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EXAMINING THE ROLE OF PSYCHOLOGICAL CAPITAL AS A MEDIATOR BETWEEN PERCEIVED AUTHENTIC LEADERSHIP, WORK ENGAGEMENT AND WORKPLACE COMMITMENT AMONG SCHOOL TEACHERS

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COMPULSORY DECLARATION: This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, cited and referenced.

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Abstract

Teachers have an integral role to play in the education system of any community. However, in developing countries such as South Africa, teachers often face unique challenges in fulfilling their roles effectively and it is therefore essential that they can draw on various resources in order to do so. Research in positive organisational behaviour has argued that one category of resources that can be beneficial in the workplace is psychological resources, such as psychological capital (PsyCap). This study examined the role of PsyCap in equipping teachers at work. The key focus of this study was to investigate whether or not the level of authentic leadership displayed by school principals may help to foster PsyCap among teachers and whether or not increased levels of PsyCap may help to foster work engagement and workplace commitment among teachers.

A descriptive research design was utilised with a cross-sectional, quantitative approach. A convenient sample of 291 primary and high school teachers were sampled from 25 government schools in Cape Town. They completed a hardcopy questionnaire which assessed their levels of PsyCap, work engagement, workplace commitment and the degree to which they perceived their principals as authentic leaders.

PsyCap was significantly related to teacher work engagement and commitment to both the school and the teaching profession in that teachers with higher PsyCap tended to be more engaged and committed. No significant relationship was found between PsyCap and the degree to which teachers perceived their principal as an authentic leader. PsyCap thus did not act as a mediator between authentic leadership, work engagement and commitment. Authentic leadership did not significantly predict these two outcomes directly either.

The study results suggest that PsyCap is an important resource for teachers as it is associated with higher levels of work engagement and commitment. However, while authentic leadership may be important for other reasons, it is unlikely to foster PsyCap, work engagement or commitment within teachers. It is recommended that further research explores what factors assist in developing PsyCap among school teachers in South Africa.

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1. Introduction

South Africa is experiencing an education crisis. Whilst pockets of excellent schools exist across the country, the majority of South African learners are receiving a poor quality of education. Burdened by the crippling legacy of the apartheid-era Bantu education system, many South African schools have not been able to educate learners in line with national and international standards. The latest results from the Annual National Assessments (ANAs) showed that grade 4 learners were achieving 37% in mathematics, whilst grade 9 learners only achieved an average score of 11% for mathematics (Department of Basic Education, 2014). Spaull (2013) outlines that, due to the controversial moderation methods involved in these assessments, these results could actually be an overestimation of learner performance. Furthermore, the average grade 9 learner performed two to three grade levels lower on international standardised mathematics and science tests than the average learner from other middle-income countries. These performance statistics indicate that many learners are not meeting the expected standards. This significantly limits their opportunity to gain a tertiary education and so increase their socio-economic status.

The performance of South African learners is a symptom of many problems facing the public education system and the country as a whole. Addressing these problems is difficult as they are often highly complex, interrelated problems and their root causes are difficult to identify. The challenges faced by schools range from poor access to teaching resources and large class sizes (Onwu & Stoffels, 2005) to poor teacher subject knowledge (Spaull, 2013). Furthermore, many schools in South Africa exist in communities facing significant economic hardships and a variety of social challenges. For example, many South African communities suffer from high levels of violence (Seedat, Van Niekerk, Jewkes, Suffla, & Ratele, 2009). This violence makes its way into schools further hindering the chance of learner success. These problems, among others, make it difficult for learners to succeed at school and indicative of this is the significant drop-out rate experienced in South African public schools - 50% of learners drop out from grade 1 to grade 12 (Spaull, 2013).

In order to improve schools, a multi-faceted approach is necessary and a deep understanding of the individual communities in which each school operates is essential. However, there are certain problems that seem to be more influential than others. In an international meta-review on school leadership, Leithwood, Harris and Hopkins (2008) argued that the quality of teaching delivered by teachers and the effectiveness of the principal are the two greatest influences on the success of pupil learning. This suggests that the effectiveness of

school staff and leaders are prominent influencers on school performance. In line with this, based on the National School Effectiveness Study conducted in South Africa, it seems that one of the most significant predictors of school effectiveness is not the availability of resources, but how these resources are used and managed by school principals and teachers (Taylor, 2011). This strengthens the argument that South African schools need effective teachers and principals in order to function optimally.

Given the pivotal role of teachers in addressing the problems faced by South African schools, it is essential that teachers can access as many resources as possible in order to fulfil their roles effectively. However, teachers are often faced with a lack of resources such as access to technology or appropriate textbooks and are required to draw on internal resources to assist them in their jobs instead. One such type of resource that teachers may utilise is psychological resources. Luthans, Youseff and Avolio (2007) argue that there are specific psychological resources which help enable optimal human functioning. They labelled the sum of these factors as a person's psychological capital (PsyCap). In the relatively short time that this construct has been researched, PsyCap has been positively linked to organisational commitment, job satisfaction and psychological well-being at work, whilst revealing negative relationships with employee cynicism, stress and turnover intention (Avey, Reichard, Luthans, & Mhatre, 2011). In addition, PsyCap was negatively related to burnout and disengagement among South African teachers (Hansen, Buitendach, & Kanengoni, 2015). Thus, a strong case can be made for the importance of PsyCap for South African teachers and this dissertation will examine to what extent and how PsyCap, as a psychological resource, may assist teachers to provide quality teaching.

In order to examine PsyCap's role for teachers, this study sought to examine its potential outcomes and a potential antecedent. With regards to PsyCap outcomes, this study will focus on two teacher attitudes in the workplace. The first attitude is work engagement which is defined as a positive work-related state of mind characterised by vigour, absorption and dedication (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Research has highlighted various positive outcomes of work engagement, particularly increased individual performance (Halbesleben & Wheeler, 2008) and business-unit performance (Harter, Schmidt, & Hayes, 2002). Furthermore, Bakker and Bal (2010) found a positive relationship between work engagement and the job performance of school teachers. In the South African setting, where teachers are faced with high demands and significant challenges, it can be argued that work engagement is of vital importance. However, Dehaloo and Schulze (2013) found that work

engagement was poor among teachers in a South African school. In addition, they found quantitative evidence that these teachers were dissatisfied and qualitative interviews revealed a lack of passion and dedication to their jobs. In addition, their research showed that a lack of enthusiasm shown by teachers can lead to students losing motivation for their learning and consequently performing poorly in school.

A second positive work-related attitude of PsyCap that has received attention in literature is workplace commitment. The term "commitment" has been used extensively in the management and human resources literature to describe various types of bonds that exist between employees and organisations (Klein, Molloy, & Brinsfield, 2012). This construct has often been conceptualised and examined empirically, within the field of organisational psychology, as organisational commitment. The most prominent model is the Meyer and Allen (1991) three-factor model of commitment. This model proposed that there are three forms of organisational commitment that employees experienced to differing degrees: affective, normative and continuance commitment. Using Meyer and Allen's (1991) definition, organisational commitment has been positively related to attendance at work, in-role performance and organisational citizenship (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Furthermore, it was negatively related to withdrawal cognition and turnover with affective commitment showing the strongest relationships with these constructs (Meyer et al., 2002). Simons and Buitendach (2013) also recently found a positive relationship between PsyCap and organisational commitment among South African call-centre employees.

However, Klein, (et al., 2012) recently highlighted a number of criticisms with the Meyer and Allen (1991) model and proposed a new, target-free conceptualisation of commitment. As such, Klein et al. (2012) defined commitment as "a volitional psychological bond reflecting dedication to and responsibility for a particular target" (p.137). Commitment can never be completely target-free as one cannot experience a bond to nothing. Rather, this conceptualisation is target-free in the sense that it can be applied to any target using a single measure and thus the conceptualisation is not bound to one specific target such as the organisation (as was the case with the Meyer and Allen conceptualisation). Klein (2016) argued that further research is needed to better understand the development of commitment within the workplace. Given that Klein et al.'s (2012) conceptualisation is a recent one, no published literature has used this conceptualisation in a South African context. However, committed teachers are a crucial component for schools in South Africa to be effective (Kamper, 2008)

and therefore this study will analyse commitment as an outcome of PsyCap using this conceptualisation.

This study will also analyse a potential antecedent of PsyCap to provide insight into how PsyCap, if found to be a relevant resource, can be developed among teachers. A key influence on teacher quality, motivation and level of resources available are school principals. A key role of school principals is to provide effective leadership for their staff. There are a number of different patterns of behaviour that have been identified as key contributors to effective leadership. One such pattern that has received increased attention in recent positive organisational behaviour literature is authentic leadership. The conceptualisation of authentic leadership is still developing, but one of the most prominent definitions in the current literature is: "a pattern of leader behaviour that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development" (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008, p. 94). In one of the earlier conceptualisations of authentic leadership, the development of psychological capital among followers was included in the definition of PsyCap (Avolio, Gardner, Walumbwa, Luthans, & May, 2004). It was later removed from the conceptualisation because it was not an inherent part of the construct, but was still theorised that PsyCap could be developed through authentic leadership (Walumbwa et al., 2008). In addition, empirical evidence has also identified a positive relationship between authentic leadership and PsyCap (Rego, Sousa, Marques & Pina e Cunha, 2012).

Another key role of principals is to manage the school's financial and other resources it receives. Teachers, parents and school governing bodies thus need to be able to trust principals to effectively manage the funds the school receives. However, in their recent annual report, Corruption Watch (2016) noted that the highest number of corruption complaints in South Africa in 2015 was received from schools and 54% of these complaints identified principals as the main culprits of corruption. Therefore, there is a clear need for authentic leadership within South African schools as well as additional empirical support for the potential benefits of this type of leadership for the development of PsyCap among teachers.

Thus, the focus of this study is on the PsyCap of teachers in a South African context and analysing a potential antecedent and two potential outcomes. This will be done by addressing the following research question: What is the relationship between perceived authentic

leadership of South African school principals, the PsyCap of teachers, teacher work engagement and teacher work commitment?

This dissertation will address the research question through a thorough literature review which will present the current research relating to the nature of PsyCap and the use of this construct in a South African context. Research regarding work engagement, workplace commitment and authentic leadership will also be presented along with a theoretical framework depicting the theoretical relationships between these constructs. This chapter will end with the hypotheses that will be tested in this study. The method used in this study will then be discussed which will include the research design and approach; the measures used in this study; the sampling procedure and the descriptive statistics of the sample. The analysis of the results will then be reported on in the next chapter which will highlight the results of each hypothesis test conducted in this study. The final chapter will contain the discussion of the results which will comprise of a summary of the results, theoretical and practical implications as well as limitations and recommendations for further research.

2. LITERATURE REVIEW

This chapter outlines the various studies and theories related to psychological capital, followed by a review of the work engagement and workplace commitment literature. The review then turns to literature on school leadership and management, followed by a thorough review of the authentic leadership construct. Finally, the relationship between these constructs is discussed and relevant hypotheses proposed. For each construct in this literature review, its use in an educational setting as well as the studies conducted within a South African context have been presented.

Psychological Capital

The emergence of psychological capital (PsyCap) as a construct took place on the back of a rising interest in positive psychology which itself emerged as alternative approach to the often illness-oriented approach that has characterised much of psychology in the past. Positive psychology is focused on enhancing people's strengths and skills in different areas of their life as a way to increase their well-being (Maddux, 2009). Being closely involved with positive psychology research, Luthans (2002) argued that positive psychology could be applied to the organisational behaviour research through the study and application of positive state-like human resource strengths and psychological capacities. These capacities could be developed and managed and potentially lead to positive performance outcomes in organisations. Luthans (2002) also stressed that psychological capacities should be measurable and open to development. He proposed three psychological capacities that laid the groundwork for further research in this field: confidence, hope and resilience.

Luthans and Youseff (2004) were the first to term the construct "psychological capital" and argued that it is a form of capital that can be leveraged by employees and organisations to gain a competitive advantage similar to how human capital and social capital provide an advantage. They stated that PsyCap is made up of four components. The first three components were the same ones identified by Luthans (2002), with optimism as the fourth component. In order to understand PsyCap, a brief discussion of its components is provided below.

Confidence

Luthans and Youseff (2004) drew heavily from Albert Bandura's (1994) work on self-efficacy when conceptualising this construct. They defined confidence or self-efficacy (used interchangeably in the PsyCap research) as the strong belief in one's own ability to leverage the cognitive resources, motivation and necessary courses of action within a specific context.

One's confidence influences how one person thinks, feels and one's level of motivation towards a certain behaviour (Bandura, 1994). Confidence also influences people's ability to achieve success and people with high levels of confidence are more likely to set challenging goals for themselves and remain committed to achieving those goals. They also approach new challenges with an air of positivity as they believe they have a considerable level of control in overcoming these challenges. They view these challenges as opportunities to master something new as opposed to threats to avoid. Stajkovic and Luthans (1998) conducted a meta-analysis on the relationship between confidence and work-related performance and found a significant correlation between these two variables. Thus, confidence would be a considerably beneficial resource for South African teachers that face numerous challenges in their unique professional environment.

Hope

Most people would acknowledge that hope can be either good or bad, depending on what or in whom the hope is placed (Snyder et al., 1991). The Mirriam-Webster (2015) dictionary defines hope simply as a desire for something to happen and having reason to believe that it would happen. This notion of desiring some event or "thing" to occur has led researchers to focus on the importance of goals in defining hope as a construct. Snyder et al. (1991) observed that many definitions of hope viewed it as a one-dimensional construct and simply as an expectation that a particular goal would be achieved. Whilst Snyder et al. agreed that hope is grounded in the importance of goals, they argued that this one-dimensional definition was limited and that hope actually consists of two dimensions. The first dimension of hope is related to the *agency* one possesses in relation to one's goal. This refers to the determination or will one has towards reaching a goal. Secondly, they argued that the *pathways* or plans one is able to create and implement in achieving one's goal is the second dimension of hope. Thus, this led to their definition of hope as "a positive motivational state that is based on an interactively derived sense of successful (a) agency (goal directed energy) and (b) pathways (planning to meet goals)." (Snyder et al., 1991, p. 571). This definition has been used extensively in positive organisational behaviour literature and was incorporated as a component of PsyCap (Luthans, Avolio, Avey & Norman, 2007).

There are a number of reasons why hope was included as a component of PsyCap (Luthans, et al., 2007). Firstly, it is a state-like psychological construct which means that it can be developed which is a core characteristic of PsyCap. Secondly, it is grounded in theory and empirical research with valid measures. Luthans et al. (2007) noted that hope has been shown

to be a psychological construct with both convergent and discriminant validity in relation to other constructs as well as to possess face validity. Finally, hope has been positively related to desirable employee and organisational outcomes such as job satisfaction and organisational commitment in empirical research (Youssef & Luthans, 2007); covaries with job performance over time (Peterson & Byron, 2008); and is positively associated with employee well-being (Reichard, Avey, Lopez, & Dollwet, 2013). Thus, employees having hope can be of great benefit for both individuals and organisations.

Resilience

The environment in which organisations operate is becoming increasingly volatile, uncertain, complex and ambiguous. Both employees and organisations are faced with new challenges and tough economic climates. Thus, the concept of resilience has received considerable focus among managers in recent times. In the psychology literature, resilience was first defined and studied in the field of clinical psychology as an ability to achieve positive outcomes in the face of serious threats to one's adaptation and development (Masten, 2001). Applied to the field of positive organisational behaviour, Luthans (2002) defined resilience as the psychological capacity to bounce back after experiencing failure, adversity, conflict, change or even a positive career progression which often involves increased responsibility. Luthans and Youseff (2004) suggest that resilience enables people to grow through facing setbacks and difficulties and potentially even to achieve a higher level of performance than before the setback. They characterised resilience through three components: a strong awareness of reality; a deep belief that life is meaningful; and an ability to adapt and improvise when faced with significant change.

Masten's (2001) research on developmental processes suggests that resilience can be developed which lends to the idea that it is a state-like construct. Similarly, Coutu (2002) argued that resilience is essential in order to survive in an ever-changing business landscape and it is something that can be learned by those in business. Furthermore, resilience is significantly positively related to job satisfaction (Youseff & Luthans, 2007) and employee performance (Luthans, Avolio, Walumbwa, & Li, 2005). Thus, given the prominent increase in the rate of change experienced in organisational contexts, resilience is a useful psychological resource one can harness in the workplace.

Optimism

Optimism is a term often used in everyday language, but has a very specific meaning in the field of positive psychology (Luthans et al., 2007). Optimism is defined as a style of explaining and attributing positive events to internal, permanent causes and attributing negative events to temporary, external and situation-specific causes (Luthans & Youssef, 2004). Someone that possesses optimism is able to take credit for successes and distance themselves from any guilt as a result of failures. This also enables them to cultivate and maintain a positive future expectation that is also open to development (Carver & Scheier, 2002). This positive outlook also includes positive emotions and can lead to increased motivation (Luthans et al., 2007). However, it should be noted that a healthy level of optimism is one that is realistic about the challenges one is faced with and is not simply a naïve positive attribution about success.

Luthans et al. (2005) found a significant positive relationship between the optimism of Chinese employees and their performance as rated by their managers. In addition, with the combination of resilience, employees that displayed higher levels of optimism were more accepting of change in their organisations (Avey et al., 2011). Optimism has also been linked to improved emotional well-being, physical health and enabling more effective coping strategies to be developed in order to cope with difficult challenges (Carver, Scheier, & Segerstrom, 2010).

Psychological Capital as a higher order construct

Combining the four separate components of PsyCap, Luthans et al. (2007, p.3) defined this construct as: “An individual’s positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success.” Luthans et al. argued that while each component is a discriminant construct on its own, PsyCap is a common underlying link that ties them together and that a single, higher-order construct can adequately capture the common mechanisms found in each individual component. Empirical evidence supports this argument. Luthans et al. (2007) found high convergent validity between the various components of PsyCap and found that PsyCap was best modelled as a second-order factor using

confirmatory factor analysis. They also found that PsyCap as a single construct was a better predictor of performance and job satisfaction than each individual component on its own.

Outcomes of Psychological Capital

Since its initial conceptualisation, various empirical studies have been conducted examining the relationship between PsyCap and organisational outcomes. In their meta-analysis on PsyCap, Avey et al. (2011) concluded that a common finding in the research is that PsyCap is positively related to desirable employee attitudes and negatively related to undesirable attitudes. Furthermore, they also found that those with higher levels of PsyCap are more likely to put more effort into their work and in doing so, achieve a higher level of performance. Avey, Wernsing and Luthans (2008) found that PsyCap is an important resource in counteracting cynicism and deviant behaviours sometimes displayed by employees when faced with organisational change. This is of upmost importance as change is presently occurring at a rapid rate in organisations. The same study also showed that PsyCap is positively related to emotional engagement and organisational citizenship behaviour of employees. Avey, Luthans, and Jensen (2009) found a significant negative relationship between PsyCap and employees' perceived symptoms of stress which then significantly related to their intention to quit. A negative relationship was also found between PsyCap and employee absenteeism which can have knock-on effects on productivity (Avey, Patera, & West, 2006). Lastly, Cheung, Tang and Tang (2011) found a negative relationship between PsyCap and burnout and a positive relationship between PsyCap and job satisfaction among a sample of Chinese teachers.

Psychological Capital in South Africa

There has been a fair number of studies involving PsyCap in South Africa given its relatively recent emergence in literature with the majority of this research having been published in the last five years. Du Plessis and Barkhuizen (2012) conducted a study on PsyCap among South African HR practitioners in which they found that HR practitioners have a relatively high level of PsyCap. This was an encouraging finding given the role of HR practitioners in taking the lead in overcoming difficult challenges such as managing racial and socio-economic diversity in the workplace. Interestingly, they also found that those in higher organisational positions displayed higher levels of PsyCap. While the causal direction of this relation is not known, it could suggest that PsyCap can positively contribute to career progression. Brouze (2014) found that PsyCap moderated the relationship between workload and the cynicism dimension of burnout which suggests that it can assist in reducing the effect

of work-related stressors. Another study conducted among call centre employees found a significant positive relationship between PsyCap and work engagement as well as PsyCap and organisational commitment. (Simons & Buitendach, 2013).

Two South African studies have produced results contrary to findings in most PsyCap research. Firstly, Hansen et al. (2015) found a significant negative relationship between subjective well-being and PsyCap among teachers in a South African public school. This was contrary to previous findings which displayed a positive relationship between these two constructs (Avey et al., 2009). Hansen et al. argued that this negative relationship may have been due to people with higher well-being having less of a need to draw upon psychological resources such as those characterised by PsyCap. However, due to the correlational nature of their study, they could only provide a hypothetical argument for this finding and further research is therefore necessary. In addition, they found a significant negative relationship between PsyCap and disengagement, exhaustion and burnout and a positive relationship with job satisfaction which is in line with previous findings. Secondly, de Waal and Pienaar (2013) attempted to establish a causal relationship between PsyCap and work engagement. Based on the findings of this longitudinal study, they found a positive relationship between PsyCap and work engagement at both Time 1 and Time 2 of their study which is in line with previous research. However, they found a negative relationship between PsyCap at Time 1 and work engagement at Time 2 suggesting a potential negative causal relationship. However, this study had a few considerable limitations. Firstly, a low response rate of 17.8% that could be used for both time points could have led to bias in the data. Secondly, the data collected at Time 1 was collected over fourteen months, but the data for Time 2 was collected over two weeks. Thus, there were considerable differences in the time lag between data collection points and this could have influenced the results. For example, the demands faced by the participants at the beginning of Time 1 may have been considerably different to those faced by the participants at the end of Time 1 which was fourteen months later. This could have skewed the levels of PsyCap or engagement due to this considerable difference in data collection dates for Time 1. Lastly, a longitudinal research design, on its own, is not sufficient to establish causality as work engagement could still be influenced by confounding variables. Thus, further research on the relationship between PsyCap and work engagement relationship is still needed to provide a clearer understanding of this relationship.

Criticisms of the Psychological Capital Construct

As with any psychological construct, there are a number of criticisms that have been posed against PsyCap. The first criticism is that it was developed in the USA with a particular focus on American values and contexts. Whilst there have been numerous studies conducted in other countries, the literature suggests that PsyCap has a greater influence on positive work outcomes in America than elsewhere (Avey et al., 2009). However, while this may be true, PsyCap still significantly relates to work outcomes in many countries and various studies have shown it to be a relevant construct in a South African context (Brouze, 2014; Du Plessis & Barkhuizen, 2012; Görgens-Ekermans & Herbert, 2013; Simons & Buitendach, 2013). The most prominent criticism is related to the measurement of PsyCap, particularly in a South African context. Luthans et al. (2007) developed and validated the Psychological Capital Questionnaire (PCQ-24) which has been subsequently used in various studies. Some South African studies found that PsyCap as measured by the PCQ-24 did not display a four factor structure as theorised (Bateman, 2014; du Plessis & Barkhuizen, 2014; Setar, Buitendach, & Kanengoni, 2015). However, other South African studies have shown that PsyCap presents itself as a single construct (de Waal & Pienaar, 2013; Hansen et al., 2015; Pillay, Buitendach, & Kanengoni, 2014) comprised of four factors (Görgens-Ekermans & Herbert, 2013; Simons & Buitendach, 2013). Thus, there are mixed results with regards to the use of PCQ-24 measure in South Africa. Therefore, this study will add to the debate regarding the factor structure of PsyCap in South Africa.

Work Engagement

Engagement has become a buzzword within the workplace in recent times. However, there a number of different definitions of what engagement actually consists of. One of the most prominent definitions in positive psychology was put forward by Schaufeli et al. (2002). They defined work engagement as "a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication and absorption" (Schaufeli et al., 2002, p. 74). It is therefore considered to be a multi-dimensional construct with three distinct components. The first component, *vigour,* is characterised by high energy levels and mental resilience as well as a willingness to put great effort into one's work even when faced with difficult challenges. *Dedication* is made up of a sense of significance and pride associated with one's work and a considerable amount of enthusiasm towards one's work. This enthusiasm is both cognitive and affective in nature. The third component in Schaufeli et al.'s (2002) definition is *absorption.* This state of mind occurs when one is fully concentrated and engrossed in one's work. It is

characterised by a strong focus on one's work so much so that it feels like time flies by and it is difficult to be diverted by external distractions. However, engaged employees are not workaholics and are able to enjoy activities outside of work or simply enjoy a pleasant state of tiredness after a hard day's work (Bakker & Demerouti, 2008). A key aspect of the Schaufeli et al. (2002) definition of work engagement is that the positive state of mind is a relatively consistent state as opposed to short-term "once in a while" experiences.

Outcomes of Work Engagement

Intuitively, one could assume that when employees have high levels of engagement, positive work-related outcomes follow and the empirical research supports this notion. Bakker, Demerouti and Verbeke (2004) found that work engagement is positively related to both in-role and extra-role performance as rated by one's colleagues. This means that engaged employees are more likely to perform their job well and to display organisational citizenship behaviours by going the extra mile. These sorts of behaviours are of great benefit in a demanding environment such as public schools. In line with this, Bakker, Gierveld and van Rijswijk (2006) found that school principals displaying higher levels of work engagement were more likely to come up with creative solutions to problems they were facing and teachers also rated them more positively in leadership ratings. Furthermore, Bakker and Bal (2010) showed that work engagement was directly related to job performance among Dutch school teachers. Hakanen, Bakker and Schaufeli (2006) also found a positive relationship between work engagement and organisational commitment among a sample of school teachers. In the South African context, two studies have found that work engagement has a significant negative relationship with turnover intention (Bothma & Roodt, 2012; Mendes & Stander, 2011). This means that if employees are engaged in their work, they are more likely to perform better and less likely to leave the organisation which can have considerable positive outcomes for the overall performance of an organisation. In addition, work engagement has been linked to other positive outcomes for employees such as positive emotions and good health (Bakker & Demerouti, 2008). Thus, work engagement can lead to various positive outcomes both for organisations and for employees themselves. It is therefore worth considering how work engagement can be fostered and specifically, whether, PsyCap can is an antecedent of work engagement.

Antecedents of Work Engagement

Previous literature highlights that job resources and personal resources are key drivers of work engagement (Bakker & Demerouti, 2008). Job resources include social support from supervisors and colleagues, development opportunities and performance feedback. One study found that job resources are significant predictors of work engagement (Schaufeli & Bakker, 2004). Mendes and Stander (2011) found that role clarity and empowering leader behaviour predicted levels of work engagement in a South African sample. Among teachers in Singapore, Roslan, Ho Ng, and Sambasivan (2015) found a significant positive relationship between job resources, such as job control and supervisor support, and work engagement. Angundaru, Lubogoyi and Bagire (2016) found that HR practices in schools such as concrete rewards systems and training opportunities were positively related to work engagement among school teachers in Uganda. Thus, the work engagement construct seems to be of use in various organisational and cultural contexts.

Personal resources are also a key driver of work engagement. Storm and Rothmann (2003) found that South African police officers who make use of active coping strategies are more likely to be engaged at work. Mendes and Stander (2011) also noted that higher levels of psychological empowerment, characterised by competence, self-determination, impact and finding meaning in one's work, are positively related to work engagement. In a study among Dutch technicians Xanthopoulou, Bakker, Demerouti and Schaufeli (2007) showed that personal psychological resources such as optimism, self-efficacy and organisational-based self-esteem were predictors of work engagement. In a second study, the same authors noted that similar results were achieved when analysing these relationships over an 18-month period. (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). PsyCap was also shown to have a significant positive relationship with work engagement in a South African context (Simons & Buitendach, 2013). Thus, it is feasible to hypothesise that personal resources, such as psychological capital, are positively related to work engagement. Therefore, the following hypothesis was tested in this study:

H1: PsyCap of teachers is positively related to work engagement.

Workplace Commitment

The study of commitment in the workplace has received extensive focus within the organisational psychology literature. There are two main conceptualisations that have been used in commitment literature. The first prominent definition was proposed by Porter, Steers

Mowday and Boulian (1974) who defined organisational commitment as how strongly a person identifies with and is involved in an organisation. They argued that strong levels of commitment are characterised by a strong belief and acceptance of organisational values and beliefs, a willingness to work hard for the organisation and a definite intention to retain membership with the organisation. Their empirical findings suggested that organisational commitment was a better predictor of staff turnover than job satisfaction and paved the way for an increased interest in commitment in the workplace.

The second prominent conceptualisation was developed by Meyer and Allen (1991) who proposed a three-factor model of organisational commitment. They argued that commitment is a psychological state that defines the nature of an employee's relationship with an organisation as well as one's decision to remain with an organisation. Their model proposed that this psychological state is manifested in three different ways which they viewed as different components of commitment: *affective commitment* (emotional attachment and identification with an organisation); *continuance commitment* (employees remain with the organisation based on a need to remain); and *normative commitment* (employees remain with an organisation because they feel obliged to).

Although the Meyer and Allen (1991) model has received considerable attention in the commitment literature, Klein et al. (2012) recently highlighted a number of criticisms of this model and other previous models in the literature. They argued that commitment research began by scholars attempting to understand why people stay in organisations which led to commitment subsequently being defined in multiple, confounding ways. Klein et al. proposed that the common thread in the different commitment definitions is that commitment is a specific psychological bond between an employee and some target. However, there are two incorrect assumptions that Klein et al. (2012) note are held by commitment researchers. The first assumption is that any type of psychological bond in the workplace is commitment. This assumption has led to poor construct clarity and the stretching of the commitment conceptualisation. Instead, Klein et al. argue that there is a continuum of bond types which reflect different psychological phenomena and have different behavioural consequences. For example, the bond that arises from a lack of alternatives should not be viewed as the same as a bond in which one feels dedicated to a target out of one's own volition. Thus, commitment should be conceptualised in a way that distinguishes it from other bond types. The second assumption is that models (and measures) specifically formulated as organisational commitment can be generalised to other targets in the workplace (Klein et al., 2012). The flaw

in this approach is that assumptions about organisations may not hold for other targets of commitment. Thus, commitment scales have had to be adopted with new items which means that these scales are no longer equivalent and comparable. In addition, the changing nature of work means that people work across different organisations and the relationship duration expectations of full-time employees have decreased in recent times (Klein et al., 2012). Therefore, this warrants the need for a conceptualisation of commitment that is not bound to only one target, such as organisational commitment, but can be applied to a number of different targets using the same conceptualisation and measure.

In light of these criticisms, Klein et al. (2012) defined commitment as "a volitional psychological bond reflecting dedication to and responsibility for a particular target" (p.137). With this definition, Klein et al. aimed to reduce confounds from previous definitions, highlight the distinctiveness of commitment bonds and develop a single conceptualisation which could be equally applicable to any target. There are a few key characteristics of this conceptualisation worth highlighting. Firstly, in order for a bond to be defined as commitment, a person must choose to have that bond, must embrace that choice and accept responsibility for that choice. Secondly, this conceptualisation defines commitment as a psychological state that can vary over time. Commitment is therefore dynamic and arises from a person's unique perception of their current situation. Finally, this conceptualisation is unidimensional and target-free which makes it more parsimonious, precise and applicable. It allows for a combination of commitment targets to be examined with one measure which has a greater influence on behaviour than commitment to just one target (Johnson, Chang & Chang, 2010).

Antecedents and outcomes of workplace commitment

Using Meyer and Allen's (1991) definition, organisational commitment has been positively related to attendance at work, in-role performance and organisational citizenship (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Furthermore, it has displayed negative relationships with withdrawal cognition and turnover with affective commitment showing the strongest relationships in general (Meyer et al., 2002). Simons and Buitendach (2013) also recently found a positive relationship between PsyCap and organisational commitment among South African call-centre employees.

Given the recent introduction of the Klein et al. (2012) conceptualisation, there has been little empirical research that has utilised this definition and its accompanying measure. However, Klein et al. noted that positive affect towards a target, perceptions of trust and

perceived control are key predictors of commitment. They also argued that both individual characteristics as well as interpersonal characteristics can be seen as antecedents of commitment. Furthermore, Klein et al. (2012) argue that commitment is associated with greater motivation and continuation in an organisation. In addition to this, committed teachers are a crucial component in order for schools in South Africa to operate effectively (Kamper, 2008) and therefore, this study examined whether PsyCap relates to commitment by testing the following hypotheses:

H2a: PsyCap of teachers is positively related to teacher commitment to the school.

H2b: PsyCap of teachers is positively related to teacher commitment to teaching.

Leadership Theory

The concept of leadership and the existence of leaders have existed since the civilisation of humans. This is largely due to the need for leadership experienced across many different contexts in society. Bass and Bass (2009) noted that leadership is a universal phenomenon, but the conceptualisation of leadership differs across time, location and culture. The focus of leadership research has shifted through the years from an early focus on leader-centred factors such as traits and personalities whilst a later stream of leadership research has focused on the necessary leadership styles needed for different situations (Crevani, Lindgren & Packendorff, 2010). This consistent development of the conceptualisation of leadership has led to the emergence of many different definitions of leadership. However, these conceptualisations share many similarities and it is more useful to apply a particular definition of leadership that is relevant to the context of the research one is studying (Bass & Bass, 2009). For this dissertation, leadership will be studied in the context of schools and thus it is necessary to discuss the existent research on school leadership.

There are two broad categories in which school leadership has been theorised and studied. The first approach has examined what specific roles, functions and structures a school leader should fulfil in order to be an effective leader. In other words, this approach seeks to define *what* a school leader should do in his/her role. In line with this approach, Leithwood and Riehl (2003) noted that many conceptualisations of effective school leadership include three key functions a leader should fulfil. The first function is setting directions which involves identifying and communicating a clear vision, fostering group goals and setting high performance standards. The second function is to facilitate the development of the staff in the school, particularly the educators. This involves providing individualised support for the staff

and leading by example. Thirdly, effective school leaders make every effort to develop the school itself through building collaborative relationships with both internal and external stakeholders and continuously seeking to improve the organisational design of the school where necessary.

Knowing what activities school principals should do is not enough to contribute significantly to the improvement of leading schools (Spillane & Diamond, 2007). Thus, a second stream of school leadership research examines the practices of leadership. In other words, this approach looks at *how*, *why and when* school leaders should behave whilst fulfilling their functions. This second stream is comparable in its approach to models in organisational behaviour literature such as transformational leadership and authentic leadership.

Authentic leadership

Authentic leadership is grounded in the field of positive organisational behaviour. It emerged out of the argument that recent times have seen a decrease in ethical leadership in organisations coupled with an increase in societal challenges (Cooper, Scandura & Schriesheim, 2005). The emergence of this theory in the recent management literature was sparked by the writing of Harvard professor and former Medtronic CEO Bill George (2003). Its fast growth in popularity among both academics and practitioners could be due to its initial conceptualisation originating from an expert in both fields. George's initial conceptualisation of authentic leadership had a strong focus on morals and values and defined the authentic leader as one who is able to simply "be themselves" (George, 2003, p.12). He also argued that an authentic leader is one that is keenly interested in empowering and serving others and draws followers because of their transparency. He stressed that a particular leadership style is not as important as being an authentic human being that motivates people to follow them. This initial conceptualisation by George needed much refinement given its multidimensional nature among other key issues, but it launched a new construct into the positive organisational behaviour literature.

Gardner, Avolio, Luthans, May and Walumbwa (2005) were among the first to develop a theoretical model of authentic leadership within the peer-reviewed academic literature. In developing their model, they relied on Kernis' (2003) definition of authenticity who argued that authenticity is "characterized as reflecting the unobstructed operation of one's true, or core self, in one's daily enterprise" (p.13). In line with this, Kernis (2003) argued that authenticity consists of four components: self-awareness; unbiased processing; behaviour and relational

orientation. Kernis and Goldman (2005) elaborated on these components by defining each one in detail. *Self-awareness* is defined as a knowledge of one's own motives, desires and self-relevant thoughts. It also includes a motivation to improve this knowledge of the self and gain a deeper understanding of one's strengths and weaknesses. The *unbiased processing* component of authenticity is defined as processing the self-relevant knowledge of self-awareness in an objective, unbiased manner. Thus, an authentic person will tend not to exaggerate their personal characteristics or interpretively distort their self-evaluations. The third component, *behaviour*, is the outworking of the first two components by acting in accordance to one's values and preferences as opposed to acting in such a way to impress those around you or avoid some form of punishment. Kernis and Goldman (2005) note that this should be done with an appropriate measure of social sensitivity and an awareness of the potential consequences of one's behaviour. The fourth component is what they termed *relational orientation* which involves the nature of a person's relationships with their close relations.

Using the Kernis (2003) definition of authenticity, Gardner et al. (2005) noted that an authentic leader must extend beyond simply just having authenticity with oneself or those in close relation to oneself, but to have authentic relations with colleagues and followers. This becomes more difficult in an organisational setting where leaders are often required to present themselves as strong and may often have unrealistic expectations placed on them. Thus, authentic leaders need to be genuine in how they relate to others and not simply try to pretend to be something they are not. Gardner et al. (2005) argue that these relationships will be characterised by trust, openness and transparency as well as a focus on follower development. Given that authentic leadership was first proposed as a response to an apparent lack of ethical leadership in organisations and that factors such as transparency and trust are often observed among leaders of high moral standing, it follows logically that authentic leadership has an inherent moral lens that forms part of many definitions of the construct.

In order to further develop and validate the authentic leadership construct, Walumbwa, Avolio, Gardner, Wernsing and Peterson (2008) drew on Kernis' (2003) and subsequent conceptualisations of authenticity and constructed a definition that could then be operationalised and measured. They defined authentic leadership as "a pattern of leader behaviour that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with

followers, fostering positive self-development." (Walumbwa et al., 2008, p.96). These authors defined authentic leadership as a pattern of behaviour. Thus, this distinguishes it from being a trait and implies that it can be developed. It is also not a particular style, but rather a consistent manner of behaving that reflects authenticity in leadership.

Walumbwa et al. (2008) also defined authentic leadership as consisting of four dimensions which were developed directly from the Kernis (2003) dimensions. The first dimension Walumbwa et al. (2008) also termed *self-awareness* which they defined as showing an understanding of one's strengths and weaknesses as well as an understanding of the process one uses to make sense of the world. It also involves an understanding of one's impact on others. The second dimension Walumbwa et al. (2008) proposed is *balanced processing* which is characterised by leaders that objectively analyse information they process before making a decision. This was simply a renaming of the *unbiased processing* component of Kernis (2003), acknowledging the fact that all humans are inherently biased and make flawed judgments of information (Gardner, Cogliser, Davis, & Dickens, 2011). The important issue is not that authentic leaders are completely unbiased, but rather that they take an objective, balanced approach when evaluating information. Thirdly, they argued that *relational transparency* is another dimension of authentic leadership. This is characterised by presenting one's true self to others through the open sharing and expression of information and emotions. This encapsulates the behaviour and relational orientation dimension of Kernis' (2003) conceptualisation. The final dimension is an *internalised moral perspective*. Walumbwa et al. (2008) argued that this is an internalised form of self-regulation driven by internal values and morals as opposed to external pressures. This perspective will result in behaviours that are aligned with one's internalised values. While there is a general consensus about the importance of being true to one's values as a part of authentic leadership, there has been some disagreement about whether to include this moral component (Gardner et al., 2011). Shamir and Eliam (2005) specifically chose to leave it out of their definition. However, they did describe authentic leaders as ones that lead from conviction and are not interested in personal honour. One could therefore argue, as various authors have, that this is characteristic of an internalised moral perspective and therefore warrants its inclusion (Gardner et al., 2011). In addition, according to Gardner et al. (2011), the Walumbwa et al. (2008) conceptualisation was a culmination of various developments in the positive organisational literature and has been operationalised and used to develop the most frequently used measure of authentic leadership. A recent study examining authentic leadership in a sub-Saharan African context also used this

conceptualisation of authentic leadership (Amunkete & Rothmann, 2015) and it was therefore used in this dissertation.

Outcomes of authentic leadership

A number of different outcomes of authentic leadership have been empirically examined in the positive organisational behaviour literature. These outcomes can be divided into two main categories. The first category of outcomes is leader outcomes. Walumbwa et al. (2008) found a positive relationship between authentic leadership and ethical leadership. This should be expected given the internal moral perspective inherent in the conceptualisation and is an important finding for advocating for authentic leadership in South African schools given the recent corruption complaints in schools reported by Corruption Watch (2016). Toor and Ofori (2009) found authentic leadership to be a predictor of leader psychological well-being which indicates that leading authentically can even be beneficial for the psychological health of leaders. Finally, Spitzmuller and Illies (2010) found that authentic leadership predicted transformational leadership behaviours among leaders. A second category of authentic leadership outcomes is follower outcomes. Studies have found positive relationships between authentic leadership, job performance (Walumbwa et al., 2008) and structural empowerment (Laschinger & Wong, 2012), psychological capital and creativity (Rego et al., 2012).

With regards to the follower outcomes relevant to this study, there has been little research that has investigated how authentic leadership relates to PsyCap, work engagement and commitment. However, since its conceptualisation, authentic leadership has been closely related to PsyCap and it was even included as part of the early definitions of authentic leadership (Avolio et al., 2004). While PsyCap was later removed from the definition of authentic leadership due to it being a separate construct, empirical research supports the hypothesis of a significant positive relationship between authentic leadership of leaders and follower PsyCap (Rego et al., 2012; Woolley, Caza, & Levy, 2010). In addition, authentic leadership was positively related to work engagement (Alok and Israel, 2012) and affective organisational commitment (Leroy, Palanski & Simons, 2012). In line with this, the following hypotheses were tested in this study:

H3: Perceived authentic leadership of school principals is positively related to PsyCap of teachers.

H4: Perceived authentic leadership of school principals is positively related to work engagement of teachers.

H5a: Perceived authentic leadership of school principals is positively related to teacher commitment to the school.

H5b: Perceived authentic leadership of school principals is positively related to teacher commitment to teaching.

Avolio et al.'s (2004) framework for the link between authentic leadership and work-related attitudes proposed that psychological capital mediates the relationship between authentic leadership, engagement and withdrawal behaviours among employees. They proposed that perceiving one's leader has being authentic increases the level of PsyCap one possesses and in turn, increases one's engagement and decreases withdrawal behaviour. There has been very little empirical research that has tested this framework. However, Amunkete and Rothmann (2015) found that PsyCap mediated the relationship between authentic leadership and job satisfaction which is a positive work-related attitude similar to commitment. Furthermore, du Plessis (2014) found that PsyCap mediates the relationship between authentic leadership and work engagement among white-collar employees in a South African private health-care organisation. Due to the recent development of the Klein et al. (2016) commitment measure, no literature has yet tested whether PsyCap mediates the relationship between authentic leadership and this conceptualisation of commitment. However, due to previous positive relationships between these variables, it is feasible to test whether PsyCap mediates this relationship. Therefore, the following hypotheses tested whether PsyCap mediates the relationship between perceived authentic leadership, work engagement and workplace commitment:

H6a: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher work engagement.

H6b: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher commitment to the school.

H6c: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher commitment to teaching

Figure 1 below summaries the hypotheses in a conceptual framework depicting the relationships tested in this study.

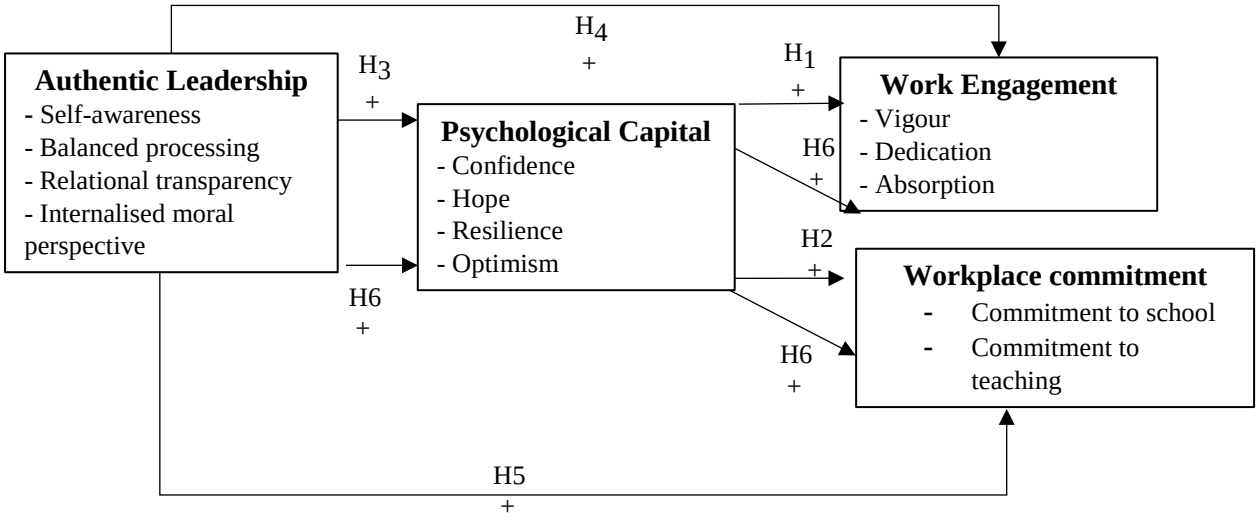


Figure 1: Conceptual framework for hypothesised model

In order to test the hypotheses laid out above, empirical data was collected from South African primary and high school teachers. The method utilised in this study is outlined in the following chapter.

3. METHOD

The third chapter of this dissertation outlines the method used to test the hypotheses. The research design is briefly discussed followed by the sampling procedure used and a description of the participants. The measures utilised are then described along with the validity and reliability findings from previous studies that used these measures. The procedure used to collect the empirical primary data is then outlined and the chapter is concluded with a brief description of the data analysis process used in this study.

Research Design

For this study, a descriptive research design was utilised in order to analyse the relationships between the variables of interest. A cross-sectional, quantitative approach was used as it allowed for data to be collected from a wide number of participants in a short space of time. Self-report, paper-based questionnaires were administered to teachers through their school principals.

Participants and Sampling

A non-probability, convenience sampling technique was used to recruit participants for this study. This approach is not as effective as probability sampling techniques as it does not allow for participants to be recruited in a systematic manner that could increase the generalizability of the results. However, this technique was used to obtain a large enough sample size given the cost and time constraints faced in this study. Due to its proximity to the researcher, only schools in the Western Cape province of South Africa were approached to participate in this study. Specifically, the Metro Central educational district was used as this was an accessible location for the researcher to collect data from and contained schools from a variety of socio-economic contexts. In addition, only government schools (both fee-paying and non-fee-paying) were included in this study as government-funded schools make up over 90% of schools in the South African educational system (Department of Basic Education, 2015).

A database of schools within the Metro Central district was accessed via the Western Cape Education Department website. These schools included both primary schools and high schools within this district. All of the 117 schools in this district were contacted to request their participation in this study. A total of 25 schools (16 primary schools and 9 high schools) indicated that they were willing to participate in this study by administering the questionnaires to the teachers in their respective schools. Using these schools, 530 questionnaires were administered with a total of 295 teachers completing the questionnaire. This is a response rate

of 55.7%. One respondent was removed from the sample as the individual had completed less than 70 % of the items in the questionnaire and one respondent was removed as the person is already retired and answered the survey based on their previous experiences. Two further respondents were removed as they had provided the exact same response for every item which suggests that they did not read the items before providing an answer. As such, the final sample consisted of 291 teachers.

The demographic details of the participants were collected at the end of the questionnaire in order to provide a summary of the characteristics of the sample. The final sample consisted of 182 primary school teachers (62.5%), 105 high school teachers (36.1%) and four teachers for whom the type of school was unknown (1.4%). The demographic details of the final sample can be found in Tables 1.1 – 1.4 below.

As can be seen in Table 1.1, more than two-thirds of the participants in the sample were female. The latest national demographic statistics show that females make up 69.7% of the national teaching workforce in the country and 70.4% of the teaching workforce in the Western Cape (Department of Basic Education, 2015). Therefore, the gender distribution in this study is an adequate representation of the gender distribution of both the national and provincial teacher population. It also interesting to note that primary schools in this study had many more female teachers than male teachers whilst the number of male and female high school teachers was relatively similar.

Table 1.1
Gender Distribution of Teachers across School Types

	School Type			
	Primary School	High School	Unknown	Total
Male	33 (11.3%)	48 (16.5%)	1(0.3%)	82 (28.2%)
Female	143 (49.1%)	55 (18.9%)	3 (1%)	201 (69.1%)
Other	1 (0.3%)	1 (0.3%)	-	2 (0.7%)
Prefer not to answer	5 (1.7%)	-	-	5 (1.7%)
Did not answer	-	1 (0.3%)	-	1 (0.3%)
Total	182 (62.5%)	105 (36.1%)	4 (1.4%)	291 (100%)

Table 1.2 shows the racial distribution across both primary schools and high schools based on teachers' self-classification. The most represented racial group in the sample is coloured followed by white and African participants which is partly in line with the racial demographics found in the economically active population of the Western Cape province where this study was based (Department of Labour, 2015). However, the percentage of the

economically active population that are African is greater than those that are white. Thus, Africans are underrepresented in this sample. Table 1.3 shows a number of descriptive statistics relevant to this sample. This table shows that the sample consisted of both highly experienced teachers (maximum years teaching = 65) and relatively new teachers (minimum years teaching< 1 year). The sample also comprised of teachers that had worked with their principal for a long time and those that had worked with their principal for a relatively short period of time. Another descriptive worth highlighting is the average annual fee at the schools in which the teachers in this study teach. The range is again a wide one and includes both no-fee schools and high-fee paying public schools. The median, which is the midpoint of the data is a more useful summary of the data than the mean in this case as more than 60% of the data lies below the mean. This suggests that the mean is pulled up by outliers and does therefore not provide as an accurate description of the data as the median does.

Table 1.2

Race Distribution of Teachers across School Types (n =291)

	School Type			
	Primary School	High School	Unknown	Total
African	12 (4.1%)	16 (5.5 %)	-	28 (9.6 %)
Asian	2 (0.7%)	-	-	2 (0.7%)
Coloured	91 (31.3%)	47 (16.2%)	1 (0.3%)	139 (47.8%)
Indian	10 (3.4%)	-	-	10 (3.4%)
White	41 (14.1%)	23 (7.9 %)	2 (0.7%)	66 (22.7 %)
Other	2 (0.7%)	-	-	2 (0.7%)
Prefer not to answer	21 (7.2%)	16 (5.5%)	1 (0.3%)	38 (13.1%)
Did not answer	3 (1%)	3 (1%)	-	6 (2.1%)
Total	182 (62.5%)	105 (36.1%)	4 (1.4%)	291 (100%)

Table 1.3

Descriptive Statistics of Teacher Demographics

	N	Mean	Median	SD	Min	Max
Age	286	42.91	45.00	12.506	20	85
No. of years as a teacher	277	17.85	17.00	12.76	0.08	65.00
No. of years at school	263	9.80	6.00	9.35	0.08	40.00
No. of years working with principal	280	6.49	4.00	7.07	0.08	31.00
Average Annual Fees*	288	9,011.97	4,750.00	10,557.06	0	37860

** Taken from the Western Cape Department of Education Website quoted in South African Rands*

Table 1.4 shows the education levels of teachers in the sample. This table shows that most teachers had completed some form of education above the level of matric (97.8%).

Table 1.4
Distribution of Teachers' Education Levels Across School Types (n =280)

	School Type			
	Primary School	High School	Unknown	Total
Below Matric	1 (0.4%)	-	-	1 (0.4%)
Matric	1 (0.4%)	3 (1.1%)	-	4 (1.4 %)
Diploma	56 (22.4%)	18(6.4%)	1 (0.4%)	74 (26.4%)
Bachelor's Degree	70 (25%)	40 (14.3%)	-	110 (39.3%)
Postgraduate Degree	43 (15.4%)	44 (15.7%)	3 (1.1%)	90 (32.1 %)
Total	171 (61.1%)	105 (37.5%)	4 (1.4%)	280 (100%)

Measuring Instruments

The data were collected using a paper-based, self-report questionnaire. A copy of this questionnaire can be found in Appendix A. This questionnaire consisted of previously validated measures that were used to measure each variable of interest in this study. The variables measured in this survey were teacher psychological capital, teacher perceptions of their principal's authentic leadership, teacher work engagement and teacher commitment to the school and to the teaching profession. Likert scales were used to record responses to all items in this measures. These measures were then followed by demographic questions.

Psychological capital. The most widely used scale to measure PsyCap is the PCQ-24 developed by Luthans, Avolio et al. (2007). This scale consists of four previously validated subscales in order to measure each component of PsyCap. These scales were carefully selected to meet the criteria for the conceptual definition of PsyCap: self-efficacy (Parker, 1998); hope (Snyder, Sympson, Ybasco, Borders & 1996); optimism (Scheier & Carver, 1985) and resilience (Wagnild & Young, 1993). Each subscale has been found to be valid and reliable in previous research and a Cronbach alpha score of .89 for the higher order construct was found by Luthans, Avolio et al. (2007) which indicates that this scale is reliable. Reverse coding was required for items 13, 20 and 23. An example of one item from the PCQ-24 scale is "I feel confident presenting information to a group of colleagues." Whilst there is debate about the validity of this measure in South Africa and the factor structure of PsyCap in this context, a number of local studies (as well as one in Namibia) have found the scale to be valid (Amunkete & Rothmann, 2015; Görgens-Ekermans & Herbert, 2013; Simons & Buitendach, 2013) which is why it has been chosen as a measure of PsyCap in this study. Participants were required to

respond using a 6-point Likert scale ranging from 1= “Strongly Disagree” to 6= “Strongly Agree”.

Work engagement. The 17-item Utrecht Work Engagement Scale was used to measure teacher work engagement (Schaufeli, et al., 2002). This scale is one of the most prominently used engagement scales and consists of self-report items on a 7-point Likert scale ranging from 0= “Never” to 6= “Every day”. Studies have consistently shown that a 3-factor structure consisting of vigour, absorption and dedication, adequately fits the hypothesised model (Schaufeli, 2012). Storm and Rothmann (2003) showed that the 17-item scale is valid and reliable in their sample of South African police officers. More recently, Goliath-Yarde and Roodt (2011) showed the scale to be reliable with high internal consistency for each component of work engagement (vigour Cronbach α = 88; absorption Cronbach α = .85; dedication Cronbach α = .91) and a strong Cronbach α = .95 for the overall scale. De Bruin, Hill, Henn, and Muller (2013) also found it to be valid and reliable in South Africa and that the scale could be summarised into a single, summative score of work engagement. Field and Buitendach (2012) also showed it to be reliable among South African school teachers with high internal consistency (Cronbach α = .92). An example item from this scale is “At my job, I feel strong and vigorous.”

Workplace commitment. Workplace commitment was measured relative to two targets: the school and the teaching profession. Commitment to both targets was measured using the 4-item Commitment scale developed by Klein, Cooper, Molloy and Swanson (2014). This scale had been tested using eight different targets of commitment and displayed strong internal consistency for all eight targets (Cronbach α >.86 for all targets). Klein et al. (2014) also found that the scale validly measured commitment as a unidimensional construct across the same targets and exploratory factor analysis showed that one factor explained 70% of the variance.

Perceived authentic leadership. In order to measure principals’ perceived authentic leadership, the Authentic Leadership Inventory (ALI) (Neider & Schriesheim, 2011) was used. This scale is based on the conceptualisation of the construct by Walumbwa et al. (2008) and consists of 14 items utilising a 5-point Likert response scale ranging from 1= “Strongly Disagree” to 5= “Strongly Agree”. While a common measure used for authentic leadership is the Authentic Leadership Questionnaire (ALQ) (Walumbwa et al., 2008), Neider and Schriesheim (2011) argued that it did not display strong content validity and is not easily

available for research. Furthermore, Neider and Schriesheim (2011) found the ALI to be a reliable scale with a Cronbach alpha score of .74, used CFA to confirm it as a second order factor model and established convergent and discriminant validity using a multitrait-multimethod matrix. Furthermore, Stander et al. (2015) used the ALI among a sample of South African health care employees and reported a high Cronbach alpha (.93) and that all items loaded significantly onto one higher order factor. One example item from this scale is: "My leader clearly states what he/she means". For each item, "my leader" was replaced with "my principal".

Demographics. The last section of the questionnaire consisted of a number of demographic questions in order to provide descriptive statistics of this particular sample. The demographic items included age, gender, race, years of teaching experience, type of school, length of time working at their school, highest qualification and length of time the teacher had worked with their current principal.

Procedure

The teachers were contacted through their school principals at public schools from the list of schools within the Metro Central district published by the Western Cape Education Department. Permission was first obtained from the Commerce Ethics in Research Committee, the Western Cape Education Department and the principals of each school. Upon permission granted by the relevant authorities, the surveys were dropped off at the schools with the principals or administration staff along with a sealed box for the surveys to be stored in after completion and a letter further explaining the study (Appendix A). Each individual survey was placed in an unsealed envelope which could then be sealed by each participant upon completion of the survey. These surveys were then collected approximately one week after the drop-off date in order to give teachers enough time to complete the survey. The teachers were also informed of the process involved in the study, that their participation was voluntary and that they could withdraw at any time which allowed them to make an informed decision about consenting to participate. A lucky draw of a stationery voucher was conducted for any school that had at least 30% of their teachers participate in the study. In addition, a cash draw was conducted in order to incentivise participation in the study. In order to protect their anonymity, participants' phone numbers were collected on a separate paper to the questionnaire and teachers were asked to place this separately in the box. At the end of the data analysis period, the cash and voucher draws were conducted using the random number generator on Microsoft Excel.

Data Analysis

Once the data was collected, it was captured in an Excel document and then transferred into the IBM Software Package for the Social Sciences (SPSS) version 23 and the descriptive statistics were then determined. Exploratory factor analysis was used to validate each scale in this study's sample. In order to test the hypotheses, Pearson's correlation analyses was used. Multiple regression using Hayes' (2013) process model was then used to determine whether PsyCap mediates the relationship between authentic leadership, work engagement and turnover intention of teachers. The next chapter outlines the results of the validity and reliability analyses as well as the results of the hypothesis testing.

4. RESULTS

This chapter outlines the study results. The validity and reliability results for each measure used in this study are provided first. Then, descriptive statistics are reported for each scale. Following this, the results of each hypothesis test is described in detail.

Validity Analysis

Before conducting any hypothesis testing to address the research questions in this study, it was necessary to determine whether each measure is a valid measure of the variables of interest. In order to conduct validity analysis, exploratory factor analysis (EFA) was conducted. The point of factor analysis is to reveal latent variables that cause the manifest variables to covary. In order to do this, the shared variance needs to be distinguished from the unique variance of a variable in order to reveal the underlying factor structure. As such, EFA was chosen over principal component analysis (PCA) as PCA does not distinguish between unique and shared variance and could sometimes inflate the variance accounted for by the components (Costello & Osborne, 2005). The extraction method utilised in this study was principal axis factoring (PAF) as this generally provides the most accurate results for factor analysis (Costello & Osborne, 2005).

In order to obtain meaningful EFA results, the data is required to meet a number of assumptions which were first tested before the validity analysis was conducted. For each measure, Bartlett's test of Sphericity was conducted to determine whether the scale items were correlated highly enough with each other. In addition, the Kaiser-Meyer Olkin (KMO) measure was used to determine whether the sample for each measure was adequate. A significant Bartlett's test score and a KMO score greater than .50 were used as criteria to determine whether the sample was adequate (Leech, Barrett & Morgan, 2005). Direct oblimin rotation was used for each round as it was assumed that the factors would be correlated for each scale. Finally, a cut-off point of 0.3 for each item factor loading was used in order to determine whether an item loaded significantly onto a factor (Kline, 1994).

Psychological capital questionnaire (PCQ-24). It was expected that four factors would emerge during the factor analysis due to the theoretical conceptualisation of PsyCap. As such, principal axis factoring was conducted across the 24 items to determine the factor structure exhibited in this sample. Four rounds of PAF were necessary before an interpretable solution was found. Each round of PAF is described below.

PAF Round 1

For the first round of PAF, Bartlett's test of Sphericity was significant (χ^2_{276} =2785.33, p<.01) which indicated that factor analysis could be conducted on this sample. According to Kaiser (1970), factors should be considered relevant if their eigenvalues exceed one. In this round, six factors emerged with an eigenvalue greater than one. However, two factors had eigenvalues that were only slightly greater than one (see table 2). Furthermore, using Kaiser's criterion as a means for determining the number of factors is often seen to overestimate the number of relevant factors (Costello & Osborne, 2005). Another method that is used to determine the number of relevant factors is the scree plot (Cattell, 1966) which plots each factor that can be drawn out of the factor analysis against its associated eigenvalue. A line is then drawn to connect the dots emerging in this graph. The number of relevant factors is indicated by the point of inflection on the line. The number of factors to the left of this point represent the number of factors that would best represent the factor structure in the scale (Cattell, 1966). As can be seen in Figure 2, there are two points of inflection, one on the factor with the second and one on the factor with the fifth highest eigenvalue. This indicates that this construct could be represented by either one factor or four factors. The bulk of the variance is captured in the first factor. As the original conceptualisation of PsyCap argued that it consists of four factors with a single superordinate factor, the items were forced to extract on to four factors for the next round of PAF.

Table 2

Extract of Variance Table for PCQ-24 PAF Round 1(seven factors with highest eigenvalues)

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.113	33.805	33.805	7.678	31.990	31.990	3.404
2	1.975	8.231	42.036	1.576	6.567	38.557	5.438
3	1.771	7.379	49.414	1.255	5.230	43.787	1.609
4	1.487	6.196	55.611	1.000	4.166	47.953	4.224
5	1.056	4.398	60.009	.584	2.433	50.385	3.104
6	1.019	4.247	64.256	.529	2.206	52.591	4.753
7	.865	3.604	67.860				

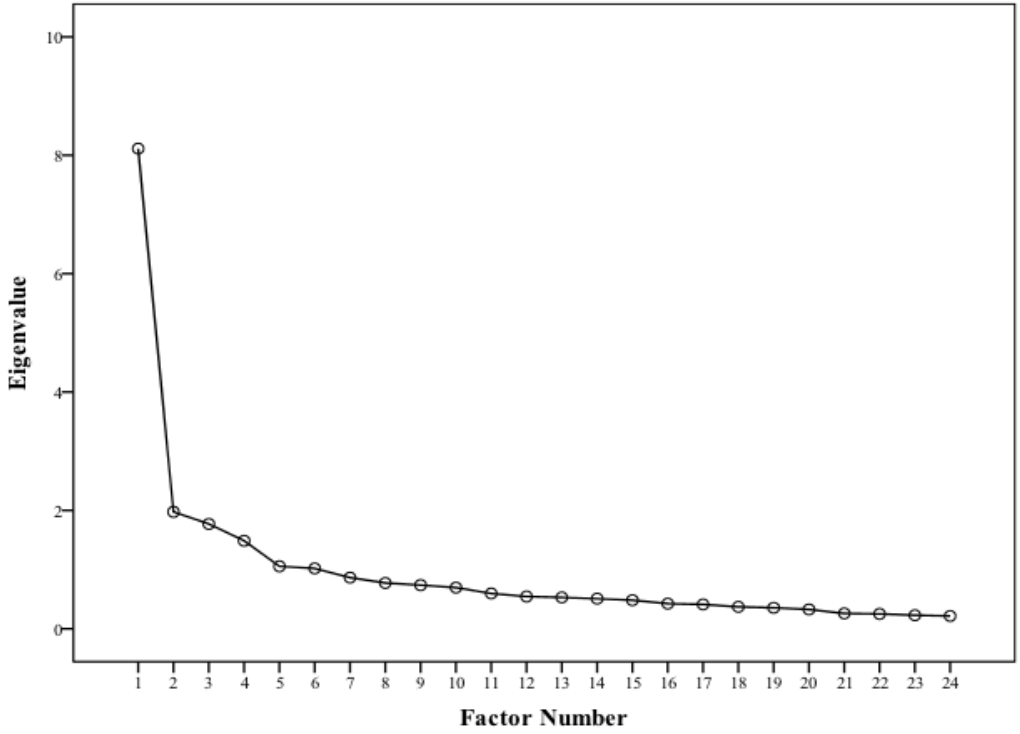


Figure 2: PCQ-24 principal axis factoring round 1 scree plot

PAF Round 2

The second round of PAF fixed the 24 items to extract on to four factors. In this round, all items loaded significantly onto at least one of the four factors (.39< *r* <.91) with the exception of item 19 (highest *r* = .28) and item 7 (highest *r* = .30). As such, these items were removed from the scale after this round. The factor loadings can be found in Appendix B.

PAF Round 3

In this round, the significant Bartlett's test indicated that factor analysis could be conducted on this sample (χ^2_{231} =2552.36, p<.01). The items were again forced to extract on to four factors. All of the items loaded significantly onto at least one of the four factors (.39< *r* <.90) – see Appendix B. However, it was observed that one of the factors was made up of the three negatively worded items (13; 20; 23) which is contrary to the theoretical conceptualisation of PsyCap for these items. As such, these items were then removed from the scale at this point.

PAF Round 4

A significant Bartlett's test (χ^2_{171} =2404.83, p<.01) and the KMO measure (.91) again indicated that factor analysis could be conducted on this sample. As the items belonging to an entire factor had been removed in round three, for this round, the items were not forced on to any number of factors, but were extracted using Kaiser's (1970) criterion whereby factors with eigenvalues greater than one are considered to be significant factors. In this instance, three factors emerged with eigenvalues greater than 1 and all items loaded significantly on to these three factors which can be seen in table 3.

As can be seen in this table, the first factor that emerged consisted of the items that were theoretically supposed to measure two aspects, namely hope and optimism. Thus, this factor was termed "Hopeful-Optimism". The second factor contained the items measuring confidence and thus this factor was termed "Confidence" and the third factor consisted of items measuring resilience which was therefore termed "Resilience". This 3-factor structure is similar to the structure reported in a recent South African study using PsyCap (Bateman, 2014). In addition, table 4 shows strong, significant bivariate correlations between each factor. Given that this factor was conceptualised to exhibit a multi-factor structure with a single, superordinate factor, another round of PAF was conducted to determine whether each subscale loaded on to one factor.

Table 3

*Factor Loadings of 3-factor 19-item PCQ Scale using Principal Axis Factoring**

		Factor		
Item Number	Fully Worded Item	Factor 1: Hopeful-Optimism Eigenvalue: 7.49 Explained Variance: 36.95%	Factor 2: Confidence Eigenvalue: 1.91 Explained Variance: 7.98%	Factor 3: Resilience Eigenvalue: 1.49 Explained Variance: 5.20%
8	At the present time, I am energetically pursuing my work goals.	.912		
21	I always look on the bright side of things regarding my job.	.838		
11	I can think of many ways to reach my current work goals.	.699		
10	Right now I see myself as being pretty successful at work.	.659		
22	I'm optimistic about what will happen to me in the future as it pertains to work.	.530		
12	At this time, I am meeting the work goals that I have set for myself.	.500		
24	I approach this job as if "every cloud has a silver lining".	.417		
9	There are lots of ways around any problem.	.390		
3	I feel confident contributing to discussions about the school's strategy.		-.892	
2	I feel confident contributing to discussions about the school's strategy.		-.860	
4	I feel confident helping to set targets/goals in my work area.		-.768	
5	I feel confident contacting people outside the company (e.g., suppliers, parents) to discuss problems.		-.573	
6	I feel confident presenting information to a group of colleagues.		-.527	
1	I feel confident analysing a long-term problem to find a solution.		-.517	
17	I can get through difficult times at work because I've experienced difficulty before.			.708
16	I usually take stressful things at work in stride.			.671
15	I can be "on my own" so to speak at work if I have to.			.523
14	I usually manage difficulties one way or another at work.			.512
18	I feel I can handle many things at a time at this job.			.505

*Rotation Method: Oblimin with Kaiser Normalization.

Table 4

Bivariate Correlations Between Each Factor of PsyCap (n = 289)

Variable	Hopeful-Optimism	Confidence
Hopeful-Optimism		
Confidence	.56**	
Resilience	.58**	.46**

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

PAF Round 5

In this round of factor analysis, a significant Bartlett's test (χ^2_3 =234.63, p<.01) and the KMO measure (.68) again indicated that factor analysis could be conducted on this sample. Each subscale was included as an item in this round of factor analysis. Only one factor emerged with an eigenvalue greater than one. In addition, the scree plot indicated the three items loaded onto one factor as can be seen in figure 3. Furthermore, each subscale loaded significantly onto this one factor (.67 < *r* < .84). It was therefore concluded that PsyCap exhibited a three-factor structure with a single, superordinate factor.

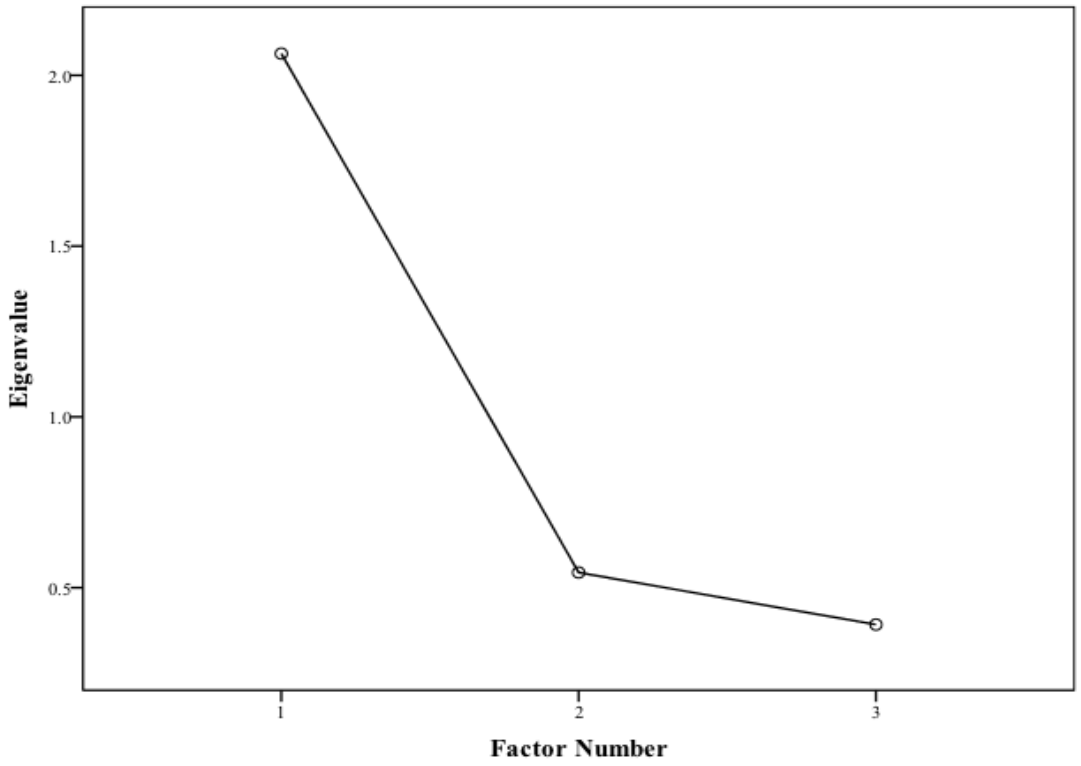


Figure 3: PCQ-19 principal axis factoring round 5 scree plot

Utrecht work engagement scale. Exploratory factor analysis was again used to validate this scale using Principal Axis Factoring. It was assumed that the factors would be correlated with each other and therefore, direct oblimin rotation was once again used in the factor analysis. It took three rounds of factor analysis before an interpretable solution could be found. The KMO measure was the same (.95) for each round of factor analysis as no items were removed from the scale and this KMO measure indicated that the sample was adequate for sample analysis to be conducted. Each round is described in detail below.

PAF Round 1

The significant result of the Bartlett's test of Sphericity (χ^2_{136} =2783.01, p<.01) indicated that PAF was suitable in this round. Two factors emerged with eigenvalues greater than one. All items loaded significantly onto at least one factor (.34 < *r* < .98) which can be seen in Appendix B. However, there was evidence of potential cross-loading for item 11 and item 12. This is present when items that have factor loadings greater than .3 for more than two factors and at least two of these loadings have an absolute difference in factor loadings less than .25. In addition, this factor structure is contrary to the theorised structure of Schaufeli et al. (2002) who had found the scale to be three dimensional with the factors representing absorption, vigour and dedication. As such, the items were forced to extract on to 3 factors for the next round of PAF.

PAF Round 2

In this round, all items loaded significantly (.35 < *r* < .86) on to at least one factor with the exception of item 6 (*r* = .28) which did not load significantly onto any factor which can be seen in Appendix B. Yet, the items did not load in the same manner as theorised by Schaufeli et al. (2002) and it was not possible to find an interpretable common thread among the items which loaded together. As De Bruin, Hill, Henn and Muller (2013) found that work engagement should be considered as a unidimensional construct the extraction was consequently forced on to one factor for the next round of PAF.

PAF Round 3

In this round, all items were forced to extract onto a single factor. All items loaded significantly onto to this one factor which can be seen in table 6. This lends support to the argument made by De Bruin et al. (2013) and work engagement was therefore utilised as a one-dimensional construct as measured by the 17-item UWES scale.

Table 5

Factor Loadings of 17-item Utrecht Work Engagement Scale Using Principal Axis Factoring Forcing Items onto 1 Factor

Item Number	Fully Worded Item	Factor 1: Work Engagement; Eigenvalue: 7.94 Explained Variance: 46.71%
7	My job inspires me.	.862
5	I am enthusiastic about my job.	.850
4	At my job, I feel strong and vigorous.	.770
2	I find the work that I do full of meaning and purpose.	.761
8	When I get up in the morning, I feel like going to work.	.758
11	I am immersed in my work.	.754
12	I can continue working for very long periods at a time.	.720
9	I feel happy when I am working intensely.	.719
10	I am proud of the work that I do.	.713
1	At my work, I feel bursting with energy.	.688
3	Time flies when I am working.	.680
14	I get carried away when I am working.	.626
15	At my job, I am very resilient, mentally.	.619
6	When I am working, I forget everything else around me.	.610
17	At my work, I always persevere, even when things do not go well.	.511
13	To me, my job is challenging.	.417
16	It is difficult to detach myself from my job.	.313

Extraction Method: Principal Axis Factoring.

Workplace commitment scale. For the validation process, the items relating to both commitment targets (to the school and to teaching) were analysed together to determine whether the items actually loaded on to each target separately. The KMO measure (.89) and significant Bartlett's test (χ^2_{28} =1921.53, p<.01) indicated that factor analysis could be conducted across the eight items. PAF was used with Direct Oblimin rotation. Two factors emerged with eigenvalues greater than 1 and all eight items loaded significantly on to these two factors as can be seen in table 7. The commitment to school items all loaded on to the same factor and the commitment to teaching profession items all loaded on to the other factor. This indicated that teachers' commitment to school and is indeed a different construct to teachers' commitment to the teaching profession. As such, each factor was treated as a separate, single factor variable in further analysis.

Table 6

Factor Loadings of Workplace Commitment Scale Using Principal Axis Factoring with Direct Oblimin Rotation

Item Number	Fully Worded Items	Factor 1: Commitment to Teaching Eigenvalue: 4.86 Explained Variance: 60.72%	Factor 2: Commitment to School Eigenvalue: 1.23 Explained Variance: 15.34%
2.2	To what extent do you care about teaching?	.940	
2.3	How dedicated are you to teaching?	.892	
2.1	How committed are you to teaching?	.879	
2.4	To what extent have you chosen to be committed to teaching?	.772	
1.3	How dedicated are you to your school?		.878
1.2	To what extent do you care about your school?		.854
1.1	How committed are you to your school?		.847
1.4	To what extent have you chosen to be committed to your school?		.832

Authentic leadership inventory (ALI) scale. In order to validate this scale, Principal Axis Factoring was again used with direct oblimin rotation. The KMO measure (.94) and significant Bartlett's test result (χ^2_{91} =2117.84, p<.01) indicated that factor analysis could be conducted on this sample. Only one factor emerged with an eigenvalue greater than one (7.03). In addition, the scree plot suggested that these items could be best represented as one factor which can be seen in appendix B. All items loaded significantly on to this factor (r > .30) as can be in table 5 below. This factor was therefore termed "Perceived authentic leadership of principal" and the original 14-item ALI scale was considered to be a valid measure of this construct.

Table 7

Factor Loadings of 1-factor 14-item Perceived Authentic Leadership Scale

Item Number	Fully Worded Items	Factor 1: Perceived Authentic Leadership Eigenvalue: 7.03 Explained Variance: 50.22%
2	My principal shows consistency between his/her beliefs and actions.	.812
7	My principal shows that he/she understands his/her strengths and weaknesses.	.808
1	My principal clearly states what he/she means.	.800
10	My principal objectively analyses relevant data before making a decision.	.775
14	My principal encourages others to voice opposing points of view.	.753
6	My principal carefully listens to alternative perspectives before reaching a conclusion.	.749
4	My principal describes accurately the way that others view his/her abilities.	.736
13	My principal is guided in his/her actions by internal moral standards.	.731
12	My principal expresses his/her ideas and thoughts clearly to others.	.728
8	My principal openly shares information with others.	.650
5	My principal uses his/her core beliefs to make decisions.	.626
11	My principal is clearly aware of the impact he/she has on others.	.623
3	My principal asks for ideas that challenge his/her core beliefs.	.604
9	My principal resists pressures on him/her to do things contrary to his/her beliefs.	.419

Extraction Method: Principal Axis Factoring.

Reliability Analysis

In order to confirm the scales' internal consistency, Cronbach's alpha coefficient was determined for each scale. This coefficient is greatly influenced by the number of items in the scale. However, for scales with less than 20 items, a rule of thumb of .7 is often used to determine whether the scale exhibits adequate levels of internal consistency and is therefore used in this study (Cortina, 1993). In addition, the corrected item-total correlations of each item in all the scales were analysed to determine whether the responses given for this item were consistent with those provided on the scale overall. As a general rule, items with item-total correlations greater than .30 were considered high enough to be retained in the scale (Nunnally & Bernstein, 1994).

As can be seen in table 8, all scales had adequate levels of internal consistency as all the scales had Cronbach's alpha scores greater than .75. In addition, the items in all of the scales had corrected item-total correlations greater than .3. Each PsyCap subscale was reliable as well as the scale measuring PsyCap as a superordinate factor which consisted of each

subscale. As such, no items were removed due to reliability concerns and all scales were considered to be reliable measures of the constructs they claimed to measure.

Table 8
Internal Consistency Reliability of All Scales

Scale	Cronbach's Alpha	Corrected Item-Total Correlations
Psychological Capital Questionnaire (PCQ)	.78	.57< *r* <.67
Hopeful-Optimism (8 items)	.87	.45< *r* <.74
Confidence (6 items)	.87	.56< *r* <.77
Resilience (5 items)	.76	.39< *r* <.62
Utrecht Work Engagement Scale (17 items)	.93	.32< *r* <.82
Commitment to the School (4 items)	.92	.78< *r* <.84
Commitment to Teaching (4 items)	.93	.79< *r* <.87
Authentic Leadership Inventory (14 items)	.94	.41< *r* <.80

Descriptive Statistics

After the completion of the validity and reliability analyses, the mean scores per construct across all participants were determined. These can be seen in table 9 below. On average, participants reported levels of psychological capital, perceived authentic leadership and workplace commitment to be higher than the midpoints of their respective 5-, 6- or 7-point measures indicating that teachers in this sample had relatively high scores on these scales.

The average commitment scores for both commitment targets are very close to the maximum of the scale which could suggest that these teachers feel a strong sense of commitment to both their schools and to the teaching profession. Furthermore, the participants displayed a slightly higher level of commitment towards their profession than their school.

Table 9
Descriptive Statistics for Each Scale

Scale	*N*	*Min*	*Max*	*M*	*SD*	*Skewness*	*Kurtosis*
Psychological Capital	289	1.73	6.00	4.76	.61	-1.03	2.78
Work Engagement	290	.82	6.00	4.38	.84	-.59	1.18
Commitment to the School	290	2.00	5.00	4.35	.65	-.93	.52
Commitment to Teaching	289	2.25	5.00	4.54	.62	-1.35	1.24
Perceived Authentic Leadership	282	1.00	5.00	3.61	.72	-.56	.65

Hypothesis Testing Results

In this section, the results of the testing of the following hypotheses will be presented:

H1: PsyCap of teachers is positively related to work engagement.

H2a: PsyCap of teachers is positively related to teacher commitment to the school.

H2b: PsyCap of teachers is positively related to teacher commitment to teaching.

H3: Perceived Authentic leadership of school principals is positively related to PsyCap of teachers.

H4: Perceived Authentic leadership of school principals is positively related to work engagement of teachers.

H5a: Perceived Authentic leadership of school principals is positively related to teacher commitment to the school.

H5b: Perceived Authentic leadership of school principals is positively related to teacher commitment to teaching.

H6a: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher work engagement.

H6b: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher commitment to the school.

H6c: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher commitment to teaching.

In order to test these hypotheses, bivariate correlation analyses were conducted. To determine whether the use of a parametric correlation test was possible, namely Pearson's product moment correlation, the assumptions associated with this test were first analysed.

Outliers. The first assumption associated with Pearson's correlation test is that there must be no outliers present in the data. Box-and-whisker plots were used to determine whether any outliers were present in the computed mean scales of the relevant variables in this study. Cases that were three times the standard deviation away from the median were considered to be outliers is a useful rule of thumb for detecting outliers (Osborne & Overbay, 2004). As can be seen by the stars in Figure 4, the plots suggested that two outliers were present in the PsyCap dataset. As such these scores were removed from further analyses. The final box-and-whisker plots can be seen in Appendix B.

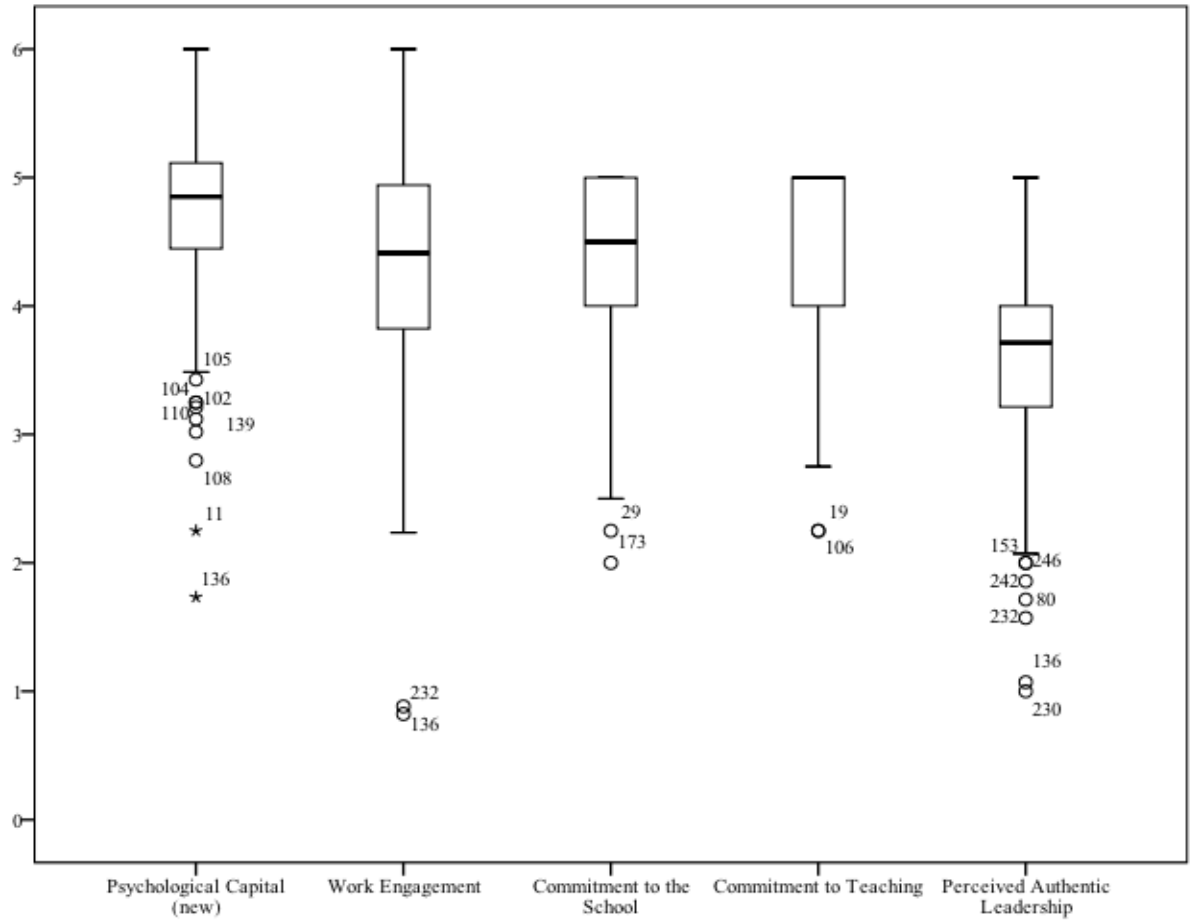


Figure 4: Box-and-whisker plots of summarized variables before extreme cases were removed

Normality. The second key assumption that should ideally hold for parametric tests is that the data must be normally distributed. This can be explored in a number of ways with the most common ways using visual means such as Q-Q plots or a goodness-of-fit test. However,

some researchers have concluded that as long as sample sizes are sufficiently large (100 can be used as rule of thumb), the assumption of normality does not need to hold (Lumley, Diehr, Emerson, & Chen, 2002). Given that the sample size in this study was greater than 285 for each variable, the assumption of normality could be disregarded and Pearson's correlation coefficient was used to conduct bivariate correlation analysis.

Correlation results. The results of the bivariate correlation tests can be seen in table 10. The annual average school fees were included in the analysis as a proxy variable for financial resources available at the school as schools that have higher school fees are generally likely to have more resources available to them. Thus, this was included to determine whether the level of financial resources related strongly with the other variables in this study which would suggest that financial resources was contributing to variance in the teacher outcomes. According to Cohen's (1988) guidelines, the strength of a correlation coefficient of .1 is weak, of .3 is moderate and of .5 or greater is strong. As can be seen in table 10, negligible relationships were found between average annual school fees and all other variables which suggested that the level of financial resources is not related to teacher PsyCap, work engagement or commitment levels. There was one statistically significant negative relationship between annual school fees and work engagement which suggests that the less financial resources a school has, the higher levels of engagement the teachers are likely to have. This could be due to the fact that less financial resources requires teachers to be more creative in their teaching methods and requiring of more focus and energy which could lead to greater levels of engagement. However, this was a very weak relationship and considered practically not relevant.

Table 10

Pearson's Product Moment Bivariate Correlations Between Each Variable

Variable	Average annual school fees	Perceived Authentic Leadership	Psychological Capital	Confidence	Hopeful-Optimism	Resilience	Work Engagement	Commitment to the School
Average annual school fees								
Perceived Authentic Leadership	.09 (*n* = 279)							
Psychological Capital	.11 (*n* = 284)	.05 (*n* = 278)						
Confidence	.04 (*n* = 286)	.07 (*n* = 280)	.83** (*n* = 287)					
Hopeful-Optimism	.01 (*n* = 286)	.20** (*n* = 280)	.80** (*n* = 287)	.55** (*n* = 289)				
Resilience	.10 (*n* = 286)	-.04 (*n* = 280)	.82** (*n* = 287)	.46** (*n* = 289)	.58** (*n* = 289)			
Work Engagement	-.12* (*n* = 287)	.21**(*n* = 282)	.59**(*n* = 286)	.41** (*n* = 288)	.64** (*n* = 288)	.33** (*n* = 288)		
Commitment to the School	.11 (*n* = 287)	.29**(*n* = 281)	.48**(*n* = 286)	.40** (*n* = 288)	.44** (*n* = 288)	.28** (*n* = 288)	.55**(*n* = 289)	
Commitment to Teaching	-.02 (*n* = 286)	.12*(*n* = 280)	.43**(*n* = 285)	.36** (*n* = 287)	.42** (*n* = 287)	.27** (*n* = 287)	.56**(*n* = 288)	.56**(*n* = 289)

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

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

Hypotheses 1 – 5

H1: PsyCap of teachers is positively related to work engagement.

H2a: PsyCap of teachers is positively related to teacher commitment to the school.

H2b: PsyCap of teachers is positively related to teacher commitment to teaching.

The results showed that the relationships between PsyCap and its outcome variables (work engagement, commitment to the school and commitment to teaching) were all considerably stronger relationships than the relationships between perceived authentic leadership and its theorised outcome variables. The strongest relationship was found between PsyCap and work engagement of teachers. This relationship was both significant and a large effect size according to Cohen's (1988) guidelines. Thus, hypothesis 1 was supported in this study. In addition, PsyCap had moderately strong relationships with commitment to both the school and teaching and both relationships were significant. As such, hypotheses 2a and 2b were both supported.

H3: Perceived Authentic leadership of school principals is positively related to PsyCap of teachers.

The relationship between perceived authentic leadership and overall PsyCap was very close to zero and was not significant. Thus, hypothesis 3 was not supported. However, there was a significant positive relationship found between perceived authentic leadership and the hopeful-optimism of teachers. This suggests that although perceived authentic leadership may not relate to overall PsyCap, the more authentic a principal is perceived to be, the more hopeful-optimism teachers are likely to possess. However, this relationship was still a weak one.

H4: Perceived Authentic leadership of school principals is positively related to work engagement of teachers.

H5a: Perceived Authentic leadership of school principals is positively related to teacher commitment to the school.

H5b: Perceived Authentic leadership of school principals is positively related to teacher commitment to teaching.

Positive relationships between perceived authentic leadership and work engagement as well as between perceived authentic leadership and commitment to both the school and to teaching were significant relationships, but were still relatively weak relationships (less than 0.3) according to Cohen's (1988) guidelines. Thus, hypothesis 4 and hypotheses 5a and 5b

were supported as the relationships were significant, but it should be noted that these relationships were still weak relationships.

Hypothesis 6a – 6c

The final hypothesis tested in this study was if PsyCap mediates the relationship between perceived authentic leadership, work engagement and workplace commitment. In order to test these hypotheses, the Hayes (2013) PROCESS plugin for SPSS was used, through which mediation can be tested via the use of multiple linear regression. Given that this process is based on a number of regression analyses, a number of assumptions were first tested to determine whether the data were appropriate for multiple regression and make any necessary adjustments to the data (Field, 2013).

Additivity and linearity. The relationship between each predictor variable and the associated outcome variable was analysed to determine whether this relationship was linear. Scatter plots between perceived authentic leadership and PsyCap, work engagement and commitment (Figures 5 – 8) indicate a weak linear relationship between these variables. Scatter plots between PsyCap, work engagement and commitment (Figures 9 – 11) show stronger linearity, with the strongest being between PsyCap and work engagement. The variables were assumed to be additive in nature for the multiple regression.

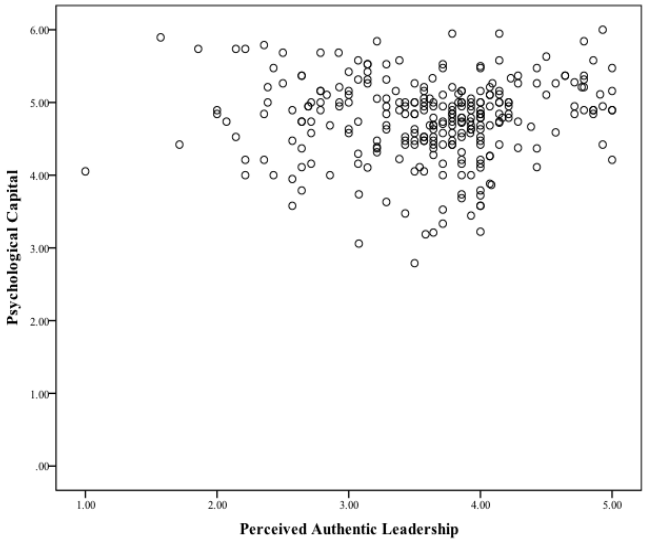


Figure 5: Scatter plot of perceived authentic leadership and PsyCap

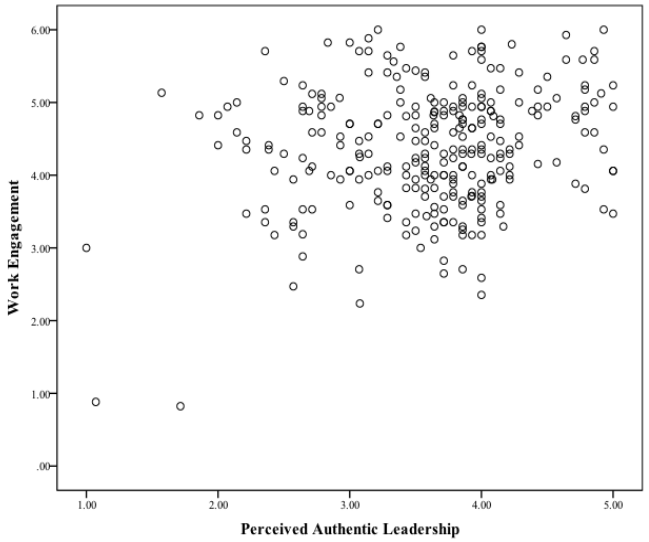


Figure 6: Scatter plot of perceived authentic leadership and work engagement

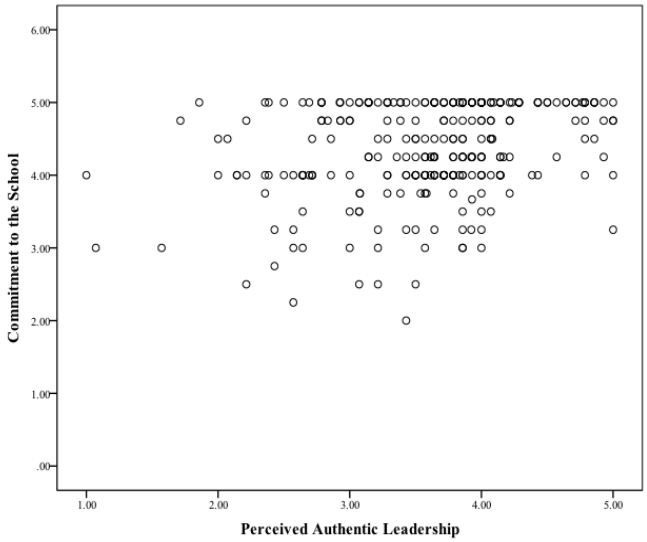


Figure 7: Scatter plot of perceived authentic leadership and commitment to the school

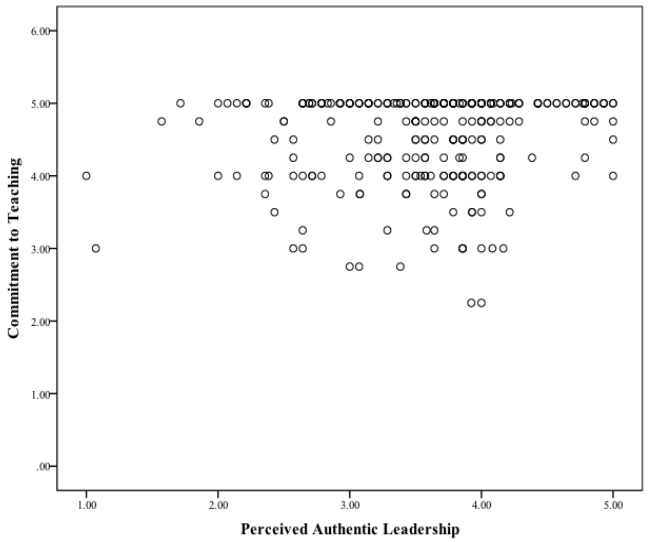


Figure 8: Scatter plot of perceived authentic leadership and commitment to teaching

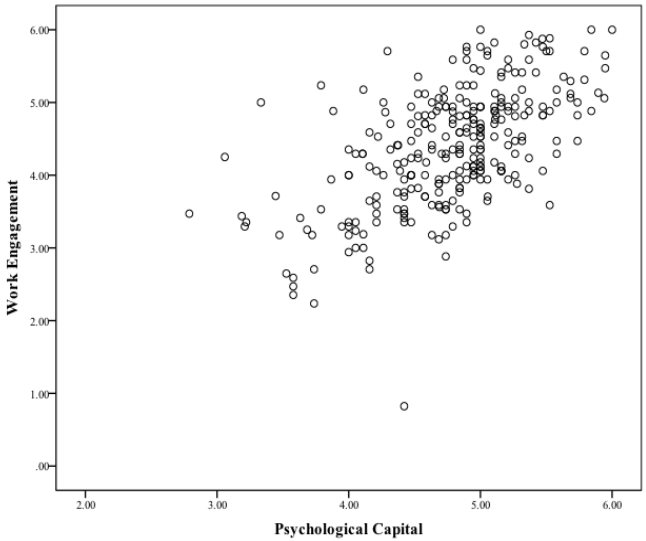


Figure 9: Scatter plot of PsyCap and work engagement

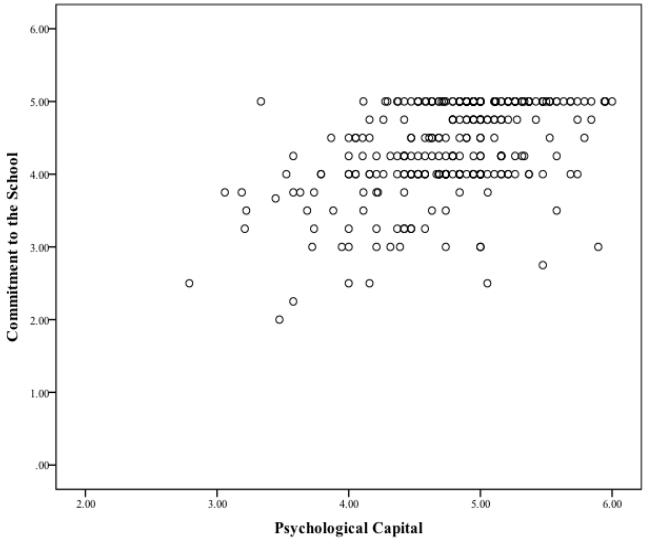


Figure 10: Scatter plot of PsyCap and commitment to the school

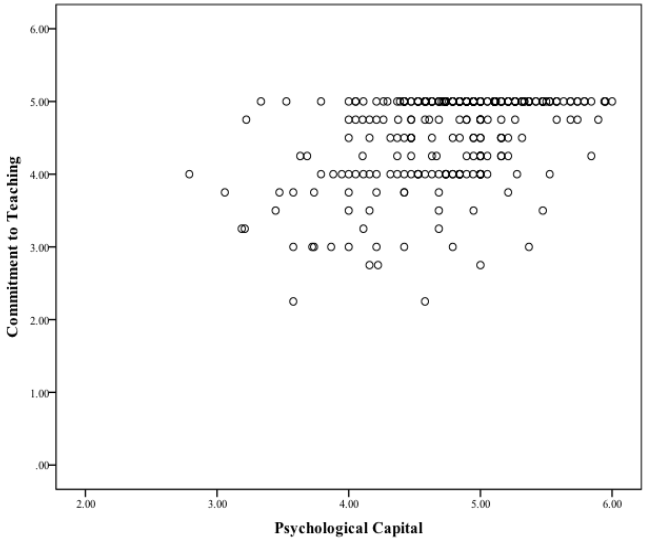


Figure 11: Scatter plot of PsyCap and commitment to teaching

Independence of residuals. Residual or error terms represent the differences between the observed score and true score of a given response. These residuals may be present for a number of reasons such as measurement error and should be independent when conducting multiple regression (Field, 2013). The residuals can be considered to be independent when no autocorrelation is present between them. This was tested using the Durbin-Watson test which can be seen in table 11 for each outcome variable. The value of the test statistic (*D*) in this test ranges from 1 to 4. In this study, models with a D statistic between 1.5 and 2.5 were considered to have residuals that are independent. For all models in this study, the *D* test statistic was within the range (1.5 – 2.5) which indicated that the errors could be treated as independent.

Table 11

Durbin Watson Tests of Independent Errors for Multiple Regression Models

Outcome Variable*	*D*
Work Engagement	1.89
Commitment to the School	2.16
Commitment to Teaching	1.86

** Predictor variables: Perceived authentic leadership and PsyCap*

Homoscedasticity. Homoscedasticity is present when the distribution of the residuals is constant across the predictor variables (Aguinis, 2004). This assumption was tested using residual scatter plots of standardised predicted outcome values against standardised residuals. Ideally, the points on this plot should be scattered at equal distances around zero. When a cone-shaped pattern is visible in this plot, this is indicative of heteroscedasticity and therefore the assumption of homoscedasticity would be violated. No distinct cone-shaped pattern can be seen in Figure 12 when work engagement is the outcome variable. There seems to be a cone-shaped pattern present in figures 13 and 14 which suggests that the homoscedasticity assumption is violated when commitment is used as an outcome variable. However, this cone-shape pattern is not clearly prominent indicating a minor violation of homoscedasticity and, according to Darlington and Hayes (2016), minor violations generally don't cause problems in the regression analysis.

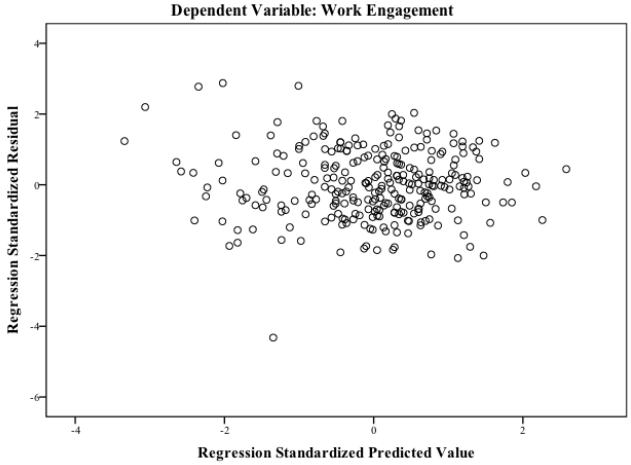


Figure 12: Residual plot of work engagement as outcome variable

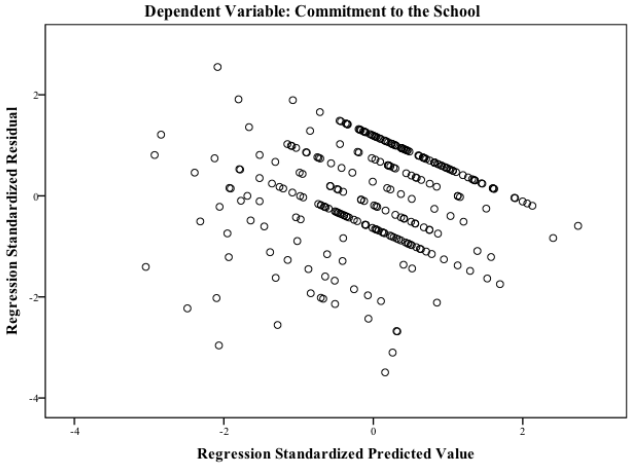


Figure 13: Residual plot of commitment to school as outcome variable

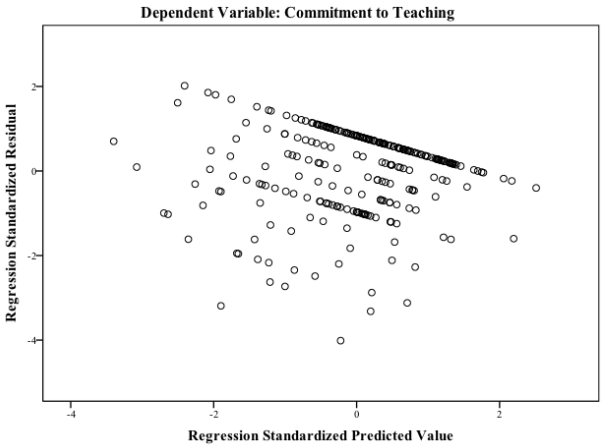


Figure 14: Residual plot of commitment to teaching as outcome variable

Normally distributed residuals. Another assumption that should hold is that the residuals associated with each regression model should be normally distributed. However, given that the sample size is sufficiently large, the distribution of the residuals should approximate to normal and thus according to Lumley et al. (2002), it is not necessary to test this assumption.

Multicollinearity. A further assumption of multiple regression is that multicollinearity between predictor variables should be negligible. Multicollinearity means that there is a moderate or high correlation between two or more predictor variables in the model (Iacobucci, 2008). The multicollinearity diagnostics can be seen in table 12 below which contains scores for Tolerance and for the Variance Inflation Factor (VIF) which provide evidence about whether multicollinearity exists in the model. If Tolerance is greater than 0.1, multicollinearity is present. The VIF is the reciprocal of Tolerance. As such, if VIF is less than 10, it is generally accepted that multicollinearity is not present (Field, 2013). In these models, Tolerance is

considerably greater than 0.1 and the VIF statistic is therefore considerably less than 10 and thus multicollinearity between the predictor variables is negligible.

Table 12
Multicollinearity Diagnostics for Multiple Regression Models

Predictor Variable	Tolerance	VIF
Perceived authentic leadership	0.99	1.00
Psychological capital	0.99	1.00

Model bias. The last aspect of the data that should be assessed is whether there is any bias in the data. This can be assessed by analysing the potential outliers and influential cases in the data set. Standardised residuals can be used to assess the presence of outliers whereby any cases with standardised residuals of an absolute value greater than three can be considered to be problematic (Field, 2013). There were a few cases in each model that appeared to be outliers as indicated by relatively high standardised residuals (absolute value greater than three) which can be seen in Appendix B. However, Field (2013) noted that one should first determine whether there are any influential cases through the use of Cook's distances. If the maximum Cook's distance is less than 1, there are no influential cases and removing potential outliers is therefore not necessary. The maximum Cook's distance for each regression model can be seen in table 13. As the maximum Cook's distance in all of the regression models are less than one, there are no influential cases that may have distorted the regression results.

Table 13
Maximum Cook's Distances in Each Regression Model

Outcome Variable*	Max. Cook's Distance
Work Engagement	.19
Commitment to the School	.13
Commitment to Teaching	.08

** Predictor variables: Perceived authentic leadership and PsyCap*

Testing for mediation. Until recently, the most common method to test for mediation was the procedure suggested by Barron and Kenny (1986) which set out four conditions that must be met in order to conclude that mediation exists. However, recently, Hayes (2009; 2013) argued that this process is flawed and that it has received numerous criticisms for being a poor way to detect a mediating effect. In addition, he argued that the condition that the predictor variable (X) must significantly predict the outcome variable (Y) is not necessary which is one

of the key conditions set out by Baron and Kenny (1986). He subsequently developed a mediation procedure which accounts for the flaws that he argued were present in the Baron and Kenny (1986) process. Hayes' mediation analysis process was therefore used to test whether PsyCap mediated the relationship between perceived authentic leadership and work engagement as well as between perceived authentic leadership and workplace commitment (to the school and to teaching).

The Hayes process involves two main steps. The first step is to calculate the indirect effect or relationship between a predictor variable and an outcome variable given the presence of the mediating variable. The second step is to statistically test whether this effect is zero or not so that inferences can be drawn about the presence of mediation. Each step will be briefly explained and then applied to the data in this study.

Figure 15 shows a simple mediation model as outlined by Hayes (2009). Part A of this figure indicates a simple relationship between a predictor variable (X) and outcome variable (Y). The relationship between these variables is called the total effect denoted by *c*. Part B of this figure represents the relationship between a predictor variable (X) and outcome variable (Y) through the presence of a mediation variable (M). The relationship between the predictor and mediating variables is denoted by *a* and the relationship between the mediating and outcome variables is denoted by *b*. The indirect effect is the product of *a* and *b*. The relationship between the predictor variable (X) and outcome variable (Y) is *c'* and is called the direct effect. The total effect is the sum of the direct and indirect effects ($c = c' + ab$). Therefore, the indirect effect is total effect minus the direct effect ($ab = c - c'$).

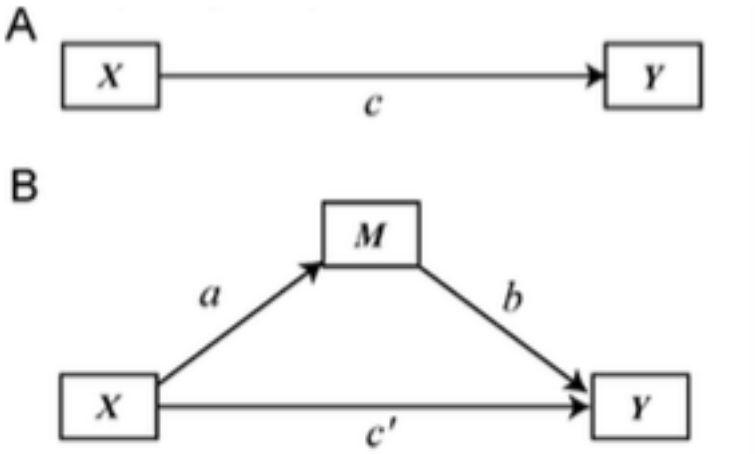


Figure 15: Simple mediation process *Source: Hayes (2009)*

In order to test whether direct, total and indirect effects are significant, two possible methods can be used. The first is to use the significance testing via the Sobel test. However, this method has a number of assumptions that are difficult to meet and is low in power (Hayes, 2013). The second method, which is the method used here, is to use bootstrapping which involves sampling numerous samples with replacement and reveals confidence intervals in which the population parameter lies. Using a 95% confidence interval, if there is a zero within the interval, the effect is not significant (Hayes, 2013). The results of the mediation analyses relating to hypotheses 6a-6c is discussed step-by-step below.

Hypothesis 6a: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher work engagement.

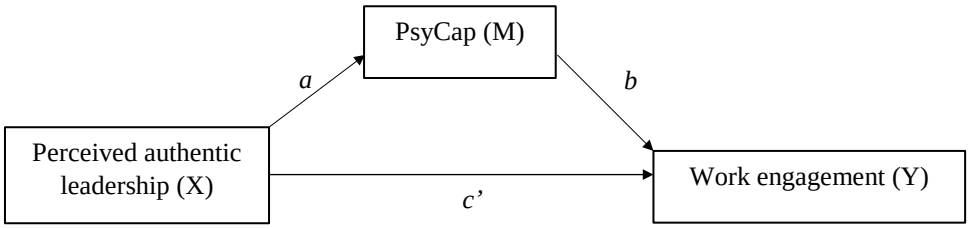


Figure 16: Mediation model with work engagement as outcome variable

Table 14
Regression Results for the Mediation of Perceived Authentic Leadership on Work Engagement by PsyCap

	Estimate	*SE/MSE*	*p*	95% Bootstrapped Confidence Intervals	
				Lower Limit	Upper Limit
Model without mediator					
Intercept	3.71	.25	<.0001	3.22	4.20
PAL → WE (*c*)	.18	.07	<.01	.05	.32
$R^2_{Y, X}$	.03	.64	<.01		
Model with mediator					
Intercept	.05	.39	.90	-.73	.82
PsyC → WE (*b*)	.78	.07	<.0001	.64	.92
PAL → WE (*c'*)	.17	.06	<.01	.06	.28
Indirect effect (*c* – *c'*)	.02	.04		-.06	.09
$R^2_{M, X}$	.00	.32	.68		
$R^2_{Y, MX}$	.32	.44	<.001		
Effect ratio (indirect effect to total effect)	.08	1.50		-1.13	.50

Note: PAL = perceived authentic leadership; WE = work engagement; PsyC = psychological capital
In this model, PAL is the independent variable, PsyC is the potential mediator and WE is the outcome variable.
$R^2_{Y, X}$ = proportion of variance in Y (WE) explained by X (PAL)
$R^2_{M, X}$ = proportion of variance in M (PsyC) explained by X (PAL)
$R^2_{Y, MX}$ = proportion of variance in Y (WE) explained by M (PsyC) and X (PAL)

Figure 16 shows the hypothesised mediation relationship between perceived authentic leadership, PsyCap and work engagement. Table 14 shows the results of the mediation analysis used to test this hypothesised relationship. The 95% confidence intervals were determined using bootstrapping based on 5000 iterations. The indirect effect (c – c') was negligible and insignificant as the 95% confidence interval [-.06; .09] contained a zero. Furthermore, the effect ratio which is the ratio of the indirect effect to the total effect and is loosely defined as the proportion of the total effect that is mediated was .08 (Preacher & Kelley, 2011). This indicates that a low proportion of the total effect is mediated. This suggests that PsyCap did not mediate the relationship between perceived authentic leadership and work engagement and hypothesis 6a was therefore not supported. In addition, the coefficients of determination showed that variance in perceived authentic leadership accounted for very little variance in PsyCap (<1%) and work engagement (3%). However, PsyCap was a strong predictor of work engagement in this model (β = .78).

H6b: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher commitment to the school.

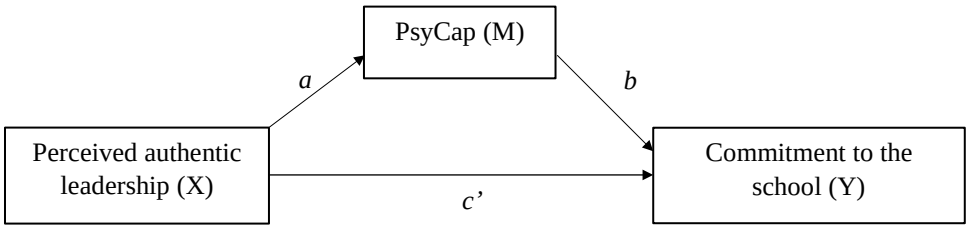


Figure 17: Mediation model with commitment to the school as outcome variable

Table 15
Regression Results for the Mediation of Perceived Authentic Leadership on Commitment to the School by PsyCap

	Estimate	*SE/MSE*	*p*	95% Bootstrapped Confidence Intervals	
				Lower Limit	Upper Limit
Model without mediator					
Intercept	3.44	.20	<.0001	3.05	3.83
PAL → SCOM (*c*)	.25	.05	<.0001	.15	.36
$R^2_{Y,X}$	.07	.39	<.0001		
Model with mediator					
Intercept	.99	.33	<.01	.35	1.64
PsyC → SCOM (*b*)	.52	.06	<.0001	.40	.63
PAL → SCOM (*c'*)	.24	.05	<.0001	.15	.33
Indirect effect (*c – c'*)	.01	.03		-.04	.06
$R^2_{M,X}$	.00	.32	.68		
$R^2_{Y,MX}$	.28	.31	<.001		
Effect ratio (indirect effect to total effect)	.03	.12		-.22	.24

Note: PAL = perceived authentic leadership; SCOM = commitment to the school; PsyC = psychological capital In this model, PAL is the independent variable, PsyC is the potential mediator and SCOM is the outcome variable.
$R^2_{Y, X}$ = proportion of variance in Y (WE) explained by X (PAL)
$R^2_{M, X}$ = proportion of variance in M (PsyC) explained by X (PAL)
$R^2_{Y, MX}$ = proportion of variance in Y (WE) explained by M (PsyC) and X (PAL)

The mediation model with teacher commitment to the school as the outcome variable can be seen in figure 17 and the results of the mediation analysis in table 15. These results again indicate that the indirect effect was negligible as the 95% bootstrapped confidence interval contained a zero [-.04; .06] and the effect ratio was very weak at .03. As such, PsyCap did not mediate the relationship between perceived authentic leadership and teacher commitment to the school and hypothesis 6b was not supported. In addition, the variance in perceived authentic leadership accounted for very little variance in commitment to the school (7%). However, PsyCap was a moderately strong predictor of teacher commitment to the school (β = .52).

H6c: PsyCap of teachers mediates the relationship between perceived principal authentic leadership and teacher commitment to teaching.

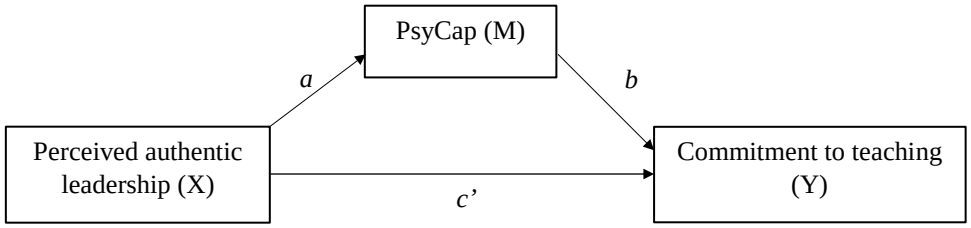


Figure 18: Mediation model with commitment to teaching as outcome variable

Table 16
Regression Results for the Mediation of Perceived Authentic Leadership on Commitment to Teaching by PsyCap

				95% Bootstrapped Confidence Intervals	
	Estimate	*SE/MSE*	*p*	Lower Limit	Upper Limit
Model without mediator					
Intercept	4.24	.19	<.0001	3.86	4.62
PAL → TCOM (*c*)	.08	.05	.12	-.02	.19
$R^2_{Y,X}$	.01	.38	.12		
Model with mediator					
Intercept	2.11	.33	<.0001	1.45	2.76
PsyC → TCOM (*b*)	.45	.06	<.0001	.33	.57
PAL → TCOM (*c'*)	.08	.05	.12	-.02	.17
Indirect effect (*c* – *c'*)	.01	.02		-.04	.05
$R^2_{M,X}$	.00	.32	.68		
$R^2_{Y,MX}$	.18	.31	<.001		
Effect ratio (indirect effect to total effect)	.09	3.31		-1.73	1.23

Note: PAL = perceived authentic leadership; SCOM = commitment to the school; PsyC = psychological capital
In this model, PAL is the independent variable, PsyC is the potential mediator and SCOM is the outcome variable.
$R^2_{Y, X}$ = proportion of variance in Y (WE) explained by X (PAL)
$R^2_{M, X}$ = proportion of variance in M (PsyC) explained by X (PAL)
$R^2_{Y, MX}$ = proportion of variance in Y (WE) explained by M (PsyC) and X (PAL)

The results of the final hypothesis test are shown in Figure 18 and Table 16. As with hypotheses 6a and 6b, the indirect effect was negligible as indicated by a zero present in the 95% bootstrapped confidence interval [-.04; .05] and small effect ration (.09). This indicates that PsyCap did not mediate the relationship between perceived authentic leadership and commitment to teaching. Therefore, hypothesis 6c was also not supported. Furthermore, the variance in perceived authentic leadership accounted for very little variance in commitment to teaching (1%) which further suggests that perceived authentic leadership was of no relevance in predicting the outcome variables in this study.

Results summary

Figure 19 represents the theoretical model that was tested in this study with the correlation coefficients added in. Although there were positive relationships between the relevant variables, the results of this study, as depicted in Figures 20 – 22, show that PsyCap did not mediate the relationships between the predictor and outcome variables. In addition, PsyCap exhibited a three-factor structure in the study's sample as opposed to a four-factor structure as theorised. A discussion of these results follows in the next chapter.

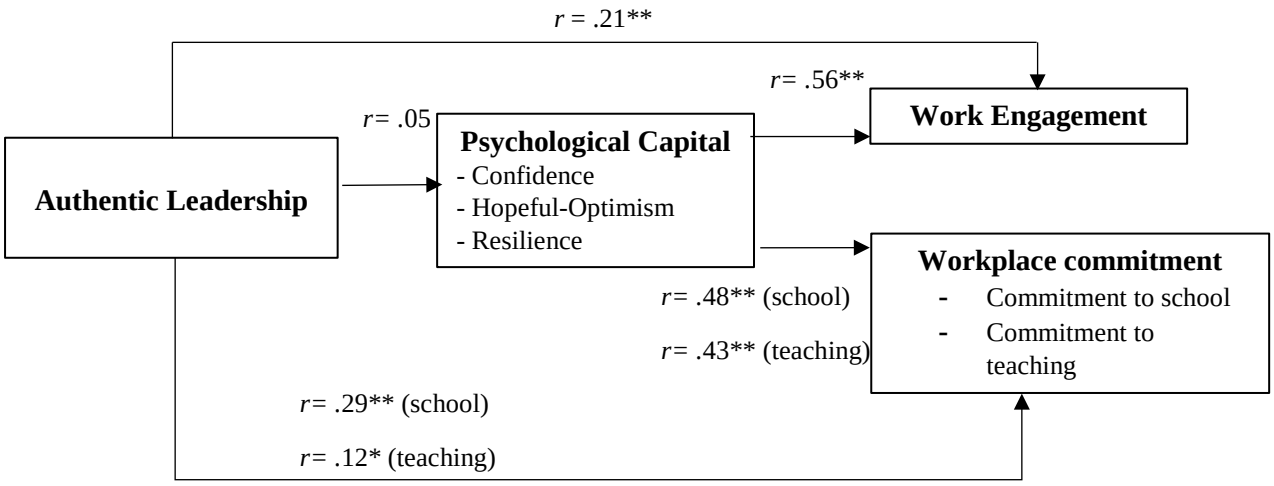
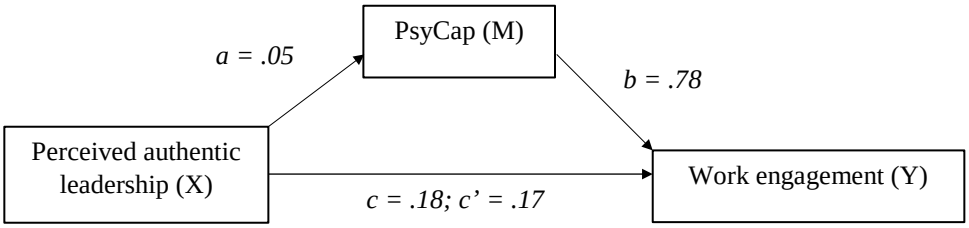


Figure 19: Conceptual framework for hypothesised model with correlation coefficients

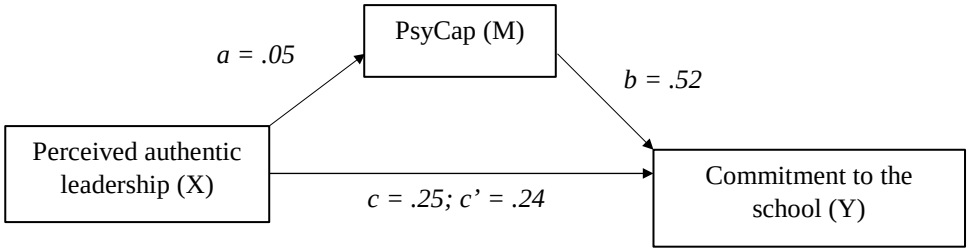
*** Correlation is significant at the 0.01 level (2-tailed).*

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



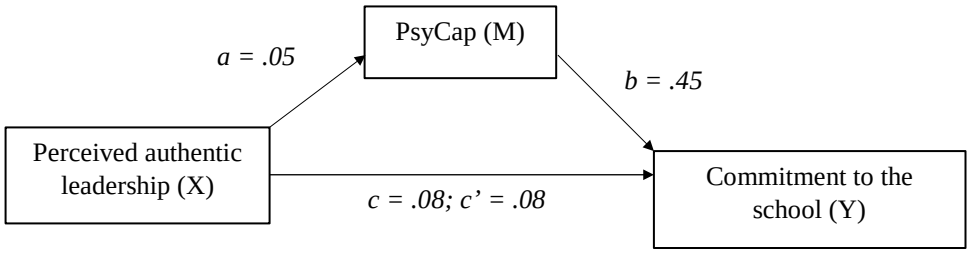
95% CI [-.06; .09]

Figure 20: Mediation model with work engagement as outcome variable with estimates included



95% CI [-.04; .06]

Figure 21: Mediation model with commitment to the school as outcome variable with estimates included



95% CI [-.04; .05]

Figure 22: Mediation model with commitment to teaching as outcome variable with estimates included

5. DISCUSSION

The aim of this study was to analyse the role that psychological capital had to play in helping school teachers fulfil their roles effectively. This was done by analysing potential outcomes (work engagement and workplace commitment) and a potential antecedent (authentic leadership) of PsyCap. It was hoped that by providing insight into the nature of PsyCap, how it can be developed and what its potential benefits are, that this would enable principals and administrators to further equip teachers to fulfil their roles effectively.

Given the importance of school principals to the success of schools (Leithwood et al., 2008), the leadership of principals was chosen as an antecedent variable in this study. Specifically, the perceived level of authentic leadership displayed by principals was analysed due to the need for transparent principals in South African schools (Corruption Watch, 2016) and its previously shown association with PsyCap (Walumbwa et al., 2008). In addition, work engagement and workplace commitment were chosen as outcome variables as both constructs have been positively associated with positive work-related outcomes (Bakker & Bal, 2010; Meyer et al., 2002).

This chapter will provide a detailed analysis and discussion of the results found in this study in relation to relevant previous literature. The results of each hypothesis test in this study is discussed in detail and potential reasons provided as to why the results did or did not support the hypotheses. In addition, both the theoretical and practical implications of these results are discussed as well as the limitations related to this study. Recommendations for future research follow and a final conclusion ends the chapter.

Summary of results

Hypotheses 1 and 2. The first hypothesis posited that PsyCap was positively related to the work engagement of teachers. The results yielded a significant, moderately strong relationship and the strongest of all relationships tested in this study's hypotheses. This is consistent with previous literature (de Waal & Pienaar, 2013; Paek, Schuckert, Kim, & Lee, 2015; Simons & Buitendach, 2013). Du Plessis (2014) also found that PsyCap relates strongly with work engagement in a South African sample. Thus, this study confirms the finding that employees with higher levels of PsyCap are likely to be more engaged at work.

The results also showed that teachers in this study with higher levels of PsyCap are more likely to be more committed to both the school and to the teaching profession as hypothesised in 2a and 2b respectively. This finding study is consistent with previous findings

regarding the relationship between PsyCap and organisational commitment using the Meyer et al. (2002) conceptualisation (Pillay et al., 2014; Sahoo & Sia, 2015 Simons & Buitendach, 2013). However, this study used a different conceptualisation and measure of commitment by Klein et al. (2012; 2014). Thus, given the recent publication of Klein et al.'s (2014) commitment measure, there is no previous literature that has compared the relationship between PsyCap and Klein et al.'s conceptualisation of commitment. Thus, further research is needed to confirm this relationship.

Hypothesis 3. This hypothesis aimed to establish whether a positive relationship exists between perceived authentic leadership of school principals and the PsyCap of teachers. This hypothesis was formed based on the early conceptualisation of authentic leadership which was closely linked to PsyCap (Avolio et al., 2004) as well as prior empirical evidence which showed a positive relationship between authentic leadership and PsyCap (Rego et al., 2012; Woolley et al., 2010). Despite these previous findings, this hypothesis was not supported as there was a weak, insignificant relationship between these two constructs. This finding was also inconsistent with recent research among Taiwanese teachers which found a positive relationship between perceived authentic leadership of school principals and the PsyCap of teachers (Feng, 2016).

The results in this study suggest that the specific pattern of behaviour that characterise a leader displaying authenticity may actually not help to develop PsyCap among school teachers in South Africa. This indicates that other methods that directly address the development of PsyCap or potentially a different pattern of leadership behaviour is necessary to develop PsyCap among its followers. One pattern of leadership that could be used to develop PsyCap is transformational leadership. Gooty, Gavin, Johnson, Frazier and Snow (2009) showed a significant strong positive relationship (r = .91) between transformational leadership and PsyCap. Thus, it seems as if authentic leadership may not be enough to develop PsyCap in followers, but should rather be used in conjunction with a style of leadership such as transformational leadership in order to develop PsyCap. However, further empirical research would be needed to test this.

The only aspect of PsyCap that was significantly associated with perceived authentic leadership was hopeful-optimism. Intuitively, this is understandable as teachers that perceive their principals as authentic may seem to have a more positive outlook towards their roles as teachers and more hopeful of positive outcomes in their jobs. Another possible reason could be that if one is hopeful/optimistic, one may be more likely to see the good in others or perceive

their actions as noble or genuine. Consequently, this could lead to one perceiving one's principal as authentic. However, the relationship between perceived authentic leadership and hopeful-optimism was still weak in strength.

Hypotheses 4 and 5. These two hypotheses tested whether perceived authentic leadership related positively to work engagement and workplace commitment. Hypothesis 4 was supported in this study as the results showed that higher perceived authentic leadership is related to higher work engagement among school teachers in this study. It should be noted though that this relationship was a weak one. This is similar to the findings by Giallonardo, Wong and Iwasiw (2010). It is also consistent with the positive relationship between authentic leadership and work engagement as found in various other studies abroad (Alok & Israel, 2012; Hassan & Ahmed, 2011; Penger & Černe, 2014) and locally (Du Plessis, 2014). Thus, there is substantial evidence that the more followers perceive their leader to be authentic, the more work engagement they show. However, the weak strength of this relationship questions the practical significance of this finding.

Both hypothesis 5a and 5b were also supported in this study. Significant positive relationships were found between perceived authentic leadership and commitment to both the school and to the teaching profession. This is consistent with previous studies, particularly with respect to commitment to the organisation (Leroy et al., 2012). The leadership of the school principal therefore seems to influence teachers' commitment to the school more than teachers' commitment to the profession. However, both of these relationships were weak. This indicates that very little variance in workplace commitment can be attributed to variance in perceived authentic leadership which also implies that perceived authentic leadership is not an important antecedent of commitment to one's school or to teaching.

Hypotheses 6a-6c. Contrary to what was hypothesised, PsyCap did not mediate the relationship between perceived authentic leadership and any of the three outcome variables – work engagement and commitment to both the school and to teaching. One reason for this result is that perceived authentic leadership was not related to PsyCap as outlined earlier. This means that teachers' PsyCap levels varied regardless of how authentic they perceived their school principal to be. If a predictor variable does not predict the mediating variable, it logically holds that no mediation would be present. This suggests that the perceived authenticity of the principal was not an important antecedent for PsyCap, or for work engagement and commitment among school teachers in this study.

Additional findings. During the relatively limited time that PsyCap has been researched in the POB literature, there have been mixed results in terms of the factor structure it exhibits. There have also been mixed results specifically in a South African context. Therefore, exploratory factor analysis was conducted in order to draw out what the factor structure looks like in a sample of South African teachers. The theoretical factor structure consisted of four factors (confidence, hope, resilience and optimism) and empirical studies have supported this factor structure (Amunkete & Rothmann, 2015; Avey et al., 2008; Du Plessis, 2014; Görgens-Ekermans & Herbert, 2013; Luthans et al., 2007; Simons & Buitendach, 2013). In this study, PsyCap exhibited a three factor structure as opposed to a four-factor structure. Both confidence and resilience seemed to be well represented by the PCQ-24 measure, but hope and optimism seemed to hang together as a single factor and were therefore treated as such and labelled "hopeful-optimism" for this study.

Although this was different to its theoretical conceptualisation, there are some other studies that have also found results contrary to the four-factor model. An early conceptualisation of PsyCap consisted of only three factors: confidence, resilience and hope (Luthans, 2002). Furthermore, some empirical findings have challenged the four-factor conceptualisation. Cheung et al. (2011) found that the four-factor model was not a good fit, but could be represented by a single factor instead. Both Pillay et al. (2014) and De Waal and Pienaar (2013) also found that PsyCap is best represented by a single factor. Sahoo and Sia (2015) found that PsyCap exhibited a three-factor structure after removing problematic items during their factor analysis. Two South African studies also found that PsyCap exhibited a three-factor structure, but these studies differed in terms of which two factors merged into one factor. Du Plessis and Barkhuizen (2014) found that hope and confidence should be treated as one factor, while Bateman (2014) found that resilience and optimism merged onto one factor. Furthermore, although Luthans et al. (2007) found that a four factor model best fit the data using confirmatory factor analysis (CFA), a three-factor model in the same study, with hope and optimism merged as a single factor, was still a good fit. Thus, while the factor structure in this study did not meet the theoretical expectations, it is a similar finding to some other empirical studies.

The factor analysis process and the items in the PCQ-24 measure provide some insight into why the factor structure was not as hypothesised. Firstly, during factor analysis, the three reverse scored items loaded together onto one factor even though they did not all come from the same subscale. As such, they were removed from the scale in this study. Reverse scored

items are used to reduce response bias in a scale. However, the use of reverse-scored or negatively worded items in other psychological measures has been shown to be relatively ineffective in reducing response bias and has even led to contaminated responses due to participant confusion or lack of attention (Rodebaugh, Woods & Heimberg, 2007; van Sonderen, Sanderman, & Coyne, 2013). Furthermore, Bateman (2014) also removed two of the reverse scored items from the PCQ-24 scale as they reduced the reliability of the scale due to response bias. Görgens-Ekermans and Herbert (2013) also noted internal consistency problems with two of the reverse-coded items. Thus, these previous findings, along with the findings in the current study, suggest that the reverse-coded items are problematic in this scale and should potentially not be used in future.

The second possible reason for the three-factor structure is the origin of the scale and the wording of the items. This scale was developed in the United States with an American audience in mind. As such, some of the wording in the items could have potentially contained elements of cultural bias that may have skewed the results in a South African context. For example, one item used the phrase “at the end of every cloud, I see a silver lining”. This is an idiom that could have been misinterpreted by the participants in this study. As such, items with potential cultural bias in the PCQ-24 measure should be adjusted to make the measure suitable for a South African context.

Another possible reason for the three-factor model is the closeness in meaning between hope and optimism. Bryant and Cvengros (2004) found hope and optimism could be conceptualised as two separate constructs or as two factors of one superordinate construct. Participants in this study may have had difficulty differentiating between hope and optimism as separate constructs which led to their convergence into one construct. Given that English may not be a home language for some of the participants in this study due to the widespread prevalence of Afrikaans and isiXhosa in the Western Cape, differentiating between such seemingly similar constructs may have been a difficult task.

The results of this study also suggested that PsyCap exhibited a single, superordinate factor which is in line with previous theoretical and empirical studies using the PCQ-24. (De Waal & Pienaar, 2013; Luthans et al., 2007; Pillay et al., 2014). However, it should be noted that, Görgens-Ekermans and Herbert (2013) found that a multi-factor model was still superior to a single factor model and thus multi-dimensionality of the factor should not be ignored.

The overarching observation in to the PsyCap factor structure is that this construct as operationalised by the PCQ-24 measure has exhibited a variety of factor structures, particularly in the South African context. This study adds to this debate by suggesting that among a sample of South African teachers, a three-factor model with hopeful-optimism as a merged factor, is a possible way that this construct could be used in the teaching sector.

Two additional non-hypothesised findings were observed which provided useful insights. The first observation is related to the teachers' commitment levels, both to the school and to teaching. The teachers in this study, on average, exhibited high levels of commitment. Given that organisational and professional commitment are both negatively related to employees' intention to quit (Cooper, Stanley, Klein, & Tenhiälä, 2016), this is a positive finding for the schools in this study. In addition, the Klein et al. (2012) conceptualisation of commitment is characterised by a volitional bond, which suggests that this commitment is more than just about remaining in the organisation, but the teachers in this study actually have a bond, out of choice, with their profession, and to a slightly lesser extent, with their schools.

Another finding worth discussing is the apparent lack of influence of average annual school fees on the variables in this study. One may have expected that schools with greater financial resources would foster higher levels of PsyCap in teachers as they may have been more confident or hopefully-optimistic about their jobs. On the other hand, one would have also expected teachers from schools with less financial resources to have lower levels of PsyCap given that they are trying to achieve the same goal of educating their students, but are faced with more constraints. However, these results suggest that the school's financial resources do not seem to influence the PsyCap of teachers in that school. Thus, simply providing additional funding to a school is not likely to help develop PsyCap, work engagement or commitment among teachers.

Theoretical contributions and practical implications

The testing of the hypothesised model in this study provided an important theoretical contribution for the POB literature. Since its initial development, authentic leadership was closely linked to PsyCap and this relationship was then empirically supported (Rego et al., 2012; Woolley et al., 2010). However, the statistically and practically negligible relationship between these two constructs casts doubt on this theoretical link. While authentic leadership does indeed have its benefits for followers, this study suggests that the perception of a leader's authenticity does not necessarily lead to the development of PsyCap in followers. As such,

further researchers should not necessarily assume that this relationship is well established and should question the efficacy of authentic leadership in the development of PsyCap. This study contributed to the POB and education literature in a number of ways. The first contribution is that this study provided further insight into the factor structure of PsyCap, particularly among a South African sample. The empirical benefits of PsyCap make it an important construct within the POB field. Although effort was taken to carefully develop and empirically test this construct, particularly in an American setting, the South African studies involving PsyCap have not provided a consensus about its factor structure. In this study, the three-factor model was found to be the best model of PsyCap and highlighted the difficulty for South African participants to differentiate between hope and optimism as measured by the PCQ. This highlights the need for an amendment to the PCQ measure to account for any cultural biases as well as provides support for the argument that PsyCap should be treated as a three-factor construct in a South African setting (Bateman, 2014; Du Plessis & Barkhuizen, 2012).

The results in this study did not provide support for the hypothesised mediation model. Both the perceived authentic leadership of the principal and teachers' PsyCap predict work engagement and workplace commitment, but PsyCap does not mediate the relationship between perceived authentic leadership and the outcome variables. In addition, PsyCap seems to be a more important predictor of work engagement and workplace commitment than perceived authentic leadership which was a weak predictor of all of the variables in this study. Thus, it seems that authenticity is not relevant for developing PsyCap, work engagement or commitment among school teachers

This study also contributed to the South African literature on commitment by utilising Klein et al.'s (2012) commitment conceptualisation. Currently, no studies in the South African published literature on commitment have used this conceptualisation and few international studies have done so. This study showed that Klein et al.'s commitment measure worked well in a South African sample. Its good validity and reliability, coupled with its short length, make it a useful measure in survey-based research in which researchers may face survey length constraints due to participants having little time to complete surveys. As such, this study provided initial empirical support for the use the Klein et al. (2014) measure in South Africa that could help address some of the criticisms of previous commitment definitions as highlighted by Klein et al. (2012).

A number of practical implications also arose from the study results. The first practical implication relates to ways in which higher levels of work engagement and commitment can

be fostered among school teachers. It was hypothesised that the perceived authentic leadership of the principal was a key antecedent in developing these outcomes, mediated by PsyCap of teachers. As the relationship between authentic leadership and the outcome variables was weak, this pattern of leader behaviour, at least on its own, is actually not important in fostering these specific positive work outcomes. The transparency and internalised moral perspectives that characterise authentic principals may be needed to address the issues of corruption in South African schools (Corruption Watch, 2016), but this pattern of leadership is not likely to directly foster a more engaged and committed body of teachers.

The second practical implication is related to the importance of PsyCap for teachers and how it can be strengthened. The strongest relationships in this study were found between PsyCap, work engagement and commitment. This suggests that if principals or the Department of Education wish to strengthen teachers' levels of engagement and commitment, interventions that develop PsyCap may be valuable investments. This study showed that this is unlikely to be achieved by principals adopting an authentic pattern of leadership. Gooty et al. (2009) however, showed that transformational leadership is positively related to PsyCap and thus this pattern of leadership could be encouraged among school principals as a potential means to foster teacher PsyCap. In addition, Luthans, Avey, Avolio, Norman and Combs (2006) developed a training model that could be used to conduct micro-interventions for developing PsyCap among employees. This model consists of facilitated training workshops, goal setting exercises and reflection activities. Empirical research supports the effectiveness of this model (Luthans, Luthans, & Avey, 2014). Thus, an intervention based on this model could be piloted in local schools.

Another practical implication is related to the findings on workplace commitment in this study. Teachers in this study's sample exhibited stronger commitment to their profession as opposed to their schools. Although commitment to both targets was relatively high, to strengthen teacher commitment further, one should focus on commitment to the school rather than to the profession as there is more room for improvement. In addition PsyCap had a stronger relationship with commitment to the school than to teaching. Thus, strengthening PsyCap is more likely to assist one in strengthening commitment to the school rather than to the teaching profession.

Limitations

There were some limitations associated with this study that warrant a brief discussion. The first limitation was the use of a cross-sectional, correlational research approach. This approach was used due to time and cost constraints faced by the researcher, but meant that no longitudinal data could be examined which means that no long-term influences of authentic leadership and PsyCap could be determined. In addition, given that this study was based on self-report survey responses, participants may have responded differently if they were surveyed at a different time. However, this approach did allow for a higher number of participants as some school administrators were worried about the study taking time away from the teachers' work time and may have been less willing to participate in this study had it required a longer period of time from the participants.

Another limitation is the use of a non-probability sampling technique and the type of schools from which the teachers were sampled. Although, a probability sampling technique is preferred as it would have provided a more representative sample, non-probability techniques are often used in educational research (Fogelman & Comber, 2007). A further limitation in line with this is that teachers in this study were sampled from one education district within the Western Cape province of South Africa. The district chosen was a metro district and it was chosen due to its proximity and accessibility to the researcher. However, there are many schools in both the province and the rest of the country that exist in contexts that differ both socially and economically which may have yielded different results. The district used in this study did however include schools from a wide range of economic contexts within the metro area (as evidenced by the large range of school fees) which included schools in both wealthy and poor contexts and this study showed that financial resources did not relate to the variables investigated in this study.

The method used for obtaining permission to collect data also presents a potential limitation. In order to gain access to conducting research in each school, permission had to be granted from the school principal. Given that one dimension of authentic leadership is transparency, the principals that were willing to allow their teachers to participate may have been more authentic leaders than those who were not willing. As such, the variance in authentic leadership of the principals in this study may have been lower than in reality.

Recommendations for future research

There are also some recommendations that can be made for future research given the results of this study. The nature of the PsyCap construct is still up for debate, particularly in a South African context. While this study provided support for a three-factor structure with a single, superordinate factor, future research should be conducted to test this structure further. In particular, confirmatory factor analysis should be used to test the three-factor model among a different South African sample in order to determine whether this model is a good fit. Given the beneficial outcomes of PsyCap found in this study, understanding the nature of this construct is essential as this will help in the development of interventions to foster PsyCap in the workplace.

Future studies should also look to test the validity and reliability of the Klein et al. (2012; 2014) commitment conceptualisation and measure as was used in this study. Given that this conceptualisation has removed some of the confounding definitions of commitment and that the measure is relatively short, it provides a useful way to think of and analyse commitment. Further research should therefore be done in order to confirm the effectiveness of this scale in a South African sample.

Lastly, there is a plethora of research across different fields that highlight the many problems in the South African education system. While there is no quick fix for this system, this study joins a growing number of South African studies that have highlighted the benefits of PsyCap in the workplace. Consequently, there is a now a need to test practical interventions directly aimed at fostering PsyCap and future research within the field of PsyCap and particularly among schools, should be focused on interventions. This study attempted to highlight one possible avenue for developing PsyCap through authentic leadership. Given the lack of relevance of authentic leadership, different leadership patterns should be examined in future research. Moreover, direct PsyCap interventions such as training workshops need to be tested in order to determine how to foster this psychological resource for school teachers and provide one potential avenue for improving schools in South Africa. Researchers should endeavour to test the effect of these interventions using an experimental design so that causal relationships can be established.

Conclusion

This study established an in-depth analysis of the factor structure and relevance of PsyCap among school teachers in South Africa. The findings of this study provided further support for a 3-factor structure of PsyCap with a single superordinate factor. In addition, the relevance and importance of PsyCap was empirically established by showing its association with work engagement, commitment to the school and commitment to teaching. This has highlighted the need for the development of PsyCap among school teachers in order to harness these benefits in South African schools.

An attempt was also made in this study to determine whether the perceived authentic leadership of principals is a potential antecedent of PsyCap. This relationship was tested in order to determine a possible avenue to develop PsyCap among school teachers. The findings in this studied showed that while authentic leadership may still have other important outcomes, it is likely to be of little use in fostering PsyCap, work engagement and commitment to both the school and teaching among South African teachers.

Overall, this study was an attempt at providing insight into improving one aspect of the education system in South Africa. It was shown that there is an incentive to equip teachers with psychological resources such as PsyCap as it can have positive work-related outcomes regardless of the financial constraints the school faces. As such, this study has provided a deeper understanding of the nature and benefits of PsyCap and provided an impetus for further research to be conducted into the practical development of PsyCap as a means to develop engaged and committed teachers.

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Appendix A

Principals' Letter

Organisational Psychology Masters Programme Research Project

Dear Sir or Madam

As part of the UCT Organisational Psychology Masters Programme, I am conducting a research report around a relevant issue within the field of Organisational Psychology. As such, your school is invited to participate in this research which will involve teachers completing a provided questionnaire. The questionnaire consists of 70 questions related to their experiences as teachers. It will take approximately 25 minutes to complete and all information provided will be kept completely confidential.

The aim of this study is to understand the potential benefits of psychological resources (called psychological capital) for one's role as a teacher. This study also aims to understand how particular leadership that teachers experience relates to the level of psychological capital they possess. This study will also investigate the level of engagement teachers experience and their attitude towards their jobs.

There are no known risks when they participate in this study. I guarantee that all responses will remain confidential. The responses provided are **only** for the purposes of this study and they will **not** be used in any performance evaluation and the individual responses will **not** be shown to any principal. Teachers will not be required to provide their names for this study as it is completely anonymous. Participation in this study is completely voluntary and teachers are free to withdraw from the study at any point in time for any reason.

A lucky cash draw of R500 will be conducted as incentive for teachers to participate in this study. Entrance in the cash draw is also completely voluntary and teachers can still participate in the study without entering the cash draw. Cell phone/telephone numbers will be requested for those participants that elect to take part in the draw and will be used only for contacting the winner of the draw. In addition, a lucky draw of a R1000 stationery voucher will be conducted which will then be given to the school that wins the draw. Any school that has at least 30% of its teachers participate in the study will be eligible for the draw. This study and questionnaire has been approved by the Commerce Ethics Committee at the University of Cape Town. If you have any questions or concerns or would like further information regarding the results of the study, contact Stephen Price at the following email: prcste008@myuct.ac.za.

Teachers' Letter

Organisational Psychology Masters Programme Research Project

Dear Sir or Madam

As part of the UCT Organisational Psychology Masters Programme, I am conducting a research report around a relevant issue within the field of Organisational Psychology. As such, you are invited to fill in the attached questionnaire that will assist me in my research. The questionnaire consists of 70 questions related to your experiences as a teacher. It will take approximately 20 minutes to complete and all information provided will be kept completely confidential.

The aim of this study is to understand the potential benefits of psychological resources (called psychological capital) for your role as a teacher. This study also aims to understand how the leadership of your principal relates to the level of psychological capital you possess. This study will also investigate the level of engagement you experience and your attitude towards your job.

There are no known risks when you participate in this study. I guarantee that your responses will remain confidential. The responses you provide are **only** for the purposes of this study and they will **not** be used in any performance evaluation and your individual responses will **not** be shown to your principal. You will not be required to provide your name for this study as it is completely anonymous. Your participation in this study is completely voluntary and you are free to withdraw from the study at any point in time for any reason.

A lucky cash draw of R500 will be conducted as incentive to participate in this study. Entrance in the cash draw is also completely voluntary and you can still participate in the study without entering the cash draw. Cell phone/telephone numbers will be requested for those participants that elect to take part in the draw and will be used only for contacting the winner of the draw.

By completing and submitting this questionnaire, you are acknowledging that your participation in this study has been of your own free will. This study and questionnaire has been approved by the Commerce Ethics Committee at the University of Cape Town. If you have any questions or concerns or would like further information regarding the results of the study, contact Stephen Price at the following email: prcste008@myuct.ac.za.

WESTERN CAPE TEACHERS QUESTIONNAIRE

The following questionnaire will ask you questions about your own feelings related to your role as a teacher as well as questions about the leadership of your principal. There are no right or wrong answers and your answers will **not** be shown to your principal or used for performance evaluation purposes. Your responses will be kept completely confidential and you are not required to write your name at any point. Please ensure that you answer as honestly as possible. Upon finishing the questionnaire, please place it inside the envelope, seal it and place it inside the box provided.

Below are statements about you with which you may agree or disagree. State to what extent you agree or disagree with each statement by placing an "X" in the relevant space. Please see the example below. There are no right or wrong answers, just respond as honestly as possible.

	Strongly Disagree	**Disagree**	**Somewhat Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
I love my job					**X**	

Are you a permanent teacher at this school?

YES	**NO**

	Strongly Disagree	**Disagree**	**Somewhat Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
1.1 I feel confident analysing a long-term problem to find a solution.						
1.2 I feel confident in representing my work area in meetings with management.						
1.3 I feel confident contributing to discussions about the school's strategy.						
1.4 I feel confident helping to set targets/goals in my work area.						
1.5 I feel confident contacting people outside the school (e.g., suppliers, parents) to discuss problems.						

	Strongly Disagree	**Disagree**	**Somewhat Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
1.6 I feel confident presenting information to a group of colleagues.						
1.7 If I should find myself in a jam at work, I could think of many ways to get out of it.						
1.8 At the present time, I am energetically pursuing my work goals.						
1.9 There are lots of ways around any problem.						
1.10 Right now I see myself as being pretty successful at work.						
1.11 I can think of many ways to reach my current work goals.						
1.12 At this time, I am meeting the work goals that I have set for myself.						
1.13 When I have a setback at work, I have trouble recovering from it and moving on.						
1.14 I usually manage difficulties one way or another at work.						
1.15 I can be “on my own” so to speak at work if I have to.						
1.16 I usually take stressful things at work in stride.						
1.17 I can get through difficult times at work because I've experienced difficulty before.						
1.18 I feel I can handle many things at a time at this job.						
1.19 When things are uncertain for me at work I usually expect the best.						
1.20 If something can go wrong for me work-wise it will.						
1.21 I always look on the bright side of things regarding my job.						
1.22 I’m optimistic about what will happen to me in the future as it pertains to work.						
1.23 In this job, things never work out the way I want them to.						

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1.24 I approach this job as if "every cloud has a silver lining".						

2. The following statements relate to the principal at your current school.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
2.1 My principal clearly states what he/she means.					
2.2 My principal shows consistency between his/her beliefs and actions.					
2.3 My principal asks for ideas that challenge his/her core beliefs.					
2.4 My principal describes accurately the way that others view his/her abilities.					
2.5 My principal uses his/her core beliefs to make decisions.					
2.6 My principal carefully listens to alternative perspectives before reaching a conclusion.					
2.7 My principal shows that he/she understands his/her strengths and weaknesses.					
2.8 My principal openly shares information with others.					
2.9 My principal resists pressures on him/her to do things contrary to his/her beliefs.					
2.10 My principal objectively analyses relevant data before making a decision.					
2.11 My principal is clearly aware of the impact he/she has on others.					
2.12 My principal expresses his/her ideas and thoughts clearly to others.					
2.13 My principal is guided in his/her actions by internal moral standards.					
2.14 My principal encourages others to voice opposing points of view.					

3. The following statements are about how you feel at work. Please read each statement carefully and select the option that best describes how often you feel this way about your job.

	Never	**Almost Never**	**Rarely**	**Sometimes**	**Often**	**Very Often**	**Always**
3.1 At my work, I feel bursting with energy.							
3.2 I find the work that I do full of meaning and purpose.							
3.3 Time flies when I am working.							
3.4 At my job, I feel strong and vigorous.							
3.5 I am enthusiastic about my job.							
3.6 When I am working, I forget everything else around me.							
3.7 My job inspires me.							
3.8 When I get up in the morning, I feel like going to work.							
3.9 I feel happy when I am working intensely.							
3.10 I am proud of the work that I do.							
3.11 I am immersed in my work.							
3.12 I can continue working for very long periods at a time.							
3.13 To me, my job is challenging.							
3.14 I get carried away when I am working.							
3.15 At my job, I am very resilient, mentally.							
3.16 It is difficult to detach myself from my job.							
3.17 At my work, I always persevere, even when things do not go well.							

4. The following statements relate to your commitment to the school and the teaching profession.

	1 **Not at all**	**2** **Slightly**	**3** **Moderately**	**4** **Quite a bit**	**5** **Extremely**
4.1 How committed are you to your school?					
4.2 To what extent do you care about your school?					
4.3 How dedicated are you to your school?					
4.4 To what extent have you chosen to be committed to your school?					
4.5 How committed are you to teaching?					
4.6 To what extent do you care about teaching?					
4.7 How dedicated are you to teaching?					
4.8 To what extent have you chosen to be committed to teaching?					

Demographics

1. Age: _____

2. Gender: (place an "X" under the relevant option)

Male	Female	Other	Prefer not to answer

3. Race: (place an "X" under the relevant option)

African	Asian	Coloured	Indian	White	Other	Prefer not to answer

4. How many years have you been a teacher? _____

5. What type of school do you work at? (place an "X" at the relevant option)

- Primary School (Grade 0 – Grade 7) ☐
- High School (Grade 8 – Grade 12) ☐

6. How many years have you worked at your current school? _____

7. What is your **highest** level of qualification? (place an "X" under the relevant option)

Below Matric	Matric	Diploma	Bachelor's Degree	Postgraduate Degree

8. How many years have you worked with your current principal? _____

Please write a contact number in the space below if you would like to be added to the R500 cash draw. Please tear off this page and place it separately into the “completed surveys” box. This number will not be connected to your responses in any way and you will only be contacted if you are the winner of the draw.

Appendix B

Table B1

*Factor Loadings of 4-factor 24-item PCQ Scale using Principal Axis Factoring Forcing Extraction onto Four Factors**

Item Number	Fully Worded Item	Factor			
		Factor 1: Hopeful-Optimism Eigenvalue: 8.11 Explained Variance: 31.76%	Factor 2: Confidence Eigenvalue: 1.98 Explained Variance: 6.45%	Factor 3: Reverse-scored items Eigenvalue: 1.77 Explained Variance: 5.19%	Factor 4: Resilience Eigenvalue: 1.49 Explained Variance: 0.97%
8	At the present time, I am energetically pursuing my work goals.	.902			
21	I always look on the bright side of things regarding my job.	.840			
11	I can think of many ways to reach my current work goals.	.689			
10	Right now I see myself as being pretty successful at work.	.642			
22	I'm optimistic about what will happen to me in the future as it pertains to work.	.524			
12	At this time, I am meeting the work goals that I have set for myself.	.486			
24	I approach this job as if "every cloud has a silver lining".	.412			
9	There are lots of ways around any problem.	.387			
3	I feel confident contributing to discussions about the school's strategy.		.907		
2	I feel confident contributing to discussions about the school's strategy.		.872		
4	I feel confident helping to set targets/goals in my work area.		.759		
5	I feel confident contacting people outside the company (e.g., suppliers, parents) to discuss problems.		.575		
6	I feel confident presenting information to a group of colleagues.		.547		
1	I feel confident analysing a long-term problem to find a solution.		.523		
7	If I should find myself in a jam at work, I could think of many ways to get out of it.		.295		
20	If something can go wrong for me work-wise it will.			.749	
13	My principal is guided in his/her actions by internal moral standards.			.567	

23	In this job, things never work out the way I want them to.	.558	
17	I can get through difficult times at work because I've experienced difficulty before.		.676
16	I usually take stressful things at work in stride.		.648
15	I can be “on my own” so to speak at work if I have to.		.549
18	I feel I can handle many things at a time at this job.		.544
14	I usually manage difficulties one way or another at work.		.489
19	When things are uncertain for me at work I usually expect the best.		.282

*Rotation Method: Oblimin with Kaiser Normalization.

Table B2

*Factor Loadings of 4-factor 22-item PCQ Scale using Principal Axis Factoring Forcing Extraction onto Four Factors**

		Factor			
Item Number	Fully Worded Item	Factor 1: Hopeful-Optimism Eigenvalue: 7.61 Explained Variance: 32.44%	Factor 2: Confidence Eigenvalue: 1.94 Explained Variance: 6.98%	Factor 3: Reverse-scored items Eigenvalue: 1.73 Explained Variance: 5.56%	Factor 4: Resilience Eigenvalue: 1.48 Explained Variance: 4.44%
8	At the present time, I am energetically pursuing my work goals.	.900			
21	I always look on the bright side of things regarding my job.	.832			
11	I can think of many ways to reach my current work goals.	.696			
10	Right now I see myself as being pretty successful at work.	.647			
22	I'm optimistic about what will happen to me in the future as it pertains to work.	.516			
12	At this time, I am meeting the work goals that I have set for myself.	.489			
24	I approach this job as if "every cloud has a silver lining".	.408			
9	There are lots of ways around any problem.	.394			
3	I feel confident contributing to discussions about the school's strategy.		.902		
2	I feel confident contributing to discussions about the school's strategy.		.858		
4	I feel confident helping to set targets/goals in my work area.		.764		
5	I feel confident contacting people outside the company (e.g., suppliers, parents) to discuss problems.		.576		
6	I feel confident presenting information to a group of colleagues.		.530		
1	I feel confident analysing a long-term problem to find a solution.		.513		
7	If I should find myself in a jam at work, I could think of many ways to get out of it.		.295		
20	If something can go wrong for me work-wise it will.			.815	
13	My principal is guided in his/her actions by internal moral standards.			.548	
23	In this job, things never work out the way I want them to.			.533	
17	I can get through difficult times at work because I've experienced				.695

	difficulty before.	
16	I usually take stressful things at work in stride.	.673
15	I can be “on my own” so to speak at work if I have to.	.524
18	I feel I can handle many things at a time at this job.	.511
14	I usually manage difficulties one way or another at work.	.508

*Rotation Method: Oblimin with Kaiser Normalization.

Table B3

Factor Loadings of 17-item Utrecht Work Engagement Scale Using Principal Axis Factoring

Item Number	Fully Worded Item	Factor 1; Eigenvalue: 8.41 Explained Variance: 46.97%	Factor 2; Eigenvalue: 1.52 Explained Variance: 5.74%
5	I am enthusiastic about my job.	.979	
7	My job inspires me.	.858	
2	I find the work that I do full of meaning and purpose.	.815	
8	When I get up in the morning, I feel like going to work.	.810	
1	At my work, I feel bursting with energy.	.756	
4	At my job, I feel strong and vigorous.	.754	
10	I am proud of the work that I do.	.738	
9	I feel happy when I am working intensely.	.653	
3	Time flies when I am working.	.651	
11	I am immersed in my work.	.537	.321
12	I can continue working for very long periods at a time.	.492	.337
6	When I am working, I forget everything else around me.	.416	
13	To me, my job is challenging.		.609
16	It is difficult to detach myself from my job.		.603
14	I get carried away when I am working.		.579
15	At my job, I am very resilient, mentally.		.514
17	At my work, I always persevere, even when things do not go well.		.342

Extraction Method: Principal Axis Factoring.

Table B4

Factor Loadings for the 17-item Utrecht Work Engagement Scale using Principal Axis Factoring With Extraction Forced onto 3 Factors

Item Number	Fully Worded Item	Factor 1: Eigenvalue: 8.01 Explained Variance: 47.14%	Factor 2: Eigenvalue: 0.99 Explained Variance: 5.83%	Factor 3: Eigenvalue: 0.40 Explained Variance: 2.33%
5	I am enthusiastic about my job.	.856		
1	At my work, I feel bursting with energy.	.855		
4	At my job, I feel strong and vigorous.	.821		
2	I find the work that I do full of meaning and purpose.	.604		
7	My job inspires me.	.587		-.304
8	When I get up in the morning, I feel like going to work.	.551		
3	Time flies when I am working.	.542		
16	It is difficult to detach myself from my job.		.628	
13	To me, my job is challenging.		.596	
14	I get carried away when I am working.		.578	
15	At my job, I am very resilient, mentally.		.502	
17	At my work, I always persevere, even when things do not go well.		.352	
6	When I am working, I forget everything else around me.			
9	I feel happy when I am working intensely.			-.695
10	I am proud of the work that I do.			-.683
11	I am immersed in my work.			-.599
12	I can continue working for very long periods at a time.			-.529

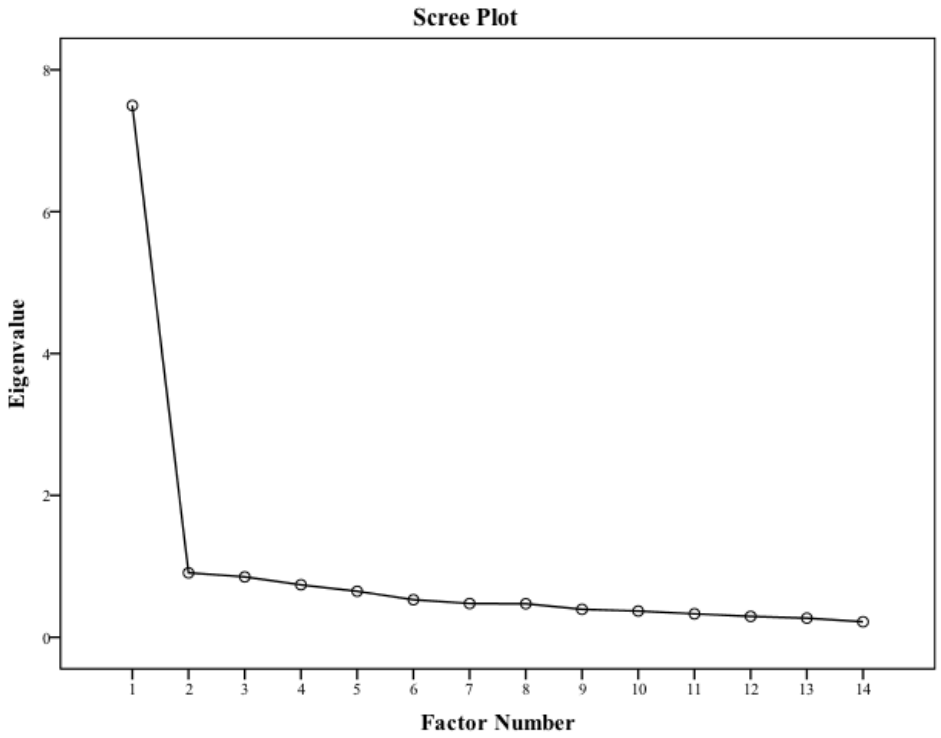

Figure B1: ALI principal axis factoring round scree plot

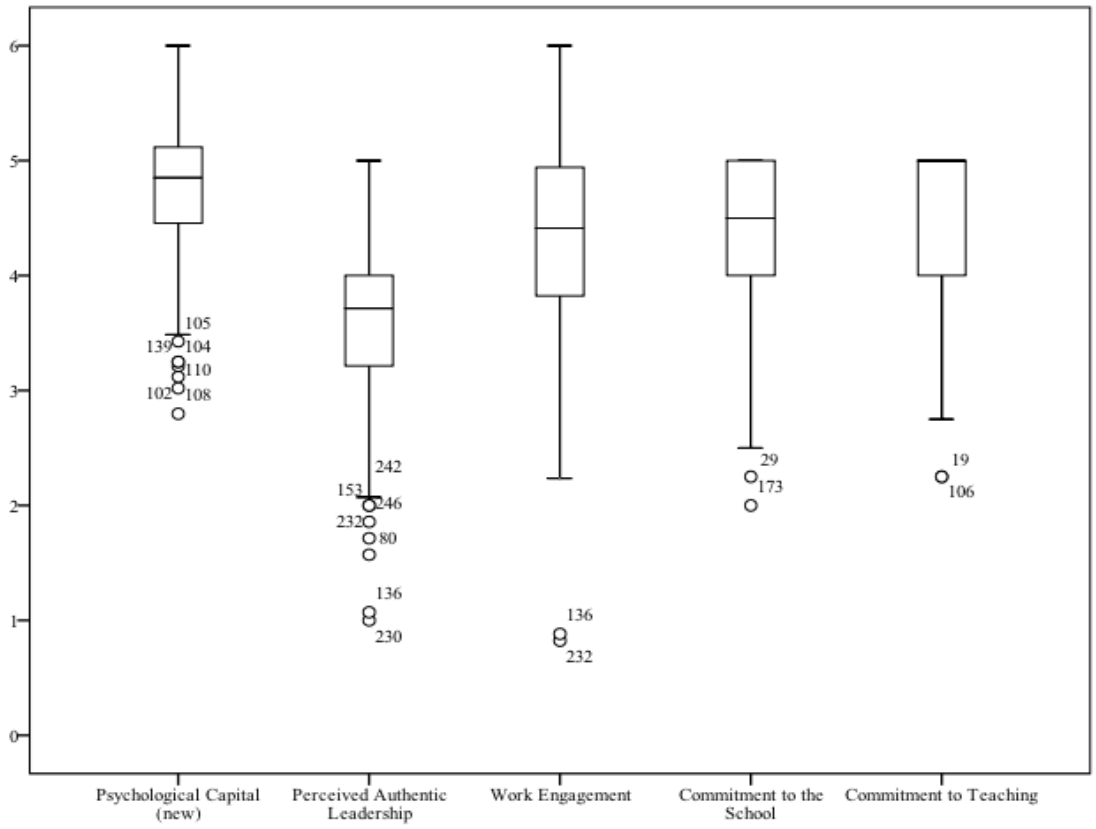

Figure B2: Box-and-whisker plots of summarized variables after extreme cases were

Table B5

Maximum Absolute Value of Standardised Residuals for Each Regression Model

Outcome Variable*	Absolute Value of Standardised Residual
Work Engagement	4.32
Commitment to the School	3.50
Commitment to Teaching	4.01

** Predictor variables: Perceived authentic leadership and PsyCap*

Appendix C

Directorate: Research

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REFERENCE: 20160614 – 1495
ENQUIRIES: Dr A T Wyngaard

Mr Stephen Price
22 Edinburgh Flats
17 Arthurs Road
Sea Point
8005

Dear Mr Stephen Price

RESEARCH PROPOSAL: PSYCHOLOGICAL CAPITAL AMONG SOUTH AFRICAN TEACHERS: EXAMINING POTENTIAL ANTECEDENTS AND OUTCOMES

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **18 July 2016 till 30 September 2016**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Research Services
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.
Signed: Dr Audrey T Wyngaard
Directorate: Research
DATE: 14 June 2016

UNIVERSITY OF CAPE TOWN
FACULTY OF COMMERCE
Igniting Knowledge and Opportunity

Ethics Approval Request for the Study entitled:

Signed by:

	Full name and signature	Date
Principal Researcher/Student:	Stephen Price Signed	10/06/2016

This application is approved by:

Supervisor	Ines Meyer Signed	10 June 2016
Co- Supervisor		

Please note: With this procedure it is not possible for the supervisor to see the actual ethics application unless the student shows it to the supervisor on a PC. This is what Steve did, but else I would have had to sign without knowing what I was signing.