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The mediating role of psychological capital in the supportive organisational climate–employee performance relationship. *Journal of Organizational Behaviour*, 29, 219–238.
- Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital*. New York, NY: Oxford University Press.
- Luthans, F., Youssef-Morgan, C. M., & Avolio, B. J. (2015). *Psychological capital and beyond*. New York, NY: Oxford University Press.

- Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology, 1*, 3–30.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*, 227–238.
- Masten, A. S., & Reed, M. G. (2002). Resilience in development. In C. R. Snyder & S. J. Lopez (Eds.), *The handbook of positive psychology* (pp. 74–88). New York, NY: Oxford University Press.
- May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational and Organisational Psychology, 77*, 11–37.
- Mazutis, D., & Slawinski, N. (2008). Leading organisational learning through authentic dialogue. *Management Learning, 39*(4), 437–546.
- Moineddin, R., Matheson, F., Glazier, R. (2007). A simulation study of sample size for multilevel logistic regression models. *BMC Medical Research Methodology, 7*(34), 1–10.
- Muthén, L. K., & Muthén, B. O. (2008-2014). *Mplus users' guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.
- Penger, S., & Černe, M. (2014). Authentic leadership, employees' job satisfaction, and work engagement: A hierarchical linear modelling approach. *Economic Research, 27*, 508–526.
- Porath, C. (2014). Half of employees don't feel respected by their bosses. *Harvard Business Review*. Available on <https://hbr.org/2014/11/half-of-employees-dont-feel-respected-by-their-bosses>
- Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modeling. *Measurement and Evaluation in Counseling and Development, 42*, 223–232.
- Rego, A., Sousa, F., Marques, C., & Cunha, M. P. (2012). Authentic leadership promoting employees' psychological capital and creativity. *Journal of Business Research, 65*, 429–437.
- Rogg, K. L., Schmidt, D. B., Shull, C., & Schmidt, N. (2001). Human resource practices, organisational climate, and customer satisfaction. *Journal of Management, 27*, 431–449.
- Rothmann, S. (2013). Flourishing at work: A Southern African perspective. In M. P. Wissing (Ed.), *Cross-cultural advancements in positive psychology* (pp. 123–152). Dordrecht, The Netherlands: Springer-Verlag.
- Rothmann, S., & Rothmann, S. (2010). Factors associated with employee engagement in South Africa. *SA Journal of Industrial Psychology, 36*(2), Art. #925, 12 pages, doi: 10.4102/sajip.v36i2.925
- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*, 600–619.
- Schaufeli, W. B. (2014). What is engagement? In C. Truss, R. Delbridge, K. Alfes, A. Shantz & E. Soane (Eds.), *Employee engagement in theory and practice* (pp. 1–35). London, United Kingdom: Routledge.
- Schaufeli, W. B., & Salanova, M. (2007). Work engagement: An emerging psychological concept and its implications for organisations. In S. W. Gilliland, D. D. Steiner, & P. D. Skarlicki (Eds.), *Research in social issues in management* (pp. 135–177). Greenwich, CT:

Information Age Publishers.

- Seligman, M. (1998). *Learned optimism*. New York, NY: Pocket Books.
- Simonis, J. C., & Buitendach, J. H. (2013). Psychological capital, work engagement and organisational commitment amongst call centre employees in South Africa. *SA Journal of Industrial Psychology*, 39(2), Art. #1071, 12 pages. doi: 10.4102/sajip.v39i2.1071
- Siu, O. L., Bakker, A. B., & Jiang, X. (2013). Psychological capital among university students: Relationships with study engagement and intrinsic motivation. *Journal of Happiness Studies*, 15, 979–994
- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60, 570–585.
- Soane, M. (2014). Leadership and employee engagement. In C. Truss, R. Delbridge, E. Soane, K. Alfes, & A. Shantz(Eds.), *Employee engagement in theory and practice* (pp.149–162). London, United Kingdom: Routledge.
- Sweetman, D., & Luthans, F. (2010). The power of positive psychology: Psychological capital and work engagement. In A. B. Bakker & M.P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 54–68). New York, NY: Psychology Press.
- Truss, C., Delbridge, R., Alfes, K., Shantz, A., & Soane, E. (2014). Introduction. In C. Truss, R. Delbridge, E. Soane, K. Alfes, & A. Shantz(Eds.), *Employee engagement in theory and practice* (pp.1–11). London, United Kingdom: Routledge.
- Wang, D., & Hsieh, C. (2013). The effect of authentic leadership on employee trust and employee engagement. *Social Behavior and Personality*, 41, 613–624.
- Wang, J., & Wang, X. (2012). *Structural equation modeling: Applications using Mplus*. Chichester, United Kingdom: Wiley.
- West, S. G., Taylor, A. B., & Wu, W. (2012). Model fit and model selection in structural equation modeling. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 209–231). New York, NY: The Guilford Press.
- Whitman, M. E., & Woszczyński, A. B. (2004). Exemplary works in information systems research. In M. E. Whitman & A. B. Woszczyński (Eds.), *The handbook of information systems research*, (pp. 1–14). Hershey, PA: Idea Group.
- Woolley, L., Caza, A., & Levy, L. (2011). Authentic leadership and follower development: Psychological climate, positive work climate, and gender. *Journal of Leadership and Organizational Studies*, 18, 438–448.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009a). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behaviour*, 74, 235–244.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009b). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Occupational and Organizational Psychology*, 82, 183–200.
- Yammarino, F. J., Dionne, S. D., Schriesheim, C. A., & Dansereau, F. (2008). Authentic leadership and positive organizational behaviour: A meso, multi-level perspective. *The Leadership Quarterly*, 19, 693–707.
- Youssef, C. M., & Luthans, F. (2007). Positive organizational behavior in the workplace: The

impact of hope, optimism, and resiliency. *Journal of Management*, 33, 774–800.

Youssef-Morgan, C., & Bockorny, K. (2014). Engagement in the context of positive psychology. In C. Truss, K. Alfes, R. Delbridge, A. Shantz, & E. C. Soane (Eds.), *Employee engagement in theory and practice* (pp. 36–56). London, United Kingdom: Routledge.

Zamahani, M., Ghorbani, V., & Rezaei, F. (2011). Impact of authentic leadership and psychological capital on followers' trust and performance. *Australian Journal of Basic and Applied Sciences*, 5, 658–667.