Authentic leadership, trust and work engagement: The mediating role of psychological safety

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COMMENTS

The reader is reminded of the following:

- The references as well as the editorial style as prescribed by the Publication Manual (6th edition) of the American Psychological Association (APA) were followed in this mini-dissertation.
- The use of APA style in all scientific documents is in line with the policy, but in place for the Programme in Industrial Psychology of the North-West University as from January 1999.
- The mini-dissertation is submitted in the form of a research article.

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DECLARATION

I, Natasha Maximo, hereby declare that "Authentic leadership, trust and work engagement: The mediating role of psychology safety" is my own work and that the views and opinions expressed in this work are those of the author and relevant literature references as shown in the references.

I further declare that the content of this research will not be handed in for any other qualification at any other tertiary institution.

Natasha Maximo   **April 2015**

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SUMMARY

Title:

Authentic leadership, trust and work engagement: The mediating role of psychological safety.

Keywords:

Authentic leadership, trust in supervisor, work engagement, psychological safety.

The ever-changing global business environment of today is presenting organisations with numerous challenges and in some instances result in economic and ethical meltdowns. The mining industry, in particular, is faced with a volatile market and consequently mining companies are experiencing increasing financial turmoil coupled with human capital problems resulting in labour unrest and often inoperativeness. As these challenges gain momentum, the mining industry will need to respond through a restructure of operations. Although the mining industry has been faced with a need to restructure before, it has not been faced with this challenge recently. Therefore, only a small portion of management teams holds the skills to respond effectively. For the mining industry in South Africa to adequately address these challenges, leadership will play a pivotal role. Consequently, organisations need a new kind of business leader and leadership should be examined from an authentic perspective.

Authentic leadership has been associated with various positive outcomes such as trust in supervisor, psychological safety and work engagement. Both employees and organisations should support one another in order to remain viable. Trust is an important component of effective leadership and building relationships. In order for employees to feel secure and able to adapt to change, organisations should develop an environment which fosters trust and psychological safety and which, in turn, will lead to increased work engagement. The objectives of this study were to examine the relationship between authentic leadership, trust in supervisors, psychological safety and work engagement. In addition, another objective was to examine if trust in supervisor and psychological safety had an effect on the relationship between authentic leadership and work engagement.

An available sample of 244 employees was taken from the mining industry in the Free State province. The questionnaires were distributed to employees across all levels in a mining organisation. All of these employees were given the choice to participate in the research. The

measuring instruments utilised were the Authentic Leadership Questionnaire, Utrecht Work Engagement Scale, Workplace Trust Survey and Psychological Safety Questionnaire. Descriptive and inferential statistics, Raykov's rho coefficients, Pearson product-moment correlations coefficients, Mplus and bootstrapping were used to analyse the data. The results indicated that authentic leadership had a statistically significant positive relationship with trust in supervisor as well as psychological safety. Authentic leadership did not have a statistically significant positive relationship with work engagement. The results indicated that authentic leadership had a statistically significant indirect effect on work engagement via trust in supervisor. Authentic leadership did not have a statistically significant indirect effect on psychological safety via trust in supervisor. Furthermore, authentic leadership did not have a statistically significant indirect effect on work engagement via psychological safety.

Various recommendations were made for the mining industry as well as for future research. Organisations should understand the impact of authentic leadership on outcomes such as trust, psychological safety and work engagement. Organisations should select leaders who display the four dimensions of authentic leadership as well as implement structured leadership programmes or interventions. Recommendations for future research included utilising longitudinal research designs or diary studies as well as expanding the study to other organisations, industries, and provinces; also including additional sources of data over and above supervisors and subordinates. Future research may also employ a mixed method approach and include other related leadership constructs in the data collection.

CHAPTER 1

INTRODUCTION

The focus of this mini-dissertation is on authentic leadership, trust in supervisor, work engagement and psychological safety. This chapter contains the problem statement and the discussion of the research objectives (including the general and specific objectives). Furthermore, the research method is explained and the division of the chapters is given.

1.1   PROBLEM STATEMENT

Mining companies are continuously being challenged by a volatile market which has resulted in a string of serious challenges (Deloitte, 2014; PriceWaterhouseCoopers, 2013). In particular, the Chinese economy has slowed its ultra-high growth rates which threaten to put key commodities such as iron ore and coal into oversupply (Deloitte, 2014). In addition, the decline of the South African mining industry's share of global output is expected to continue, due to other key mining countries such as China and Australia experiencing faster growth rates within the industry (Business Monitor International, 2013). Adding to the pressure is the fact that the South African mining industry has among the lowest profit margins in the world, with wages representing between 50%-60% of a mining company's expenditure. Consequently, South Africa may be perceived as a less attractive investment destination for mining operations (Business Monitor International, 2013; PriceWaterhouseCoopers, 2013).

It is evident that cost pressures and constraints are placing tremendous strain on the mining industry (PriceWaterhouseCoopers, 2013). A positive outcome of cost constraints is that it often leads to innovation and the past 200 years have seen enormous expansion in the size of mining operations with bigger plants, bigger trucks and bigger blast furnaces. However, the mining industry and methodologies have not evolved much in this time and as a result it is time to make fundamental and dramatic changes (Deloitte, 2014).

As these changes gain momentum, it has become increasingly clear that they will present a massive shift within the industry. According to Deloitte (2014), this is not the first time that the mining industry has been challenged by the need to grossly restructure, but it is the first time in recent memory, which means that only a small portion of management teams holds the skills to respond effectively. Any company which fails to respond adequately may not only risk its profitability, but also its long-term survival (Deloitte, 2014). The daily operations of mines are adversely affected by the continual critical shortage of frontline and professional skills

within South Africa (Deloitte, 2013; PriceWaterhouseCoopers, 2013). As experienced personnel retire or leave the supply of experienced skills in frontline positions, such as supervisors, the workforce is placed under tremendous pressure (PriceWaterhouseCoopers, 2013). This has a direct effect on production output, quality and safety, whilst further increasing overhead costs (Deloitte, 2013). The mining industry is experiencing difficulty in attracting and retaining professional skills. While competing with other industries for professional talent, the mining industry is further disadvantaged due to the harsh conditions and remote locations of many mining operations (Deloitte, 2013; PriceWaterhouseCoopers, 2013).

Based on the above, it is evident that leadership and the way employees perceive their leadership will play a pivotal role in addressing the challenges facing the mining industry in South Africa. It is therefore imperative to examine leadership from an authentic perspective; the relationship between leaders and subordinates; and the effect of authentic leadership on subordinates within the organisation (Hassan & Ahmed, 2011). According to Robbins, Judge, Odendaal, and Roodt (2009), leadership is defined as an individual's capability to assist a group with achievement or meeting goals. Organisations require strong leadership and strong management to be effective (Robbins et al., 2009; Winston & Patterson, 2006). Presently it has been found that what is needed are leaders who challenge the status quo, who create a vision of the future and who motivate organisational members to want to achieve the vision (Avolio & Gardner, 2005; Robbins et al., 2009).

Executives are faced with the challenge of understanding the human capital capabilities required; also to implement structures that attract, develop and retain the required skills (Deloitte, 2013; Ernst & Young, 2014). The relentless pace of change, the uncertainty created by changing workforce dynamics and the increasing importance of social capital raise new concerns about the state of global moral and ethical standards in business (Levy & Bentley, 2007). Leaders have an undoubted obligation towards the organisation to demonstrate the highest moral standards and ethical demeanour (Hassan & Ahmed, 2011). This should be displayed in their everyday talk, actions and behaviours. As a result, they will set the moral and ethical standard for the rest of the organisation (Hassan & Ahmed, 2011; Levy & Bentley, 2007). In order for leadership to be effective and useful in the long run, it should be authentic (Hassan & Ahmed, 2011). An authentic approach to leadership has become important in both the research and practitioner domains.

Over the past few decades, leaders have been placed under pressure by economic, geo-political, and technological developments which have required them to be transparent, be aware of their values, and to guide organisations with a moral and ethical perspective (Clapp-Smith, Vogelgesang, & Avey, 2009). As a result, organisations are relying on research to determine how to select and develop leaders who will add a competitive advantage through improving the short-term bottom line, creating a long-term vision, and by leading with values which reflect those of the stakeholders (Clapp-Smith et al., 2009). Kefela (2012) proposes that leaders develop new approaches to enable them to face the challenges of a turbulent business environment in which to remain competitive (Probst, 2003). Leaders need to build a resilient organisation which will achieve stakeholders' expectations. They should encourage trusting relationships which translate into several positive outcomes such as a psychologically safe environment and work engagement (Hassan & Ahmed, 2011).

Authentic leadership can be defined as a form of behaviour which stems from and encourages positive psychological capabilities and a positive ethical climate; allowing for increased self-awareness, internalised morals, and balanced information processing and transparency among leaders and subordinates (Neider & Schriesheim, 2011; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). Authentic leaders demonstrate the highest degree of integrity, a deep sense of purpose and commitment to their core values (Hassan & Ahmed, 2011).

Authentic leadership is an ongoing process whereby leaders and subordinates gain self-awareness and establish open, trusting, genuine and transparent relationships with others (Luthans & Avolio, 2003). When subordinates acknowledge that a leader has the required skill to develop an organisation through competent decisions, they will be more confident of a fruitful and prosperous future (Spreitzer & Mishra, 2002). The following are the four core dimensions of authentic leadership as identified by Walumbwa et al. (2008):

Self-awareness. This component refers to the features of leaders, involving their self-awareness in values, identity, emotions, goals, and objectives, as well as to the consequences of their acts on subordinates (Gardner, Avolio, Luthans, May, & Walunbwa, 2005; Ilies, Frederick, & Nahrgang, 2005). Self-awareness illustrates both an individual's understanding of his or her ability to process information and attach meaning to events, and the way in which these affect his or her self-view (Neider & Schriesheim, 2011). Self-knowledge goes beyond the awareness of one's own thoughts, values and motives; it includes emotional awareness and the ability to process contradictory internal characteristics (Gardner et al., 2005; Ilies et al., 2005).

Balanced processing. This is the objective analyses of facts and data, both external and self-referential (Gardner et al., 2005). With balanced processing leaders do not distort, exaggerate, or ignore information (Valsania, Leon, Alonso, & Cantisano, 2012). They objectively analyse all the relevant data before making any decisions, which enables them to avoid bias in their perceptions due to self-defence, self-exaltation and self-protection (Kernis, 2003; Neider & Schriesheim, 2011).

Moral perspective. This refers to the internalised and integrated form of self-regulation (Neider & Schriesheim, 2011). The behaviour of authentic leaders rests on moral and ethical standards in the face of possible group, social, or organisational pressure (Ilies et al., 2005; Neider & Schriesheim, 2011). Authentic leadership results in ethical and transparent behaviours which are in the best interest of the common group, even though it may conflict with the personal interests of the leader (Ilies et al., 2005).

Relational transparency. Core to authentic leadership is the need to openly share information (Avolio & Gardner, 2005; Luthans & Avolio, 2003; Neider & Schriesheim, 2011). Maintaining relations with subordinates based on sincerity and honesty is one of the characteristics of relational transparency (Avolio & Gardner, 2005; Luthans & Avolio, 2003). Relational transparency involves self-disclosure, trust, intimacy and honesty with subordinates as well as the ability to communicate both positive and negative traits (Goldmen & Kernis, 2002).

Authentic leadership is a method that encompasses both positive psychological capabilities and a highly developed organisational context, which results in both greater self-awareness and self-regulated positive behaviours in leaders and subordinates, and furthermore fosters positive self-development (Luthans & Avolio 2003). According to Avolio, Gardner, Walumbwa, Luthans, and May (2004), authentic leaders are capable of enhancing the engagement and satisfaction of subordinates by strengthening their identification with the leader and the organisation, whilst promoting trust, optimism, hope and positive emotions (Avolio et al., 2004; Wong & Cummings, 2009). Authentic leaders are individuals who act in accordance with what they believe, while interacting in an open and transparent manner with others (Avolio et al., 2004).

An authentic leader who displays awareness, relational transparency, a moral or authentic perceptive, and a consistent and balanced method of weighing information and decision outcomes, is expected to create a trusting relationship with subordinates (Hassan & Ahmed, 2011). These behaviours illustrate accommodation, consideration, and communication (Clapp-

Smith et al., 2009). When authentic leaders adopt an ethical approach to decision making and engage in balanced processing rather than making hasty decisions, subordinates may be more willing to place trust in the leaders' future actions as subordinates will be able to use past experiences to predict future responses (Clapp-Smith et al., 2009). Subordinates believe that leaders are being true to themselves and display behaviour that is in accordance with their deeply held beliefs; these subordinates may experience psychological safety (Clapp-Smith et al., 2009; Eggers, 2011) and be willing to take a risk by offering further dedication to the management team (Clapp-Smith et al., 2009; Ilies et al., 2005). When a climate of trust in management is fostered, each individual subordinate will notice others' loyalty and in response will accordingly increase his or her own loyalty (Clapp-Smith et al., 2009).

When subordinates observe leader authenticity, they tend to experience greater levels of trust and develop their own capacity for authenticity and engagement in their work (Avolio et al., 2004; Clapp-Smith et al., 2009). Increased levels of trust are expected to contribute to increased levels of growth and sustainable performance (Nugent & Abolafia, 2006). It is suggested that subordinates' perception of authentic leaders will positively enhance their trust in management and will subsequently result in positive change (Luthans & Avolio, 2003).

Mayer, Davis, and Schoorman (1995) defined trust as "the willingness of a party to be vulnerable to the actions of another party, based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party" (p. 712). Trust is a mutual expression of confidence between parties where neither will be harmed or put at risk (Jones & George, 1998). Through trust, integrity, shared values and beliefs are demonstrated to subordinates, providing subordinates with recognition and reward for meeting expectations (Eggers, 2011). For trust to exist, a relationship should be transparent and vulnerable. When individuals display their vulnerability without knowing the outcome, trust will flourish as trust between a leader and a subordinate is reciprocal (Eggers, 2011). When an individual displays both transparency and vulnerability, his or her actions are seen as open and forthcoming (Eggers, 2011; Wong & Cummings, 2009). Furthermore, research on interpersonal trust between supervisors and subordinates has identified a significant positive effect on psychological safety (Kahn, 1990).

Kahn (1990) defined psychological safety as "feeling able to show and employ one's self without fear of negative consequences to self-image, status or career" (p. 703). Through psychological safety, subordinates have the confidence to provide input without retaliation and

judgment from others. Psychological safety creates an environment where taking risks is rewarded and may result in better learning as this environment will allow individuals to lower their defences and increase their creativity (Edmondson, 1999; Eggers, 2011). Psychological safety creates a platform for individuals to view occasions of failure as opportunities to learn (Carmeli & Gittell, 2009; Edmondson, 1999).

Leaders create trust in their team. Trust - among leaders, subordinates and team members - is a requirement of psychological safety (Eggers, 2011). Through transparency, a leader can create an environment of psychological safety. This will create trust in the leader as well as an increased participation in decision making by the individual (Roussin & Webber, 2011). As a result, psychological safety may increase work engagement. According to Rothmann and Rothmann (2010), psychological safety may result in increased work engagement as it echoes an individual's belief of being able to engage without any fear of negative consequences. An unsafe environment which displays elements of ambiguity, unpredictability and threating conditions may result in the disengagement of an individual; the individual becoming cautious of expressing his or her creativity within the work environment (Rothmann & Rothmann, 2010).

Work engagement can be defined as a rewarding and positive attitude towards work which includes vigour, dedication and absorption (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002). The following are the three core dimensions of work engagement, as identified by Schaufeli et al. (2002):

Vigour. This is an abundance of energy, resilience, a willingness to invest effort in the job, the ability to not easily experience fatigue, and persistence when confronted with difficulties.

Dedication. This is a strong involvement in work, inspiration, enthusiasm, and a sense of pride.

Absorption. This is the ability to not detach from the job, while experiencing a pleasant state of being where one is immersed in the work and where time passes quickly.

Individuals who are highly engaged will identify personally with their jobs and are motivated by the work itself. Such individuals tend to work harder and are more productive and likely to produce the results their customers and organisations expect (Ariani, 2013; Rothmann & Jordan, 2006). Through employee engagement, employees increase the occurrence of behaviours that promote efficient and effective functioning of the organisation (Ariani, 2013).

Based on the review of literature, the research model is graphically depicted in Figure 1. The aim of the study was to examine the relationship between authentic leadership, trust in supervisors, psychological safety and work engagement in the mining industry of South Africa. In addition, the study aimed to examine whether trust in supervisors and psychological safety mediate the relationship between authentic leadership and work engagement. It was hypothesised that authentic leadership positively contributes to trust in supervisors, psychological safety and work engagement.

Figure 1. A structural model of the relationship between authentic leadership, trust in supervisors, psychological safety and work engagement.

The following research questions emerged from the above-mentioned problem statement:

- How are authentic leadership, trust in supervisors, psychological safety and work engagement conceptualised in literature?
- What is the relationship between authentic leadership, trust in supervisors, psychological safety and work engagement?
- Does authentic leadership have an indirect effect on psychological safety through trust in supervisor?
- Does authentic leadership have an indirect effect on work engagement through trust in supervisor?

- Does authentic leadership have an indirect effect on work engagement through psychological safety?

In order to answer the above research questions, the following research objectives have been set.

1.2 RESEARCH OBJECTIVES

The research objectives are divided into general and specific objectives.

1.2.1 General Objective

The general objective of this study was to investigate the relationship between employees' perceptions of authentic leadership, trust in supervisors, psychological safety and work engagement in a mining company in South Africa.

1.2.2 Specific Objectives

The specific objectives of this research were to:

- Conceptualise the constructs and relationship between authentic leadership, trust in supervisors, psychological safety and work engagement from literature.
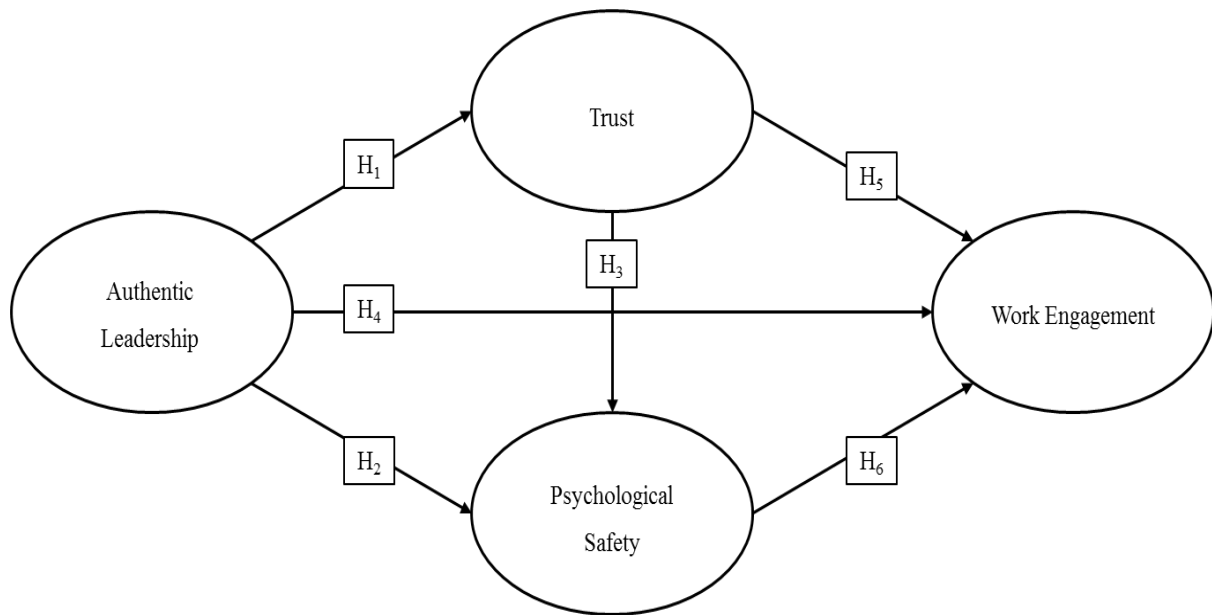- Investigate the relationship between authentic leadership, trust in supervisors, psychological safety and work engagement according to literature.
- Determine the intervening effects of authentic leadership on psychological safety through trust in supervisor.
- Determine the intervening effects of authentic leadership on work engagement through trust in supervisor.
- Determine the intervening effects of authentic leadership on work engagement through psychological safety.

1.3 RESEARCH METHOD

The research method consisted of two phases, namely a literature review and an empirical study. The results obtained from the research are presented in the form of a research article.

1.3.1   Research Design

This study followed a quantitative approach. According to Struwig and Stead (2001), research that is quantitative in nature is a form of conclusive research involving large representative samples and structured data collection procedures. A cross-sectional research approach was utilised. According to De Vos, Strydom, Fouché, and Delport (2005), a cross-sectional design refers to the data that is collected at one single point in time and is most useful for describing differences in a population at that particular moment.   This study constituted descriptive research. Primary data collection was performed and data was analysed by means of a correlational approach.

1.3.2   Participants and Procedure

For the purpose of this study, availability sampling in which the researcher makes use of available subjects was used. This sampling technique was used due to its accessibility. An availability sample of employees from a South African-based coal mining company was selected (N = 244). The sample was selected from various departments in the Free State province, representing different genders, ages, racial groups and marital statuses.

Permission to conduct the research was obtained from the management of the organisation. A letter requesting participation and a consent form were attached to the hardcopy questionnaires which were distributed in envelopes to the various divisional managers. The letter clarified the objectives and importance of the study. The divisional managers were requested to dispense the envelopes amongst their subordinates. It took approximately 30 minutes to complete the questionnaires and the participants were permitted two weeks to complete the questionnaires. The participants and the divisional managers received two reminders via email regarding the deadline for completion of the questionnaires; the first reminder was sent after the first week and the second reminder was sent a few days before the deadline. The questionnaires were placed in a secure box at the Human Resource office. After the specified time frame, the data collection process ended and data analyses commenced. The information obtained via the research was used for research purposes only and responses were only reported in aggregated form. Participation in the study was voluntary, anonymous and participants could have refused to participate without consequence.

1.3.3 Measuring Instruments

The following questionnaires were used in the empirical study:

Biographical Questionnaire: A biographical questionnaire was used to determine the biographical characteristics of the research participants in order to provide a detailed description of the study population. These characteristics included age, gender, home language, level of education, department, level within the department, and years working at the organisation.

Authentic Leadership: The Authentic Leadership Questionnaire was developed by Neider and Schriesheim (2011), based on the original work of Walumbwa, Avolio, Gardner, Wernsing, and Peterson (2008). This scale was utilised to measure the components of authentic leadership. The instrument comprised 16 items and was scored on a five-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). The scale measured the four dimensions of authentic leadership behaviours, namely self-awareness (4 items), balanced processing (4 items), moral perspective (4 items) and relational transparency (4 items). Examples of items are: "My leader describes accurately the way that others view his/her abilities" (self-awareness), "My leader asks for ideas that challenge his/her beliefs" (balanced processing), "My leader uses his/her core beliefs to make decisions" (moral perspective) and "My leader admits mistakes when they occur" (relational transparency). The internal consistency of the measures ranged from a Cronbach alpha of 0.74 to 0.85 (Neider & Schriesheim, 2011).

Work Engagement: The Utrecht Work Engagement Scale was developed by Schaufeli and Bakker (2004). This scale was utilised to measure participants' work engagement. The instrument consisted of nine items and was scored on a six-point Likert scale ranging from 1 (*never*) to 6 (*always*). The scale measured the three dimensions of work engagement, namely vigour (3 items), dedication (3 items) and absorption (3 items). Examples of items are: "At my job, I feel strong and vigorous" (vigour), "I find the work I do full of meaning and purpose" (dedication), and "When I am working, I forget everything else around me" (absorption). The internal consistency of the measures ranged from a Cronbach alpha of 0.75 to 0.87 (Schaufeli & Bakker, 2004).

Trust: Workplace Trust Survey was developed by Ferres (2001). This scale was utilised to measure the levels of trust in supervisors. The original instrument consisted of 36 items, but for the purpose of this study only trust in the immediate supervisor was utilised. The adapted

instrument consisted of 9 items and was scored on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example of an item is "I feel that my manager listens to what I have to say". The internal consistency of the measures ranged from a Cronbach alpha of 0.74 to 0.87 (Ferres, 2001).

Psychological Safety: Psychological Safety Questionnaire was developed by Edmondson (1999). This scale was utilised to measure the participants' level of psychological safety. The instrument consisted of six items and was scored on a five-point Likert scale ranging from 1 (*strongly disagree)* to 5 (*strongly agree)*. An example of an item is "Members of the team were able to discuss problems and tough issues openly". The internal consistency of the measures ranged from a Cronbach alpha coefficient of 0.76 to 0.80 (Edmondson, 1999).

1.3.4   Statistical Analyses

The Mplus 7 statistical program (Muthén & Muthén, 1998-2012) was utilised to perform the statistical analysis. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics (e.g. correlations) were employed for data analysis. Confirmatory factor analysis (CFA) was used to test the factorial validity of the measuring instruments (Muthén & Muthén, 1998-2012). Raykov's rho coefficients were employed to assess the reliability of the measuring instruments. Pearson product-moment correlation coefficients were employed to measure the proposed relationships between the study variables. To determine the practical significance of the results, effect sizes were employed (Cohen, 1988). A cut-off point of 0.30 (medium effect) and 0.50 (large effect) was set for the practical significance of the correlation coefficients (Cohen, 1988). A value of 95% ($p \leq 0.05$) was set for the confidence interval level for statistical significance.

Structural equation modelling (SEM) methods, as implemented by Mplus, were used to test the measurement and structural models. The following indexes produced by Mplus were used in this study: The Chi-square statistic ($\chi2$) which is the absolute fit of the model, the Comparative Fit Index (CFI), the Standardised Root-Mean Residual (SRMR) and the Root-Means-Square Error of Approximation (RMSEA). Acceptable fit of the model was indicated by non-significant ($\chi2$) values, values larger than or equal to 0.90 for GFI and CFI, and RMSEA values smaller than or equal to 0.08 (Byrne, 2010). The Akaike Information Criterion (AIC) and Bayes Information Criterion (BIC) were used. The AIC, which is a comparative measurement fit, is meaningful when different models are estimated. The lowest AIC is the best fitting model. The BIC provides an indication of model parsimony (Kline, 2010).

The bootstrapping method was used in this study in order to test mediation. The method was set at 5000 draws (Hayes, 2009). The confidence level was set at 95%. When zero is not in the 95% confidence level, one can conclude that the indirect effect is significantly different from zero at $p < .05$.

1.3.5 Ethical Consideration

This research study was directed by the following ethical considerations, namely obtaining informed consent from participants in an introductory letter accompanying the questionnaires and explaining that participation is voluntary, ensuring anonymity and confidentiality. The information obtained via the research was used for research purposes only. Due care was taken to ensure that no harm was caused to participants and that participants' rights and dignity were respected. The research proposal was submitted to the North-West University's ethical committee for review [NWU-00142-14-S8].

1.4 OVERVIEW OF CHAPTERS

In Chapter 2, an empirical study was conducted according to the objectives set out in Chapter 1. Chapter 3 provides the conclusion as well as limitations and recommendations of the study.

1.5 CHAPTER SUMMARY

This chapter provided a discussion of the problem statement and research objectives. Furthermore, the research method and the measuring instruments were explained, followed by a brief overview of the chapters that follow.

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CHAPTER 2

RESEARCH ARTICLE

Authentic leadership, trust and work engagement: The mediating role of psychological safety

ABSTRACT

Orientation: The construct of authentic leadership has been researched internationally; however, limited research has been done on this construct within the South African context. Furthermore, limited research exists on the relationship between authentic leadership, trust in supervisor, psychological safety and work engagement.

Research purpose: The aim of the study was to determine possible relationships and indirect effects between authentic leadership, trust and work engagement as well as the mediating role of psychological safety.

Motivation for the study: It is clear from the literature that trust in supervisor and psychological safety mediate the relationship between authentic leadership and work engagement. Authentic leadership positively contributes to trust in supervisor, psychological safety and work engagement.

Research design, approach and method: A cross-sectional survey design was used with an available sample ($N = 244$) taken of employees from a mining company within South Africa. The Authentic Leadership Questionnaire, Trust in Supervisor Questionnaire, Work Engagement Scale and Psychological Safety Questionnaire were administered.

Main findings: Authentic leadership is positively related to trust in supervisor and psychological safety. Authentic leadership did not have an indirect effect on psychological safety via trust in supervisor. Authentic leadership is partially related to work engagement. Authentic leadership has an indirect effect on work engagement via trust in supervisor. Authentic leadership did not have an indirect effect on work engagement via psychological safety.

Practical/managerial findings: The results provide supervisors with insight into the impact of authentic leadership on trust in supervisor, psychological safety and work engagement. As supervisors play a key role in promoting work engagement, the results also provide supervisors with insight into the importance of authentic leadership for the development of increased trust in supervisor, psychological safety and work engagement.

Contribution/value-added: The study contributes to authentic leadership literature, specifically within the South African context. Furthermore, the study contributes to literature by indicating the indirect effects of authentic leadership on work engagement via trust in supervisor and psychological safety.

Keywords: authentic leadership, trust in supervisor, work engagement and psychological safety

INTRODUCTION

Organisations are facing numerous challenges and problems as the global business environment of today is continuously changing, and as a result many organisations are experiencing economic and ethical meltdowns (Deloitte, 2014; Ernst & Young, 2014; George, Sims, McLean, & Mayer, 2007; PriceWaterhouseCoopers, 2013; Roux, 2010). With these challenges, the need for a new kind of business leader in organisations has become pivotal (Deloitte, 2014; Ernst & Young, 2014; George et al., 2007; PriceWaterhouseCoopers, 2013; Roux, 2010). It is vital that leaders display integrity, strong values and purpose as well as the ability to develop enduring organisations through the motivation of subordinates (George, 2003). Integrity and authenticity are widely regarded as highly important societal values and are an important component of effective leadership in order to promote a humane organisation which achieves enduring outcomes (George et al., 2007; Kouzes & Posner, 2002; Wang, 2010). The topic of authentic leadership has become more prominent in recent years in both practical and academic fields (Avolio, Gardner, Walumbwa, Luthans, & May, 2004; George, 2003; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). This is due to authentic leadership being recognised as a core construct of positive leadership that is inextricably linked to resolving organisational and societal problems (George, 2003; Roux, 2010).

Previous studies have indicated that authentic leadership may have a positive effect on psychological safety (Eggers, 2011), trust in supervisor (Caldwell & Dixon, 2010) and work engagement (Rego, Sousa, Marques, & Cunha, 2012; Walumbwa et al., 2008; Walumbwa, Wang, Wang, Schaubroeck, & Avolio, 2010). In order to be an effective leader, it is paramount for a leader to earn a subordinate's trust. Trust is an essential component of forming cooperative relationships (Perry & Mankin, 2004; Wang & Hsieh, 2013). Trust in leaders may result in several positive work outcomes such as psychological safety and work engagement (Eggers, 2011). According to Hunt and Aldrich (1998), it is proposed that the influence on subordinate trust from direct supervisors is much greater than from CEOs.

In order for subordinates to feel secure and able to adapt to change, organisations need to create an environment of psychological safety (Miniotaite, 2012). According to Edmondson (2004), psychological safety is established in group relationships through mutual respect and trust among group members. Miniotaite (2012) distinguished between psychological safety at an individual level and at group level. A subordinate may experience psychological safety at an individual level through the relationship with the supervisor after trust has been established

(Miniotaite, 2012). When psychological safety exists, the subordinate is able to see instances of failure as an opportunity to learn, to lower his or her defences and increase his or her creativity (Eggers, 2011). As a result, psychological safety may lead to increased team work behaviours and team performance as well as increased employee work engagement (Rothmann & Rothmann, 2010; Roussin, 2008).

Work engagement is an employee's involvement in his or her work as well as satisfaction with and enthusiasm for his or her work (Harter, Schmidt, & Hayes, 2002). A subordinate will experience an increase in work engagement when he or she feels that he or she is being treated sincerely and is being supported (Wang & Hsieh, 2013).

The aim of the study was to examine the relationship between employees' perceptions of authentic leadership, trust in supervisors, psychological safety and work engagement. In addition, the study aimed to examine if trust in supervisors and psychological safety had an indirect effect on the relationship between authentic leadership and work engagement.

LITERATURE REVIEW

Authentic Leadership

Since the conceptualisation in the late 1970s, authentic leadership has become a core component in positive leadership studies. The theoretical extension into leadership theory became a "root construct in leadership theory" (Avolio & Gardner, 2005, p. 315). Authentic leadership is considered to be a "root construct" that underlies the positive aspects of ethical leadership, and spiritual, charismatic and transformational theories (Neider & Schriesheim, 2011). According to Gardner, Avolio, Luthans, May, and Walumbwa (2005) as well as Avolio and Luthans (2006), authentic leadership can be described as the process whereby leaders are aware of their thoughts and behaviours within the context in which they operate, with others also perceiving them to be aware of leader and subordinate values, moral perspectives, strengths and knowledge. Authentic leadership has also been described through a life story approach for the development of authentic leaders (Gardner, Claudia, Davis, & Dickens, 2011; Shamir & Eilam, 2005).

The word 'authentic' is defined in the dictionary as "original", "genuine", and "not fake". This definition was used to identify four defining characteristics of authentic leaders (Gardner et al., 2011; Shamir & Eilam, 2005). Firstly, authentic leaders express their true selves in leadership and do not fake their leadership. Secondly, authentic leaders use their principles to lead towards

a value-based mission. Thirdly, authentic leaders are original and do not copy the leadership of others. Lastly, authentic leaders display consistency in their actions as they use their values and principles in decision making (Gardner et al., 2005; Shamir & Eilam, 2005).

Authentic leaders are mindful of both their own personal authenticity as well as the manner in which they allow subordinates to achieve common goals and objectives (Clapp-Smith, Vogelgesang, & Avey, 2009). Recent studies suggest that authentic leadership is a "higher-order, multidimensional construct, comprised of self-awareness, balanced processing, the internalisation of moral and ethical perspectives and relational transparency" (Walumbwa et al., 2008, p. 89). Self-awareness refers to leaders' knowledge of themselves, their mental state and their perceived image of themselves (Gardner et al., 2005; Neider & Schriesheim, 2011). Balanced processing refers to a leader's ability to consider and analyse all relevant facts objectively before making a decision (Gardner et al., 2005; Neider & Schriesheim, 2011). Moral perspective is when leaders rely on their own morals, values and standards to drive their actions without any influence from external pressures (Gardner et al., 2005; Neider & Schriesheim, 2011). Relational transparency is when leaders express their true thoughts and motives, whilst openly sharing information (Gardner et al., 2005; Neider & Schriesheim, 2011).

Authenticity can be described as the ability of being true to oneself over and above others (Avolio & Gardner, 2005; Wong & Cummings, 2009). However, authentic leadership diverts the attention towards a leader's relationship with subordinates (Avolio & Gardner, 2005; Wong & Cummings, 2009). A fair number of leadership theories emphasise a leader's behaviours and characteristics; however, very few leadership theories emphasise the relationship between leaders and subordinates (Northouse, 2004; Wong & Cummings, 2009). Even though authentic leadership has a significant focus on the relational transparency and self-awareness of leaders, it also has a focus on personal and social identification (Northhouse, 2004; Wong & Cummings, 2009). Authentic leadership views personal and social identification as processes through which the behaviour of a leader results in self-awareness among the leaders and subordinates (Wong & Cummings, 2009).

A positive moral perspective is an important component of authentic leadership. Leaders need to engage in ethical and transparent decision making; therefore, authentic leaders utilise their own moral capacity and resilience to tackle ethical dilemmas and make moral decisions. Authentic leadership has recently received increased attention due to the changes in social, political and business environments which now require genuine and moral attributes in leaders

(Sarros & Cooper, 2006; Storr, 2004). These changes represent a move away from visionary and charismatic leadership towards a more sustainable character and integrity- driven leadership (Sarros & Cooper, 2006; Storr, 2004). Recent research has indicated the importance of an ethical climate in healthy work environments. An ethical climate is a component of an organisational climate which provides a reference framework for the way in which individuals view their work environment and behave within it (Olson, 1998; Wong & Cummings, 2009).

Hart (2005) defined an ethical climate as "the organisational conditions and practices that affect the way difficult problems, with ethical implications, are discussed and decided" (p. 174). The way in which subordinates view their workplace may determine whether or not ethical issues are raised; the manner in which ethical issues are discussed; and the nature of decisions made (Hart, 2005; Olson, 1998; Storch, Rodney, Pauly, Brown, & Starzomski, 2002).

Authentic leadership focuses on individual strengths and the development of wellness, rather than on the weaknesses and vulnerability of an individual (Wong & Cummings, 2009). Thereby also incorporating hope, trust, positive emotions and optimism as mediators through which authentic leaders influence their subordinates' attitudes such as work engagement (Wong & Cummings, 2009).

Leaders should be cognisant of the effect of their actions on others as well as be open and transparent. They should also be aware of the internal and external influences and processes of an organisation (Clapp-Smith et al., 2009). Through this, subordinates will be able to gain a deeper understanding and identify with the organisational goals and challenges (Clapp-Smith et al., 2009). When subordinates perceive their supervisors to possess the necessary skills and abilities to facilitate growth and productivity within the organisation through competent decision making, it leads to an increased assurance within subordinates of a better and more profitable future in the organisation (Hassen & Ahmed, 2011). This may result in an increase in work engagement as subordinates gain a sense of trust in the capabilities and competence of their supervisors (Hassen & Ahmed, 2011).

In addition, due to the high moral standards, integrity, and honesty displayed by authentic leaders, subordinates may develop positive expectations as well as increased levels of trust and willingness to cooperate with leaders to the benefit of the organisation (Avolio et al., 2004; Wang & Hsieh, 2013). This is further evidenced by Caldwell and Dixon (2010), who found that authentic leaders influenced individuals at various levels in an organisation. Authentic leaders have a significant impact on both their subordinates and the organisations which they

lead. Authentic leadership results in numerous positive outcomes such as subordinates' intrinsic motivation, self-esteem, creativity as well as trust, work engagement and well-being.

Trust in Supervisor

Greater trust in leaders is required to address the many challenges faced by organisations; however, trust continues to remain at a very low level in organisations (Gallup, 2012; Rosenthal, 2012). In order to address these challenges, leadership that impacts the entire organisation in a positive manner is required. In order to achieve such leadership, loyalty, commitment and the willingness to take risks are required from the members of the organisation. This in turn is dependent upon leaders who instil extensive trust within their subordinates. It is not only trust in leadership that is required, but also reciprocal trust among all members of the organisation (Mishra & Mishra, 2013).

According to Mayer, Davis, and Schoorman (1995), trust in a leader will have an effect on subordinates' work attitudes, behaviours and outcomes. Behaviours and characteristics of a leader that lead to trust are integrity, fairness, honesty, dependability and the willingness to accept vulnerability (Mayer et al., 1995). Trust can be defined as the disposition of an individual to be vulnerable to the actions of another, while believing that the other will conduct a specific action important to the trustor - with good intentions - and regardless of the trustor's ability to control or oversee the other (Clapp-Smith et al., 2009; Mayer et al., 1995; Roussin, 2008; Salamon & Robinson, 2008; Yang & Mossholder, 2010). Trust is inextricably linked to risk taking, as the action of being vulnerable to another is a risk taken by the trustee (Mayer et al., 1995). Therefore, trust is the willingness to take a risk (Mayer et al., 1995). Trust is the willing exchange of actions between individuals. This exchange is able to take place as the trustor believes that exploitation is unlikely and as a result is willing to display trust behaviours and to risk vulnerability (Eggers, 2011; Ferres, 2001). Trust does not only stem from the trustworthiness of another, but also from the willingness of the trustor to act, based on those judgments (Eggers, 2011; Ferres, 2001).

The intentions and actions of an individual, group or institution must be confidently perceived, whilst the expectation of ethical treatment should also be present for trust to exist (Eggers, 2011; Ferres, 2001; Mishra & Mishra, 2013). In order for trust to exist within a leader-follower relationship, it is necessary for a subordinate to observe the following characteristics within a leader: Open communication, cooperation, willingness to sacrifice, confidence and predictability (Clapp-Smith et al, 1995; Mayer et al., 1995). As a result, unbiased processing,

and moral and ethical perspectives can be expected to nurture trust within a leader-follower relationship (Miniotaite, 2012).

Leaders can develop collaborative relationships, build credibility and gain the respect of subordinates when they act authentically through their personal values and beliefs; thereby building trusting relationships with subordinates (Avolio et al., 2004). A subordinate's trust stems from judgments of authenticity which are based on consistent leader actions (Shamir & Eilam, 2005). Research suggests that when a subordinate is met with fair and positive treatment, he or she is more likely to display positive attitudes and commitment to a leader (Dirks & Ferrin, 2001; Rhoades, Eisenberger, & Armeli, 2001).

It is suggested that trust is an important mediator between leadership constructs such as authentic leadership and follower outcomes such as psychological safety and work engagement (Clapp-Smith et al., 2009). The following hypothesis can be formulated with regard to the relationship between authentic leadership and trust:

Hypothesis 1: Authentic leadership is positively related to trust in supervisor.

Psychological Safety

Psychological safety and trust both involve vulnerability or the perception of risk through choices which seek to minimise negative consequences, resulting in potentially positive outcomes in the work environment (Edmondson, 2004). Psychological safety is conceptualised within an individual's view of the risks and consequences associated with his or her work environment; stemming from a subconscious conviction of how others will respond when an individual finds him/herself in a particular situation (Edmondson, 2004; Roussin, 2008). Psychological safety creates confidence in an individual that others will accept and not reprimand the individual for his or her actions (Edmondson, 1999). The difference between psychological safety and trust stems from choice. The trustor's conscious decisions to trust an individual cannot be a choice to feel psychologically safe, but can be a choice to place his or her trust in someone (Edmondson, 2004; Kramer, 1999). Psychological safety is defined as an individual's perception of the consequences of taking an interpersonal risk in his or her job environment, without the fear of negative consequences to his or her image, status or career (Kahn, 1990).

The relationship between a supervisor and subordinate has a direct influence on the feeling of safety that the subordinate experiences within the work environment (Edmondson, 1999).

When a supervisor supports rather than control the subordinate, the subordinate will experience a sense of safety. Such supervisors display concern for their subordinates' feelings and needs, providing them with positive feedback which not only enables them to develop new skills, but also encourages them to put forward their opinions without any fear of negative consequences (Edmondson, 1999; Roussin & Webber, 2011).

Psychological safety may be developed through reassuring and trusting interpersonal relationships between employees (Kahn, 1990). Interpersonal trust may display two different components; the first being cognitive-based trust which is related to the reliability and dependability of others, while the second is affective trust which is impacted by the emotional relationships between individuals (McAllister, 1995). Psychological safety requires interpersonal trust among leaders, subordinates and team members (Eggers, 2011). A vital component of trust is that subordinates have confidence in predicting supervisor behaviours. If subordinates have trust in their supervisors, they will experience reduced uncertainty in the workplace. This is the primary source of psychological safety; therefore, trust in supervisors is intrinsic to developing psychological safety in subordinates (Ning Li & Hoon Tan, 2012).

Williams (2007) describes three interpersonal risks in the workplace, namely harm resulting from opportunism; identity damage as a result of social interactions; and neglect of an individual's interest by others. As a result of these interpersonal risks, subordinates are often reluctant to express themselves unless they are reassured that there is a low risk of unpleasantness (Detert & Burris, 2007). Trust in supervisors mitigates interpersonal risks in the workplace and consequently leads to increased psychological safety (Ning Li & Hoon Tan, 2012).

Research suggests that psychological safety may result in work engagement as psychological safety reflects upon the belief that an individual can engage him/herself without any fear of negative consequences (Edmondson, 1999; Eggers, 2011; Roussin & Webber, 2011). Where a work environment displays ambiguity, unpredictability and is threatening, the opposite would result as subordinates would perceive the environment as being unsafe. Subordinates working in such unsafe work environments may disengage from their work and may be reluctant to attempt new things (May, Gilson, & Harter, 2004).

Leaders utilise their own self-awareness as well as the self-awareness of their subordinates to lead. Leaders motivate by inspiration, displaying charisma towards their subordinates and by being intellectually stimulating and considerate of individuality (Eggers, 2011). Through this,

leaders assist their subordinates in developing leadership skills by helping them become more aware of their own feelings, behaviours and thoughts. Leaders and subordinates must be aware of one another's expectations, needs and wants. This leads to positive change in an organisation through developing psychological safety. Psychological safety and trust will lead to transparency, positive self-awareness, positive moral perspective and a willingness to continually learn (Eggers, 2011). The following hypotheses can be formulated with regard to the relationship between authentic leadership, psychological safety and trust in supervisor:

Hypothesis 2: Authentic leadership is positively related to psychological safety.

Hypothesis 3: Authentic leadership indirectly affects psychological safety through trust in supervisor.

Work Engagement

Work engagement is defined as the "harnessing of organisational members' selves to their work roles: In engagement, people employ and express themselves physically, cognitively, emotionally and mentally during role performances" (Kahn, 1990, p. 694). Bakker, Schaufeli, Leiter, and Taris (2008) describe work engagement as "a positive, fulfilling and effective motivational state of work-related well-being that is characterised by vigour, dedication and absorption" (p. 187). Vigour refers to increased levels of energy and mental resilience at work. Dedication refers to an individual's involvement and fulfilment in his or her work. Absorption refers to an individual's happiness and concentration at work which allows time to pass quickly (Schaufeli, Salanova, Gonzales-Roma, & Bakker, 2002).

Engaged employees are energetic and experience a feeling of enthusiasm for their work and as a result are completely absorbed by their work to the extent that time flies while working (Bakker et al., 2008; Bakker & Demerouti, 2008). The development, enhancement and improvement of work engagement levels in the workforce have become critical for organisational success (Harter et al., 2002). Research suggests that work engagement has a positive impact on business-, financial- and in-role performance, employee productivity and organisational success (Demerouti & Bakker, 2006; Harris, 2006; Harter et al., 2002; Lockwood, 2007; Richman, 2006).

Research suggests that leadership is an important factor which positively contributes to employee work engagement (Harter et al., 2002). Authentic leaders have been described as leading by example, as they lead through their values and strive for truthful relationships

(Gardner et al., 2005; Kernis, 2003). Leading by example illustrates ones commitment to work and provides guidance to subordinates (Bandura, 1977); allowing subordinates to remain emotionally and physically connected as well as cognitively vigilant in their work roles. Through this work engagement, levels are expected to increase (Bandura, 1977; Walumbwa et al., 2010). The following hypothesis can be formulated with regard to the relationship between authentic leadership and work engagement:

Hypothesis 4: Authentic leadership is positively related to work engagement.

Authentic Leadership, Work Engagement and Trust in Supervisors

A key element of leadership effectiveness is trust in supervisors (Bass, 1990). According to Dirks and Ferrin (2002), trust in supervisors is linked to numerous organisational outcomes, such as high satisfaction with leaders and low employee turnover. Their research indicated that trust in supervisors has a mediating effect between the leader's actions and attitudinal variables such as job satisfaction.

When subordinates perceive their supervisors as being trustworthy, it will positively affect their psychological well-being. As a result, these subordinates will experience higher levels of work engagement (Wang & Hsieh, 2013). Furthermore, a subordinate's desire to voluntarily return authenticity is increased when the subordinate perceives his or her supervisor to have authenticity. This in turn creates an environment of trust and dependency which enables subordinates to be engaged and fully immersed in their work (Wang & Hsieh, 2013). Therefore, trust and employees' attitudes are inextricably linked and a mediating relationship may exist. Thus, the following hypothesis is proposed:

Hypothesis 5: Authentic leadership affects work engagement indirectly through trust in supervisor.

Authentic Leadership, Work Engagement and Psychological Safety

Authentic leaders' behaviour stems from their own values and such leaders are driven to display truthfulness and openness in relationships (Gardner et al., 2005; Kernis, 2003). These leaders can be said to lead by example through the demonstration of transparent decision making (Avolio & Gardner, 2005). Supervisors' commitment to their work is displayed when leading by example. This provides subordinates with guidance to become cognitively vigilant as well as emotionally and physically connected with their work performance (Bandura, 1977).

According to the research of Kahn (1990), leaders have an influence on the levels of work engagement displayed by subordinates. Specifically, he found that an environment which encouraged psychological safety resulted in increased work engagement. In a psychological safe environment, an individual feels accepted and supported as well as able to provide input without any fear of negative consequences (Kahn, 1990). Thus, the following hypothesis is proposed:

Hypothesis 6: Authentic leadership affects work engagement indirectly through psychological safety.

RESEARCH DESIGN

Research Approach

A cross-sectional survey design was used which refers to the data being collected at one single point in time and is most useful for describing differences in a population at that particular moment (De Vos, Strydom, Fouche, & Delport, 2005). A cross- sectional design normally involves different individuals that researchers examine by using one or more variables, which made this design suitable for this study (Salkind, 2009).

Research Participants

The participants were employees from a South African-based coal mining company. Availability sampling in which the researcher made use of available subjects was used. This sampling technique was used due to its accessibility. A total of 300 questionnaires were distributed, of which 244 were returned (response rate = 81.33%). The personal characteristics of the sample are provided below in Table 1.

Table 1

Personal Characteristics of the Participants (N = 244)

Item	Category	Frequency	Percentage (%)
Gender	Male	212	86.90
	Female	32	13.10
Cultural group	African	133	54.50
	White	104	42.60
	Coloured	4	1.60
	Indian	2	0.80
	Other	1	0.40
Age	18-25 years	24	9.80
	26-35 years	78	32.00
	36-45 years	73	29.90
	46-55 years	52	21.30
	56-65 years	16	6.60
	Missing values	1	0.40
Language	English	23	9.40
	Afrikaans	87	35.70
	Setswana	11	4.50
	isiXhosa	18	7.40
	Xitsonga	5	2.00
	isiZulu	17	7.00
	Sesotho	71	29.10
	isiNdebele	1	0.40
	Tshivenda	1	0.40
	SiSwati	3	1.20
	Sepedi	5	2.00
	Other	2	0.80

As can be seen in Table 1, the majority of the participants were male (86.90%), while more than half of the participants were African (54.50%), with 42.60% being White. The majority of the participants were in the 26-35 (32.00%) years age group, followed by the 36-45 (29.90%) years age group. The majority of participants were Afrikaans speaking (35.70%), with 29.10% being Sesotho.

The professional characteristics of the participants are provided in Table 2 below.

Table 2

Professional Characteristics of the Participants (N = 244)

Item	Category	Frequency	Percentage (%)
Qualifications	Up to Grade 11	41	16.80
	Grade 12	123	50.40
	NQF 4	23	9.40
	Diploma	34	13.90
	Degree	11	4.50
	Postgrad degree+	12	4.90
Department	Engineering	119	48.80
	Technical	22	9.00
	Operations	58	23.80
	Finance	4	1.60
	Human Resources	13	5.30
	Other	28	11.50
Level	B1 – B5	36	14.80
	C1 – C4	180	73.80
	D1 – D4	26	10.70
	E1 – E2	2	0.80
Years of service	1-5 years	70	28.70
	6-10 years	68	27.90
	11-15 years	43	17.60
	16-20 years	22	9.00
	21-25 years	14	5.70
	26+ years	26	10.70
	Missing values	1	0.40

As can be seen in Table 2, the majority of the participants had Grade 12 (50.40%) as highest qualification, while 16.80% had qualifications of up to Grade 11. Of the participants, 48.80% were employed in the engineering department and a further 23.80% were employed in the operations department. A total of 73.80% of the participants were employed at the C1-C4 level and 14.80% at the B1-B5 level. A large number of the participants had 1-5 years of service (28.70%) and 27.90% had 6-10 years of service.

Measuring Instruments

The following measuring instruments were used in the empirical study:

Biographical Questionnaire. A *biographical questionnaire* was used to determine the biographical characteristics of the research participants in order to provide a detailed description of the study population. These characteristics included age, gender, home language, level of education, department and level within the department.

Authentic Leadership. Authentic leadership was measured by the *Authentic Leadership Inventory* (ALI; Neider & Schriesheim, 2011)*,* which is based on the original work of Walumbwa, Avolio, Gardner, Wernsing, and Peterson (2008). The instrument consisted of 16 items and was scored on a five-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). The scale measured the four dimensions of authentic leadership behaviours, namely self-awareness (4 items), balanced processing (4 items), moral perspective (4 items) and relational transparency (4 items). Examples of an item are: "My leader describes accurately the way that others view his/her abilities" (self-awareness), "My leader asks for ideas that challenge his/her beliefs" (balanced processing), "My leader uses his/her core beliefs to make decisions" (moral perspective), and "My leader admits mistakes when they occur" (relational transparency). The internal consistency of the measures ranged from a Cronbach alpha of 0.74 to 0.85 (Neider & Schriesheim).

Work Engagement. Work engagement was measured by the *Utrecht Work Engagement Scale* (UWES; Schaufeli & Bakker, 2004). The instrument comprised nine items and was scored on a six-point Likert scale ranging from 1 (*never*) to 6 (*always*). The scale measured the three dimensions of work engagement, namely vigour (3 items), dedication (3 items) and absorption (3 items). Examples of an item are: "At my job, I feel strong and vigorous" (vigour), "I find the work I do full of meaning and purpose" (dedication), and "When I am working, I forget everything else around me" (absorption). The internal consistency of the measures ranged from a Cronbach alpha of 0.75 to 0.87 (Schaufeli & Bakker, 2004).

Trust. Trust was measured by the *Workplace Trust Survey* (WTS; Ferres, 2001). The original instrument comprised 36 items; for the purpose of this study only trust in the immediate supervisor was utilised. The adapted instrument consisted of 9 items and was scored on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example of an item is "I feel that my manager listens to what I have to say" (trust in supervisor). The internal consistency of the measure ranged from a Cronbach alpha of 0.74 to 0.87 (Ferres, 2001).

Psychological Safety. Psychological safety was measured by the *Psychological Safety Questionnaire* (PSQ; Edmondson, 1999). The instrument comprised six items and was scored on a five-point Likert scale ranging from 1 (*strongly disagree)* to 5 (*strongly agree)*. The scale measured one dimension of psychological safety. Examples of an item are: "Members of the team were able to discuss problems and tough issues openly", and "Members of the team

accepted each other's differences". The internal consistency of the measure ranged from a Cronbach alpha coefficient of 0.76 to 0.80 (Edmondson, 1999).

Research Procedure

The research project was assessed and accepted by the Ethics Committee of the North-West University [NWU-00142-14-S8] and permission to conduct the research was obtained from the management of the organisation. The researcher provided the participants with a consent form stating the importance and objectives of the study. The information obtained via the research was used for research purposes only and the responses were only reported in aggregated form. Participation in the project was voluntary, anonymous and participants had the right to refuse to participate without consequence.

Statistical Analysis

The Mplus 7 statistical program (Muthén & Muthén, 1998-2012) was utilised to perform the statistical analysis. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics (e.g. correlations) were employed for data analysis. Confirmatory factor analysis (CFA) was used to test the factorial validity of the measuring instruments (Muthén & Muthén, 1998-2012). Raykov's rho coefficients were employed to assess the reliability of the measuring instruments. Pearson product-moment correlation coefficients were employed to measure the proposed relationships between the study variables. To determine the practical significance of the results, effect sizes were employed (Cohen, 1988). A cut-off point of 0.30 (medium effect) and 0.50 (large effect) was set for the practical significance of the correlation coefficients (Cohen, 1988). A value of 95% ($p \leq 0.05$) was set for the confidence interval level for statistical significance.

Structural equation modelling (SEM) methods, as implemented by Mplus, were used to test the measurement and structural models. The following indexes produced by Mplus were used in this study: The Chi-square statistic ($\chi 2$) which is the absolute fit of the model, the Comparative Fit Index (CFI), the Standardised Root-Mean Residual (SRMR) and the Root-Means-Square Error of Approximation (RMSEA). Acceptable fit of the model was indicated by non-significant ($\chi 2$) values, values larger than or equal to 0.90 for GFI and CFI, and RMSEA values smaller than or equal to 0.08 (Byrne, 2010). The Akaike Information Criterion (AIC) and Bayes Information Criterion (BIC) were used. The AIC, which is a comparative measurement fit, is

meaningful when different models are estimated. The lowest AIC is the best fitting model. The BIC provides an indication of model parsimony (Kline, 2010).

The bootstrapping method was used in this study in order to test mediation. The method was set at 5000 draws (Hayes, 2009). The confidence level was set at 95%. When zero is not in the 95% confidence level, one can conclude that the indirect effect is significantly different from zero at $p < .05$.

RESULTS

First, the results of the competing measurement models are reported. Second, the results of the alternative structural models are reported.

Testing Measurement Model

Confirmatory factor analysis (CFA) with Mplus (Muthén & Muthén, 1998-2012) was used to estimate the distinctness of the assessed variables. A four-factor measurement model and three alternative models were tested to assess possible correctional relationships between the latent variables.

Model 1 consisted of four first-order latent variables, namely authentic leadership (measured by thirteen observed variables), work engagement (measured by eight observed variables), trust in supervisor (measured by eight observed variables), and psychological safety (measured by three observed variables). All the latent variables were allowed to correlate.

Model 2 consisted of three first-order latent variables, namely authentic leadership (measured by thirteen observed variables), trust in supervisor (measured by eight observed variables) and psychological safety (measured by three observed variables) as well as a second-order latent variable consisting of vigour combined with dedication (measured by six observed variables) and absorption (measured by two observed variables).

Model 3 consisted of three first-order latent variables, namely work engagement (measured by eight observed variables), trust in supervisor (measured by eight observed variables), and psychological safety (measured by three observed variables) as well as a second-order latent variable of authentic leadership, consisting of self-awareness (measured by three observed variables), relational transparency (measured by three observed variables), balance processing (measured by four observed variables), and moral perspective (measured by three observed variables).

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Model 4 consisted of seven first-order latent variables, namely self-awareness (measured by three observed variables), relational transparency (measured by three observed variables), balanced processing (measured by four observed variables), moral perspective (measured by three observed variables), work engagement (measured by eight observed variables), trust in supervisor (measured by eight observed variables) and psychological safety (measured by three observed variables).

Table 3 presents the fit statistics for the four competing measurement models described above.

Table 3

Fit Statistics of Competing Measurement Models

Model	χ^2	*Df*	TLI	CFI	RMSEA	SRMR	AIC	BIC
Model 1	636.23	455	0.95	0.95	0.04	0.05	21133.18	21500.38
Model 2	672.34	454	0.94	0.94	0.04	0.05	21181.19	21551.80
Model 3	647.49	452	0.94	0.95	0.04	0.05	21153.76	21531.45
Model 4	625.40	441	0.95	0.95	0.04	0.05	21147.75	21563.91

Note: χ^2 = Chi-square; *df* = degrees of freedom; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root-Mean-Square Error of Approximation; SRMR = Standardized Root-Mean Square Residual; AIC = Akaike Information Criterion; BIC = Bayes Information Criterion.

Further analyses were conducted in an exploratory mode to improve the fit of the selected model. Fit of the model could be improved by allowing the errors of the items to correlate. According to Byrne (2010), correlated errors could be representative of the respondent's characteristics that reflect bias and social desirability as well as a high degree of overlap in the item content. The revised model (Model 1) indicated that the fit improved once the errors were allowed to correlate.

Three items that measured authentic leadership were removed, namely *"My leader clearly states what he/she means"*, *"My leader admits mistakes when they occur"*, and *"My leader uses his/her core beliefs to make decisions"*. One item that measured work engagement was removed, namely *"I get carried away when I'm working"*. Three items that measure psychological safety were removed, namely *"If you make a mistake, it is often held against you"*, *"Working in this team, my unique skills and talents are valued and utilised"* and *"It is safe to take risks when working in this team"*. One item that measured trust in supervisor was removed, namely *"I proceed on the basis that my manager will act in good faith"*.

Comparison of the AIC and BIC values indicated that model 1 fitted the data better. A χ^2 of 636.23 was obtained for the initial measurement model. The fit indices for CFI and TLI were acceptable (>0.90), as well as the model fit for the RMSEA (<0.05). The SRMR for Model 1 was 0.05; values lower than 0.08 indicate an acceptable fit between the model and the data.

Testing the Structural Model

The descriptive statistics and Raykov's rho coefficients of the measuring instruments, as well as product-moment correlation coefficients between the constructs are reported in Table 4.

Table 4

Descriptive Statistics, Raykov's rho Coefficients and Correlation Coefficients of the Scales

Item	*M*	*SD*	ρ	1	2	3	4
1. Authentic Leadership	3.47	0.77	0.94	-	-	-	-
2. Work Engagement	4.44	1.14	0.92	0.49[+*]	-	-	-
3. Psychological Safety	3.33	0.65	0.78	0.45[+*]	0.37[+*]	-	-
4. Trust in Supervisor	4.97	1.39	0.94	0.74[+**]	0.52[+**]	0.39[+*]	-

[+] Correlation is practically significant $r \geq 0.30$ (medium effect) [++] Correlation is practically significant $r \geq 0.50$ (large effect) [*] Statistically significant ($p \leq 0.05$) [**] Statistically significant ($p \leq 0.01$)

As per the results in Table 4, it is evident that the Raykov's rho coefficients of all the measuring instruments were considered acceptable, ranging from 0.70 to 0.97 (Wang & Wang, 2012). Raykov's rho coefficients have the same acceptable cut-off points as Cronbach alpha coefficients, recognising values of ≥ 0.70 as acceptable (Nunnally & Bernstein, 1994). Furthermore, Table 4 provides the correlation coefficients of the study variables. Authentic leadership was practically and significantly related to work engagement and psychological safety (medium effect). Authentic leadership was practically and significantly related to trust in supervisor (large effect). Work engagement was practically and significantly related to psychological safety (medium effect). Work engagement was practically and significantly related to trust in supervisor (large effect). Trust in supervisor was practically and significantly related to psychological safety (medium effect).

The measurement model formed the basis of the structural model. The hypothesised relationships shown in the model were tested. An acceptable fit of the model to the data was

found: $\chi^2 = 636.23$, $df = 455$, CFI = 0.95, TLI = 0.95, SRMR = 0.05 and RMSEA = 0.04. Table 5 shows the fit statistics and path coefficients of the three models.

Table 5

Initial Framework Fit Indices and Standardised Path Coefficients

Measures		Indirect effects (Model 1)	Direct effects (Model 2)	Direct and indirect effects (Model 3)
Fit indices	χ^2	679.88	790.34	636.23
	Df	458	458	455
	CFI	0.94	0.91	0.95
	TLI	0.94	0.91	0.95
	RMSEA	0.05	0.06	0.04
	SRMR	0.12	0.23	0.05
	AIC	21183.68	21327.21	21133.18
	BIC	21540.40	21683.92	21500.38
Direct effects on Work Engagement	Authentic Leadership	-	0.21	0.16
	Psychological Safety	0.43**	0.15	0.17
	Supervisor Trust	-	0.37**	0.34**
Direct effects on Psychological Safety	Authentic Leadership	-	-	0.36**
	Supervisor Trust	0.46**	-	0.13
Direct effects on Trust in Supervisor	Authentic Leadership	0.74**	-	0.74**

** p<0.01

In the above calculations, the MLR estimator was utilised, taking into account the skewness and kurtosis of frequencies. The chi-square values for MLR cannot be directly compared (Satorra & Bentler, 2010). Chi-square difference testing had to be done to determine how the chi-square would change between the different models. Table 6 below shows the difference testing for competing structural models. The results in Table 6 indicated that both Models 1 and 2 had a significant p-value which suggests a significantly worse fit than Model 3. Therefore, Model 3 was the best fitting model.

Table 6

Difference Testing for Competing Structural Models

Model	$\Delta\chi^2$	Δdf	*p-value*
Model 1	47.14	3	<0.0001**
Model 2	185.79	3	<0.0001**

*p<.05;**p<.01

Figure 2 below shows the path coefficients estimated by Mplus 7 (Muthén & Muthén, 1998-2012) for Model 3.
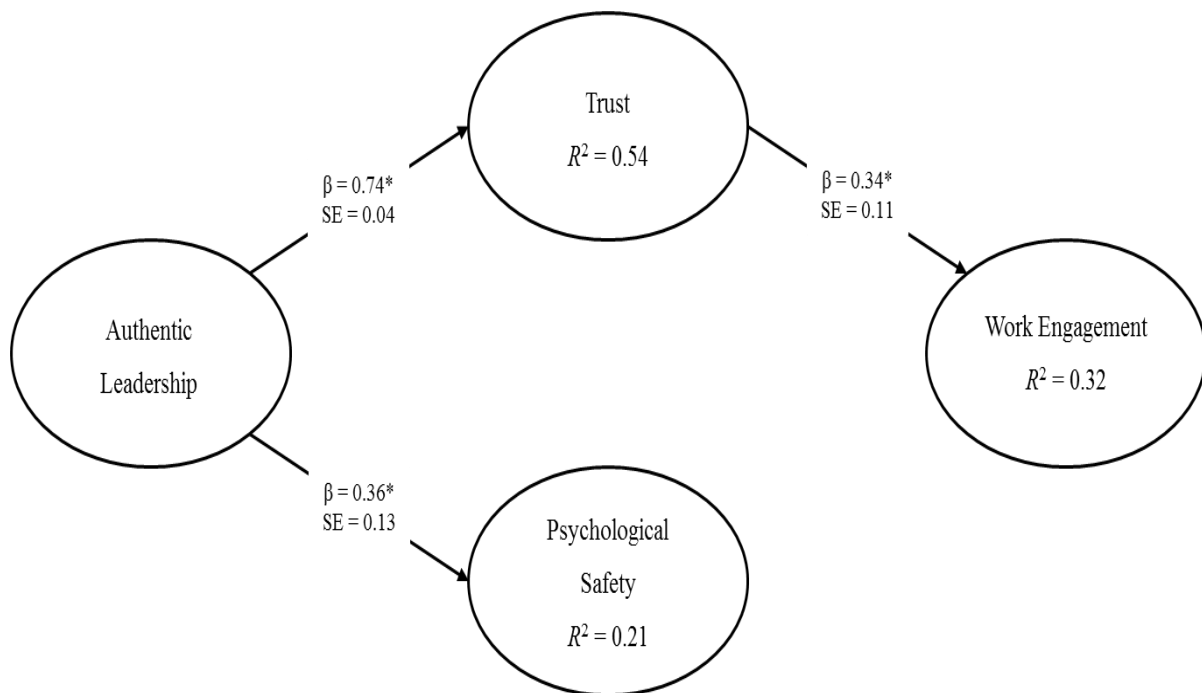

Figure 2. Standardised path coefficients
Note: Only statistically significant paths are included in the figure
**$p < .01$.

Figure 2 shows the standard path coefficients found with authentic leadership as the independent variable and trust in supervisor, psychological safety and work engagement as dependant variables.

Hypothesis 1

For the portion of the model which predicted trust in supervisor, Table 5 indicated that the path coefficient from authentic leadership ($\beta = 0.74$, $p = < 0.01$) was statistically significant and had the expected sign. The MLR estimated equation accounted for 54% of the variance in trust in supervisor; therefore Hypothesis 1 can be accepted.

Hypothesis 2

For the portion of the model which predicated psychological safety, Table 5 indicated that the path coefficient from authentic leadership ($\beta = 0.36$, $p = < 0.01$) was statistically significant and had the expected sign. The MLR estimated equation accounted for 21% of the variance in psychological safety; therefore Hypothesis 2 can be accepted.

Hypotheses 3 and 4

Trust in supervisor did not have a statistically significant indirect effect on psychological safety; therefore Hypothesis 3 cannot be accepted. For the portion of the model which predicted work engagement, Table 5 indicated that the path coefficient from authentic leadership did not have a statistically significant direct relation with work engagement. Therefore, Hypothesis 4 cannot be accepted.

Hypotheses 5 and 6

Trust in supervisor ($\beta = 0.34$, $p = < 0.01$) was statistically significant and had the expected sign. The MLR estimated equation accounted for 32% of the variance in trust in supervisor; therefore Hypothesis 5 can be accepted. Psychological safety did not have a statistically significant effect on work engagement. Therefore, Hypothesis 6 cannot be accepted.

Testing the Indirect Effect

To determine whether authentic leadership indirectly affected work engagement through trust in supervisor and psychological safety, the procedure as explained by Hayes (2009) was used. Bootstrapping was used to construct two-sided bias-corrected 95% confidence intervals (CIs) to evaluate indirect effects.

Table 7

Indirect Effects of Authentic Leadership on Work Engagement via Trust in Supervisor

Variable	Estimate	SE	95% BC CI
Authentic Leadership	0.25	0.08	[0.09, 0.40]

SE, standard error; BC CI, bias-corrected confidence interval
Note: Only statistically significant paths are included in the table
[**]$p < .01$.

Regarding the indirect effects of authentic leadership on psychological safety, the 95% CIs for trust in supervisor did include zero ($p = 0.33$). This suggests that authentic leadership does not have an indirect effect on psychological safety via trust in supervisor. Based on these results, Hypothesis 3 could thus not be accepted.

Regarding the indirect effect of authentic leadership on work engagement, the 95% CIs of trust in supervisor were significant ($p = < 0.01$) and did not include zero. This suggests that authentic leadership did have an indirect effect on work engagement via trust in supervisor. Based on these results, support was found for Hypothesis 5.

Regarding the indirect effect of authentic leadership on work engagement, the 95% of psychological safety did include zero ($p = 0.17$). This suggests that authentic leadership did not have an indirect effect on work engagement via psychological safety. Based on these results, Hypothesis 6 could thus not be accepted.

DISCUSSION

The objectives of this study were to determine possible relationships and indirect effects between authentic leadership, trust in supervisor, psychological safety and work engagement.

The results indicated that employees' perception of authentic leadership is positively related to trust in supervisor. When subordinates perceive authenticity in their leaders, the subordinates will develop trust in those leaders. The results are consistent with previous research which also established that authentic leadership is positively related to trust in supervisor. As leaders display truthfulness and openness with their subordinates, it will lead to unconditional trust between the leader and subordinates (Ilies, Morgeson, & Nahrgang, 2005). Furthermore, when leaders display integrity and a high moral standard and include their subordinates in the decision-making process, these authentic leaders will establish a deep-rooted sense of trust within their subordinates. Through this trust, a transparent process of addressing challenges will be sustained due to the leaders and the subordinates' shared values. When subordinates perceive their supervisors' values as being close to their own values, they will become more trusting of their supervisors (Podsakoff, MacKenzie, Moorman, & Fetter, 1990). A recent study done in the mining industry in South Africa found the implementation of authentic leadership to be a challenge faced by mines in South Africa (Bezuidenhout & Schultz, 2013). The study also found that an environment of trust and openness among employees was missing due to the lack of effective authentic leadership. Therefore, it is imperative that mining companies

develop authentic leadership within their supervisors in order to create an environment of trust. This environment of trust will lead to openness and transparency among all employees.

In terms of the relationship between authentic leadership and psychological safety, the current study found a positive relationship between the two constructs. When supervisors display authentic leadership, it leads to a climate of psychological safety among their subordinates. The results are consistent with previous research which also established that authentic leadership is positively related to psychological safety (Edmondson, 1999; Eggers, 2011). The behaviours displayed by a leader are pivotal in promoting psychological safety. Leaders are critical to breaking down the boundaries which often discourage subordinates from conveying their ideas as well as their concerns (Aranzamendez, James, & Toms, 2014). The behaviours displayed by leaders influence the perceptions experienced by subordinates with regard to the climate in the organisation which subsequently influences the willingness of subordinates to take risks (Roussin & Webber, 2011).

Leaders motivate by inspiration, displaying charisma towards their subordinates as well as by being intellectually stimulating and considerate of individuality (Eggers, 2011). Through this, leaders assist their subordinates in developing leadership skills by helping them become more aware of their own feelings, behaviours and thoughts. Leaders and subordinates must be aware of one another's expectations, needs and wants. This leads to positive change within an organisation by developing psychological safety (Eggers, 2011). A platform which allows for continuous communication and participation was identified as a need by employees in the mining industry. These employees felt that they did not have the freedom to express their own ideas and opinions (Bezuidenhout & Schultz, 2013). Authentic leadership would allow mining companies to establish an environment of psychological safety as well as allow employees to freely participate in the organisation.

In terms of the indirect effect of authentic leadership on psychological safety via trust in supervisor, the results did not confirm the indirect effect. The results of this outcome were unexpected, as a positive indirect effect of authentic leadership on psychological safety via trust in supervisor was expected, according to theory. According to Eggers (2011), trust between leaders and subordinates is a requirement for the presence of psychological safety. The relationship between the leader and subordinate must be transparent and vulnerable in order for trust to be present. Leaders who display transparency will create a climate of psychological safety for their subordinates. This in turn will promote increased participation

by subordinates in the decision-making process as well as foster increased trust in leaders (Eggers, 2011). An explanation of the results could be that psychological safety and trust both involve vulnerability or the perception of risk through choices which seek to minimise negative consequences (Edmondson, 1999).

Mayer, Davis, and Schoorman (1995) defined trust as the "willingness of a party to be vulnerable to the actions of another party" (p. 712), while Kahn (1990) defined psychological safety as "feeling able to show and employ one's self without fear of negative consequences" (p. 703). Therefore, both trust and psychological safety are a mutual expression of confidence between parties where neither will be harmed or placed at risk (Jones & George, 1998). Accordingly, the author of this research concluded that the two constructs appear to be closely related with no clear separation between the two and, as a result, the indirect effect would not have been prominent.

In terms of the relationship between authentic leadership and work engagement, the results did not confirm the relationship. These results of the outcome were unexpected, as in theory a positive relationship was expected between authentic leadership and work engagement. Authentic leaders display behaviours which are aligned with their own values as well as attempt to achieve truthfulness and openness in their relationships with subordinates (Avolio & Gardner, 2005). They demonstrate transparent decision making and lead by example which illustrate their commitment to their work. This serves as a guideline to subordinates to remain physically and emotionally involved in their work and, in so doing, increase the levels of work engagement (Bamford, Wong, & Laschinger; 2013).

The relationship between authentic leadership and work engagement is further supported by Schaufeli and Bakker (2004) and is consistent with the authentic leadership theory of Avolio et al. (2004). An explanation of the results in this study could be that if the organisation's environment limits ownership, then authentic leadership may potentially not prompt work engagement (Mayhew, Ashkanasy, Bramble, & Gardner, 2007; Pierce, O'Driscoll, & Coghlan, 2004). In a former study, the mining industry in South Africa had experienced difficulty with regard to ownership of tasks. The specific study found that mining employees were not provided with the opportunity to participate in decision making or to take responsibility for tasks (Bezuidenhout & Schultz, 2013). Research suggests that employees experience ownership when they are given the opportunity to take control of their job and the work setting (Alok & Israel, 2012). However, work engagement is viewed as a significant consequence of

authentic leadership (Avolio, Gardner, Walumbwa, Luthans, & May, 2004; Bamford, Wong, & Laschinger; 2013).

In terms of the indirect effect of authentic leadership on work engagement via trust in supervisor, the results confirmed the indirect effect. Authentic leadership has a positive effect on trust in supervisor which in turn results in increased work engagement. The results are consistent with previous research which also established that authentic leadership is positively related to work engagement via trust in supervisor. In order for a subordinate to perceive a leader as being authentic, a level of trust must be present between the leader and the subordinate (Hassan & Ahmed, 2011). Furthermore, components of authentic leadership such as authentic action and relational transparency are positively related to a subordinate's trust in a leader. Trust between a leader and subordinate also positively predicts employee work engagement (Bamford et al., 2013; Hassan & Ahmed, 2011).

When a subordinate has developed a high level of trust in an organisation and its leaders, the subordinate is more likely to become more engaged in his or her work (Bamford et al., 2013; Hassan & Ahmed, 2011). A poor relationship between supervisors and subordinates is a challenge faced by the mining industry. When the relationship between supervisors and subordinates is poor, involvement from supervisors tends to create a sense of intimidation and interference among subordinates. Therefore, subordinates may find it challenging to remain focused and committed to their work (Bloch, 2012). Supervisors who display authentic leadership and lead by example will foster trust within subordinates and encourage subordinates to be more engaged in their work.

In terms of the indirect effect of authentic leadership on work engagement via psychological safety, the results did not confirm the indirect effect. The results of this outcome were unexpected, as a positive indirect effect of authentic leadership on work engagement via psychological safety was expected in theory. According to Kernis (2003), authenticity is related to high levels of work engagement. Kahn (1990) found that work engagement increases in an environment where leaders promote psychological safety; in other words, an environment which allows subordinates to feel supported and accepted as well as able to participate without a fear of negative consequences should they fail. One explanation could be that hypothesis four did not show a relationship between authentic leadership and work engagement. Therefore, the indirect effect of authentic leadership on work engagement through psychological safety would not have been present in the study.

As indicated above, if the organisation's environment limits ownership, then authentic leadership may potentially not prompt work engagement (Mayhew, Ashkanasy, Bramble, & Gardner, 2007; Pierce, O'Driscoll, & Coghlan, 2004). Another explanation could be that when the environment limits ownership, the subordinates may have perceived this limitation as unsupportive and may have felt constrained. Therefore, even though psychological safety was present, it may not have had the anticipated effect on work engagement. Supervisors within the mining industry are amongst the most disempowered of all levels of management as they are caught up in the demands to deliver production (Bloch, 2012). This disempowerment of supervisors would result in a lack of ownership and leave them feeling constrained in their role.

The limitations of this study should be highlighted. The first limitation of the study was the use of a cross-sectional design, which restricts the determination of causal relationships among the study variables. The second limitation of the study was the use of a self-reported measure which may result in a "common method variance". The research was conducted during a time of uncertainty in the mining industry of South Africa, which may be perceived as a limitation. Finally, the research was conducted on a single operation in the mining industry; as a result, generalisation of the findings to other contexts may not be possible.

RECOMMENDATIONS

In spite of the noted limitations, various recommendations can be made for the individual, as well as the organisation and the Human Resource (HR) department.

It is important for both employees and the HR department to understand the impact of authentic leadership on outcomes such as trust, psychological safety and work engagement. Trust is an important component of organisational interventions. Therefore, it is vital that employees and the organisation understand that the only way to remain viable is to support one another. When an organisation builds an environment of trust, its employees will reciprocate by becoming more engaged in their work (Ugwu, Onyishi, & Rodriguez-Sanchez, 2013). Both the organisation and employees should participate in a give-and-take relationship. This will help both parties feel confident as well as foster a positive work environment which enhances work performance, psychological safety and work engagement (Ugwu et al., 2013). Authentic leadership plays a key role in creating this positive work environment.

According to Groves (2006), five key components which can facilitate the development of authentic leadership are the identification of leadership talent; performing action-orientated

development activities; the creation of leadership development opportunities through teaching; reinforcement of the organisation's culture of leadership development; and persuasive mentoring and coaching relationships.

An organisation can enhance authentic leadership in two ways. Firstly, by selecting leaders who display the four dimensions of authentic leadership, including behaviours such as appropriate and truthful sharing of information; highlighting the reasons for decision outcomes; involving employees in the decision-making process; and obtaining regular employee feedback (Bamford et al., 2013; Wong & Cummings, 2009). An organisation can select leaders by implementing competency profiles against which potential candidates can be assessed. Organisations should utilise assessment techniques as part of this process, such as psychometric testing, structured interviewing and workplace simulations.

Secondly, an organisation can implement structured leadership programmes or interventions which may include an analysis of an individual's life context and trigger events related to leadership behaviours, strategies to build psychological capabilities and assessment of the organisational context in which the individual operates (Wong & Cummings, 2009).

An organisation may utilise multisource feedback on performance in order to allow supervisors the opportunity to assess their performance on a regular basis and which may enhance their self-assessment skills. Such feedback may include the 360-degree feedback system which provides the recipient with a complete summary of his or her strengths and skills as viewed by him/herself as well as others, providing him or her with the opportunity to become more self-aware (Bamford et al., 2013; Wong & Cummings, 2009). Other leadership development methods include executive coaching, mentoring, networking, job assignments and action learning.

The above leadership development methods should focus on self-awareness, relational transparency and authentic behaviour (Groves, 2006; Wong & Cummings, 2009). Employees are more likely to respect an organisation when they are managed by leaders who are authentic, ethical, balanced, transparent, fair and consistent in their behaviours. When authentic leadership is dominant in the organisation, the organisation's internal communications system is more likely to be transparent (Men, 2013).

Organisations should provide rightful information to managers at all levels which is aligned with the organisation's values and goals (Men, 2013). They should provide training sessions

which equip leaders with authentic leadership characteristics such as honesty, openness, transparency, genuineness, positivity and communication skills. An organisation should select and promote leaders who possess authentic leadership characteristics. It is important to listen to the concerns of the employees in the organisation as well as invite employees to participate in determining the information which they would like to receive. Authentic leaders should provide employees with complete, detailed and truthful information in a timely manner. The organisation should be consistent in applying its values and actions as well as accept accountability for its actions. Furthermore, the organisation should be fair and balanced in its communication with employees (Men, 2013).

In addition to the above recommendations, the following recommendations can be made for future research. Future research should employ longitudinal research designs or diary studies in order to determine the causal relationships among the study variables. Furthermore, future research should expand the study to other organisations and industries as well as other provinces due to the fact that each of these factors may pose its own unique set of challenges and may yield a different result.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter consists of conclusions pertaining to this study and according to the specific objectives. The limitations of the research will be discussed, and recommendations for organisations and future research will be provided.

3.1   CONCLUSIONS

Mining companies are continuously faced with a volatile market which has resulted in a string of serious challenges (Deloitte, 2014, 2015; PriceWaterhouseCoopers, 2013). High potential employees are being deprived of vital on-the-job experience due to experienced management retiring or leaving. This results in a decrease in supply of experienced management for senior leadership positions (PriceWaterhouseCoopers, 2013; Groves, 2006). Therefore, it is important that organisations continue to engage managers in the leadership development process in order to address the challenges faced by the mining industry (Groves, 2006). Accordingly, leadership should be examined from an authentic perspective as leaders need to build an organisation which is resilient and able to achieve stakeholder expectations. Leaders should encourage trusting relationships which may result in several positive outcomes such as psychological safety and work engagement (Hassan & Ahmed, 2011).

The first objective of this study was to examine whether authentic leadership was positively related to trust in supervisor. Subordinates will develop trust in their supervisors when the supervisor is trustworthy and displays characteristics such as honesty, integrity, fairness and the willingness to accept vulnerability (Engelbrecht, Heine, & Mahembe, 2014). Authentic leadership comprises various characteristics which are displayed in the trust relationship between a supervisor and a subordinate (Engelbrecht et al., 2014). If subordinates are willing to place their trust in a supervisor and the supervisor establishes a basis of trust, the subordinates will be willing to place their trust in the work environment and the organisation (Caldwell & Dixon, 2010; Engelbrecht et al., 2014). The results of this study indicated that authentic leadership is positively related to trust in supervisor. Therefore, it is evident that when a subordinate perceives his or her supervisor to be authentic, it will foster increased trust in the supervisor. An explanation of the results could be that authentic leaders display integrity and a high moral standard. They include their subordinates in the decision-making process, thereby establishing a deep-rooted sense of trust within their subordinates (Podsakoff, MacKenzie, Moorman, & Fetter, 1990). A recent study done in the mining industry in South Africa found

the implementation of authentic leadership to be a challenge faced by mines in South Africa (Bezuidenhout & Schultz, 2013). The study also found that there was not an environment of trust and openness among employees due to the lack of effective authentic leadership. Therefore, it is imperative that mining companies cultivate authentic leadership skills in their supervisors in order to create an environment of trust. This environment of trust will lead to openness and transparency among all employees.

The second objective of this study was to examine whether authentic leadership is positively related to psychological safety. If leaders are controlling and unsupportive of their subordinates, subordinates are likely to feel unsafe and more unwilling to voice their opinions and concerns (Nembhard & Edmondson, 2006). However, when leaders are sympathetic, supportive and encourage subordinates to raise their questions and concerns, subordinates will feel a greater sense of psychological safety (Nembhard & Edmondson, 2006). Such leaders motivate by being inspirational, intellectually stimulating and considerate of individuality. Both leaders and subordinates must be aware of one another's expectations, needs and wants (Eggers, 2011). This leads to positive change within an organisation by developing psychological safety that will lead to transparency, positive self-awareness, positive moral perspective and a willingness to continually learn without the fear of negative consequences (Edmondson, 1999; Eggers, 2011).

The results in this study indicated that authentic leadership is positively related to psychological safety. Therefore, it is evident that when supervisors display authentic leadership, it leads to a climate of psychological safety among subordinates. Through authentic leadership, the boundaries which discourage subordinates from voicing their concerns and ideas are broken down. This subsequently influences the willingness of subordinates to take risks (Aranzamendez, James, & Toms, 2014; Roussin & Webber, 2011). A platform which allows for continuous communication and participation was identified as a need by employees in the mining industry. The employees in this specific study also felt that they did not have the freedom to express their own ideas and opinions (Bezuidenhout & Schultz, 2013). Authentic leadership would allow mining companies to establish an environment of psychological safety as well as allow employees to freely participate in the organisation.

The third objective of this study was to examine whether authentic leadership indirectly affects psychological safety through trust in supervisor. Psychological safety allows an individual to express him/herself without the fear of negative consequences (Kahn, 1990). Trust between a

leader and subordinate is a requirement of psychological safety (Eggers, 2011). Authentic leaders create their team by displaying trusting behaviours, transparency and integrity (Roussin & Webber, 2011). These leaders create a climate of psychological safety for their subordinates which results in increased trust in the leader and increased participation by subordinates in the decision-making process (Eggers, 2011). The results of this study indicated that authentic leadership did not have an indirect effect on psychological safety through trust in supervisor. An explanation of the results could be that psychological safety and trust both involve vulnerability or the perception of risk through choices which seek to minimise negative consequences (Edmondson, 1999). Mayer, Davis, and Schoorman (1995) defined trust as the "willingness of a party to be vulnerable to the actions of another party" (p. 712), while Kahn (1990) defined psychological safety as "feeling able to show and employ one's self without fear of negative consequences" (p. 703). Therefore, both trust and psychological safety are a mutual expression of confidence between parties where neither will be harmed or placed at risk (Jones & George, 1998). Accordingly, the author of this research concluded that the two constructs appear to be closely related with no clear separation between the two and, as a result, the indirect effect would not have been prominent.

The fourth objective of this study was to examine whether authentic leadership is positively related to work engagement. It has been suggested that authentic leadership is one of the major factors that contribute to work engagement (Harter, Schmidt, & Hayes, 2002). Leaders illustrate their commitment to their work through leading by example. They give guidance to subordinates as to remain vigilant, emotionally and physically connected while performing their work. This would result in increased levels of work engagement (Bandura, 1977). Through authentic leadership subordinates develop positive attitudes towards their work. The characteristics of an authentic leader include providing advice and coaching subordinates to formulate goals and organise their work. An authentic leader highlights drawbacks and shows an interest in the subordinate's career development. These characteristics are all positively related to work engagement (Hassan & Ahmed, 2011).

Subordinates are more likely to engage in their work when they are aware of the organisation's strategic priorities and their role in contributing towards these goals (Engelbrecht et al., 2014). Authentic leaders display an interest in their subordinates and continuously communicate with them. This allows employees to formulate a clear understanding of the organisation's goals and what is expected of them (Engelbrecht et al., 2014). The results of this study indicated that authentic leadership did not confirm the relationship with work engagement. The outcome was

unexpected; a positive relationship between authentic leadership and work engagement was expected, according to theory. An explanation of the results could be that if the organisation's environment limits ownership, then authentic leadership may potentially not prompt work engagement (Mayhew, Ashkanasy, Bramble, & Gardner, 2007; Pierce, O'Driscoll, & Coghlan, 2004). The mining industry in South Africa experiences difficulty with regard to ownership of tasks. A study found that mining employees were not provided with the opportunity to participate in decision making or to take responsibility for tasks (Bezuidenhout & Schultz, 2013). Research suggests that employees experience ownership when they are given the opportunity to take control of their job and the work setting (Alok & Israel, 2012). However, work engagement is viewed as a significant consequence of authentic leadership (Avolio, Gardenr, Walumbwa, Luthans, & May, 2004; Bamford, Wong, & Laschinger; 2013).

The fifth objective of this study was to examine whether authentic leadership affects work engagement indirectly through trust in supervisor. The trust, confidence and belief placed in leaders by subordinates will be influenced by the extent to which leaders are perceived as being trustworthy (Engelbrecht et al., 2014). Authentic leadership is related to trust through the value-driven behaviour which it promotes (Engelbrecht et al., 2014). When leaders manage and value ethics, they are likely to exhibit fairness, honesty and care towards their subordinates. They provide open communication and involve subordinates in decision making (Brown & Trevino, 2006). When subordinates perceive leaders to have acknowledged their work efforts and distributed rewards fairly, trust in leaders will increase (Wong, Spence-Laschinger, & Cummings, 2010).

Research suggests that subordinates are more likely to engage in their work when they view the organisation's systems and procedures to be fair and trustworthy (Albrecht, 2010). When subordinates experience increased levels of trust in their leaders, they will experience increased levels of work engagement. Therefore, the same process which develops trust also contributes to increased work engagement (Buckley, 2011). According to Wong et al. (2010), trust includes open communication with a free exchange of information, knowledge and ideas. When leaders are viewed as being transparent, acting in accordance with their values and not according to self-protective motives, they will develop an environment in which employees are engaged in their work (Hassan & Ahmed, 2011). The results of this study indicated that authentic leadership had an indirect effect on work engagement through trust in supervisor. Therefore, it is evident that when subordinates perceive their supervisors to be authentic, increased trust and work engagement will be fostered. An explanation of the results could be that authentic leaders

openly share information as well as openly express their thoughts and feelings, thereby expressing their authentic self (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). When leaders interact with openness and transparency, it should promote trust in subordinates. The perception of trust in a leader and being trusted by the leader will establish an environment in which subordinates will be engaged in their work (Liu, He, Tang, & Liu, 2014). A poor relationship between supervisors and subordinates is a serious challenge facing the mining industry in South Africa. When the relationship between supervisors and subordinates is poor, involvement from supervisors tends to create a sense of intimidation and interference among subordinates. Therefore, subordinates may find it challenging to remain focused and committed to their work (Bloch, 2012). Supervisors who display authentic leadership and lead by example will foster trust among their subordinates and encourage them to be more engaged in their work.

The sixth objective of this study was to examine whether authentic leadership affects work engagement indirectly through psychological safety. Work engagement should increase when leaders promote an environment which allows subordinates to feel supported, accepted and able to provide input without the fear of negative consequences (Kahn, 1990). Authentic leaders who build trusting, supportive and open relationships with subordinates promote psychological safety (Kahn, 1990). This is aligned with the balanced processing and relational transparency dimensions of authentic leadership (Penger & Cerne, 2014). When subordinates are not placed under persistent pressure to produce high levels of work, and when they do not feel constantly constrained, it will enable them to become more engaged in their work (Schaufeli & Bakker, 2004; Sonnentag, 2003). A supportive and psychologically safe environment may result in increased levels of work engagement (Penger & Cerne, 2014). The results of this study indicated that authentic leadership did not have an indirect effect on work engagement through psychological safety. The outcome was unexpected, as a positive relationship between authentic leadership and work engagement through psychological safety was expected, according to theory.

One explanation of the results could be that hypothesis four did not show a significant relationship between authentic leadership and work engagement. Therefore, the indirect effect of authentic leadership on work engagement through psychological safety would not have been present in the study. As indicated above, if the organisation's environment limits ownership, then authentic leadership may potentially not prompt work engagement (Mayhew, Ashkanasy, Bramble, & Gardner, 2007; Pierce, O'Driscoll, & Coghlan, 2004). Another explanation could

be that when the environment limits ownership, subordinates may have perceived this limitation as unsupportive and may have felt constrained. Therefore, even though psychological safety was present, it may not have had the anticipated effect on work engagement. Supervisors in the mining industry are amongst the most disempowered of all levels of management, as they are caught up in the demands to deliver production (Bloch, 2012). This disempowerment of supervisors would result in a lack of ownership and leave them feeling constrained in their role.

3.2   LIMITATIONS

The first limitation of the research was the use of a cross-sectional research design. As a result no causal interference could be drawn among the variables. A longitudinal research design or diary approach may have allowed for more robust causal relations and conclusions.

The second limitation was the use of self-reported questionnaires which raises concerns regarding "common method variance". Using only one method of data-collection may increase the probability of relations being false or insignificant (Oosthuizen, 2005). As the research was based on employee perceptions, the results could thus be artificially inflated.

The third limitation of the research was that it was conducted during a time of uncertainty within the mining industry of South Africa. At the time of conducting the research, the mining industry was experiencing economic constraints and labour unrest which resulted in concerns of retrenchments and down-scaling.

Finally, the research was conducted in a single context, in other words, the research was based on a single operation within the mining industry. Therefore, the research may not necessarily be generalised to other contexts such as other industries, organisations, occupations and provinces as each category may pose its own unique challenges.

3.3   RECOMMENDATIONS

Regardless of the limitations of this study, the present findings have important implications for practice and future research.

3.3.1   Recommendations for the Organisation

It is vital for organisations to understand the importance of authentic leadership as well as the impact of authentic leadership on outcomes such as trust, psychological safety and work

engagement. Leadership is essential in addressing the challenges experienced by the mining industry of South Africa. As a result leadership must be scrutinised from an authentic perspective. Particular focus must be placed on the relationship between leaders and subordinates as well as the associated effects on subordinates (Hassan & Ahmed, 2011). Both employees and the organisation should be aware that, in order to remain viable, they should support one another as trust is an important component of organisational interventions. As organisations establish a trusting environment, their employees will respond by becoming more engaged in their work (Ugwu, Onyishi, & Sanchez, 2013). Both organisations and employees should participate in a give-and-take relationship. This will allow both the organisation and subordinates to feel confident and to establish a positive work environment which will increase work performance, psychological safety and work engagement (Ugwu et al., 2013). An effective intervention for organisations to establish and maintain authentic leadership is to formulate a clear and concise strategy of authentic leadership development.

According to Groves (2006), there are five key components which can facilitate the development of authentic leadership. Firstly, an organisation should identify leadership talent. An organisation should establish a leadership pipe-line via a long-term perspective for identifying and developing leadership talent (Groves, 2006). This would allow an organisation to easily fill leadership positions with individuals who already possess the necessary skills and leadership talent. Secondly, an organisation should perform action-orientated development activities. These activities include projects and workshops which bring together high-potential employees to study current business issues. Through making recommendations to managers, they will develop leadership skills (Collins & Holton, 2004; Day, 2001).

Thirdly, an organisation should create leadership development opportunities through teaching. Authentic leadership experts should be brought in to present classes and have senior managers facilitate workshops on various authentic leadership topics (Groves, 2006). Senior managers should play an active role in developing leadership by sharing their own leadership experiences (Tichy, 2004). Fourthly, an organisational culture of leadership development should be reinforced. An organisation should make authentic leadership development a strategic priority and establish a supportive organisational culture (Groves, 2006). In order to reinforce the talent management process, it is important for the organisational culture to be characterised by strong and visible senior manager commitment to authentic leadership development (Hillman, Schwandt, & Bartz, 1990).

Lastly, persuasive mentoring and coaching relationships should be established. An organisation should establish a mentor network by placing all managers in mentoring relationships with direct subordinates (Groves, 2006). The mentors should coach these subordinates in order to establish a relationship with them.

An organisation can enhance authentic leadership in two ways, the first being selecting leaders who display the four dimensions of authentic leadership, including behaviours such as appropriate and truthful sharing of information; highlighting the reasons for decision outcomes; involving employees in the decision-making process; and obtaining regular employee feedback (Bamford et al., 2013; Wong & Cummings, 2009). An organisation can select leaders by implementing competency profiles against which potential candidates can be assessed. Organisations should utilise assessment techniques as part of this process, such as psychometric testing, structured interviewing and workplace simulations.

Secondly, an organisation can implement structured leadership programmes or interventions, such as an analysis of an individual's life context, triggering events related to leadership behaviours, devising strategies to build psychological capabilities and providing an assessment of the organisational context in which the individual operates (Wong & Cummings, 2009).

An organisation may utilise multisource feedback on performance in order to allow supervisors the opportunity to assess their performance on a regular basis. This may enhance their self-assessment skills (Bamford et al., 2013; Wong & Cummings, 2009). Such feedback may include the 360-degree feedback system which provides the recipient with a complete summary of his or her strengths and skills as viewed by him or her and others. This will provide him or her with the opportunity to become more self-aware (Bamford et al., 2013; Wong & Cummings, 2009).

The development of leaders' relational transparency can be facilitated through establishing clear leadership role expectations, including performance related to relational transparency, such as the expectations that leaders build open and honest relationships and are accessible to their subordinates (Bamford et al., 2013). Balanced processing of leaders can be facilitated by arranging staff meetings which allow leaders the opportunity to put forth new ideas and address challenges faced by the organisation. This would provide leaders with the opportunity to receive feedback from subordinates and managers (Brown & Trevino, 2006). The moral dimension of leadership can be developed by presenting leaders with case studies which address ethics, moral dilemmas and emphasise ethical leadership in practice (Brown &

Trevino, 2006). Through these learning activities, leaders will be able to build on their ability to view and process problems using alternative methods. They will also build on their ability to recognise and address moral dilemmas (May, Chan, Hodges, & Avolio, 2003). Other leadership development methods include executive coaching, mentoring, networking, job assignments and action learning (Groves, 2006).

The above leadership development methods should focus on self-awareness, relational transparency and authentic behaviour (Groves, 2006; Wong & Cummings, 2009). Employees are more likely to respect an organisation when they are managed by leaders who are authentic, ethical, balanced, transparent, fair and consistent in their behaviours (Men, 2013). When authentic leadership is dominant within the organisation, the organisation's internal communication system is more likely to be transparent (Men, 2013).

Organisations should provide rightful information to managers at all levels which is aligned with the organisation's values and goals (Men, 2013). They should provide training sessions which equip leaders with authentic leadership characteristics such as honesty, openness, transparency, genuineness, positivity and communication skills (Men, 2013). An organisation should select and promote leaders who possess authentic leadership characteristics. It is important to listen to the concerns of the employees within the organisation as well as invite them to participate in determining the information which they would like to receive (Men, 2013). Authentic leaders should provide employees with complete, detailed and truthful information in a timely manner. The organisation should be consistent in applying its values and actions as well as accept accountability for its actions. Furthermore, the organisation should be fair and balanced in its communication with employees (Men, 2013).

3.3.2   Recommendations for Future Research

The following recommendations can be made for future research. Firstly, longitudinal research designs or diary studies should be utilised for future research. A longitudinal design analyses change over a period of time on the same units (Ployhart & Vandenberg, 2010). A diary study also assesses data over a period of time. Therefore, these may be utilised in order to further validate the hypothesised causalities of the relationships and establish if the relationship holds true over time (Ployhart & Vandenberg, 2010).

Secondly, it is recommended that the study be expanded to other organisations and industries as well as other provinces. Different organisations, industries and provinces would present their own unique challenges which would influence the results.

Thirdly, future research may improve on this study by gathering data from additional sources within organisations, over and above the supervisors and subordinates.

Fourthly, future research may improve on this study by utilising a mixed method approach which includes both quantitative and qualitative data collection. This would allow the researcher to establish the authentic style of the leader as well as the prevailing variables and employee outcomes such as trust and psychological safety. The researcher would then be able to mitigate the close relation between constructs such as trust and psychological safety.

 Lastly, future research could also include other related leadership constructs into the data collection. This would allow the researcher to determine if the outcomes were exclusively related to authentic leadership, in order to exclude potential outcomes from other positive leadership constructs such as ethical, transformational, leader-member exchange and empowering leadership.

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