




# **Performance management and work engagement in a petrochemical industry: The role of authentic leadership**

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## COMMENTS

The reader is reminded of the following:

- The dissertation is submitted in the form of two research articles.
- The references and editorial style in this mini-dissertation follow the format prescribed by the *Publication Manual* (6th edition) of the American Psychological Association (APA).

## DECLARATION BY THE RESEARCHER

I Annah Mohlamme, hereby declare that the study *Performance management and work engagement in a petrochemical industry: The role of authentic leadership* is entirely my own work and that all sources were referenced correctly and accordingly. I further declare that this work will not be submitted to any other academic institution, except for a Master's degree in Human Resource Management at the North-West University. Finally, I declare that a qualified language editor edited this dissertation.

Sincerely,

Annah Mamokete Mohlamme

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## DECLARATION BY THE LANGUAGE EDITOR

I hereby declare that I was responsible for the language editing of the mini-dissertation '*Performance management and work engagement in a petrochemical industry: The role of authentic leadership*', submitted by Annah Mohlamme (13177265).

I further declare that although I am the supervisor of this study, I do have the necessary qualifications and 30+ years' experience in this field to do language editing and translation (BA Honours in Applied Linguistics – cum laude from the NWU). I am also an accredited member of the South African Translator's Institute (SATI).

A handwritten signature in black ink. The first part is a stylized 'E' and 'D' inside a circle, followed by the name 'Diedericks' written in a cursive script.

Dr Elsabé Diedericks  
BA, Hons, HED, Hons, MA, PhD

August 2020.

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## **DEDICATION**

I dedicate this dissertation to my parents, Josephine and Douglas, and my husband Brighton, who are the pillars in my life and who gave me the courage to complete this dissertation.

## SUMMARY

**Title:** Performance management and work engagement in a petrochemical industry: The role of authentic leadership

**Keywords:** Authentic leadership, performance management process, performance management system, performance appraisal, psychometric properties, validity, reliability, work engagement, petrochemical industry

The petrochemical industry is characterised by sophisticated technologies and processes into world-scale operating facilities. To stay competitive, the industry produces and markets a range of high-value product streams in 31 countries, creating superior value for its customers, shareholders and other stakeholders. Enhancing competitiveness is a key foundation of businesses through the retention of talent and highly skilled employees. The industry recognises that in order to deliver what it promised to its stakeholders, leadership is deemed a key driver in delivering the overall organisational strategy and performance. Leadership plays an important role towards driving the growth and success of any organisation in today's world. Research has shown that leadership can affect performance of the organisation only if the leader is perceived to be responsible and inspirational; hence, many organisations are moving towards authentic leadership. Leaders' authenticity has been receiving global attention over the past number of years as authentic leaders promote employees' trust, respect, and identification and, in turn, increase employees' level of work engagement. Further, research has indicated a positive relationship between authentic leadership and positive job outcomes such as performance.

Performance management has become increasingly complex, requiring many hours of manager and employee time, and costing organisations millions annually. With leaner organisations and pressure to do more with less, performance evaluation eventually evolved into more comprehensive performance management processes that included a fuller array of activities to drive performance, such as cascading goals, expectation setting, and interim feedback reviews. Therefore, in this study, performance management process (PMP) is used and preferred over performance management system, as the system is a component of the PMP. The PMP begins by setting goals and objectives for each employee, as employees perform more effectively when specific goals are set. Cascading goals are often used to link the organisation's strategic

goals to each employee with the idea that these linkages will help employees understand how their work aligns with the organisation's strategy. Therefore, in this study the performance management process forms part of the role of organisational leaders driving the strategy. Thus, for an effective performance management process, authenticity is a key behaviour for leaders to exhibit in terms of driving high employee performance and work engagement. Therefore, the aim of the study was to investigate authentic leadership and its role in the performance management process and work engagement in a petrochemical industry.

In manuscript 1 (Chapter 2), a validation of the psychometric properties of a new South African measuring instrument on performance management, developed by Maimela and Samuel (2016), was done. The constructs in Maimela and Samuel's measuring instrument were linked and applied to the context of the petrochemical industry (Chapter 3: Article 2). Psychometric properties of validity and reliability of the instrument were considered. A confirmatory factor analysis was done to test whether measures of Maimela and Samuel's performance management constructs were consistent with the researcher's understanding of the nature of that construct. No items were removed from the measuring instrument and it was suited to be utilised in a petrochemical context.

A cross-sectional survey design was followed to gather data with a sample size of ( $N = 225$ ) in the petrochemical industry. The measuring instruments used were the Biographical Questionnaire, Authentic Leadership Inventory, Performance Management System and the Work Engagement Scale. In this quantitative study, descriptive statistics were calculated using means, standard deviations, and Raykov's rho reliability coefficients and correlation matrix. Structural equation modelling (SEM) was used to test the hypotheses, which involves two major steps, namely measurement model assessment and structural model assessment. Furthermore, to confirm the best-fit model, a competing measurement model was used in the study and through correlations and regression paths, analysis was also done to test for moderation in the study.

The results of manuscript 2 showed that there was a positive relationship between authentic leadership and the performance management process with a statistical significance ( $p < 0.01$ ) (large effect). The results also found a positive relationship between authentic leadership and work engagement ( $r = 0.15$ ), although with a small effect of less than 0.3; and finally, no relationship and indirect path could be found between the PMP and work engagement; therefore, authentic leadership was found not to be a moderator in the study.

Recommendations for future research were made.

## **CHAPTER 1**

### **1. INTRODUCTION AND BACKGROUND**

In society, organisations continuously need to adjust to constant rapid technological changes and must be willing to modify their structures, strategies, methods and practices in order to remain competitive in the global market (Marais & Hofmeyr, 2013). In South Africa, challenges in globalisation, affirmative action, cultural diversity, broad-based black economic empowerment, and transformation necessitate leaders to engage with their employees in order to gain financial sustainability for the organisation (Kotzé & Nel, 2017). According to Manyanka and Sebola (2012), South African leaders are prone to be tough on performance and individuals, driving target production volumes that result in less emphasis on employee well-being. In a recent study, it has been found that for South African leaders to be successful, they need to recognise cultural diversity and build relationships with those whom they lead (Kotzé & Nel, 2017). These developments call upon all organisations globally and nationally to adopt new approaches to leadership; thus, the call for authentic leadership. Authentic leaders can re-establish confidence, hope and optimism (Kotzé & Nel, 2017).

The motivation and interest of this study firstly lie in the petrochemical industry, as this industry has been faced with many challenges in recent years. The industry is an international chemicals and energy business and produces one of the world's largest synthetic fuels. It is listed on the Johannesburg Stock Exchange (JSE) and New York Stock Exchange (NYSE) with a turnover rate of R204 billion and operating profit of R28 billion. This industry has been in existence for over 50 years with experience in production and marketing range of chemicals. The industry employs 31 270 talented people that use selected technologies to safely and sustainably source, produce and market chemical and energy products competitively to create superior value for its customers, shareholders and other stakeholders. This industry further operates world-scale facilities to produce a range of high value product streams, including liquid fuels, chemicals and lower-carbon electricity. The petrochemical industry sells over 6, 6 million tons of chemical products per annum to more than 7 500 customers across 120 countries (Company Sustainability Report, 2020).

Due to the volatility of the economy and the more recent Covid-19 pandemic outbreak, the industry has had to revise its strategy for greater focus on enhanced cash generation, value realisation for shareholders and business sustainability. Furthermore, the industry's activities

are set to differentiate capabilities and strong market positions which can be expanded over time. This will be a key enabler to achieve the 2030 strategy of longer-term aspirations to shift to a lower carbon economy (Company Sustainability Report, 2020).

The above gives a clear indication of the importance and value of this industry locally and internationally. It is an industry that requires the right kind of leadership and a highly engaged workforce to deliver on its long-term strategy. These challenges forced industry leaders to look at leadership from a different view in order to take the organisation forward. The industry has embarked on value-driven leadership that drives a high-performance culture and work engagement. Thus, the purpose of the study is to investigate the role of authentic leadership and its influence on the performance management process and work engagement of employees in a petrochemical industry. The fundamental reason for undertaking this research is that companies/line managers often fear or do not understand the process of performance management and its link to work engagement once the performance cycle has been completed. The hypothesis, therefore, is that should line managers and organisational leaders embark on true leadership, which is characterised by authenticity, it will alleviate negativity around the performance management process and increase work engagement. Often employees tend to be highly disengaged after a performance management process and this could possibly be ascribed to the lack of authentic leadership. Work disengagement and subsequent counterproductive behaviours are detrimental in an industry that constantly has to focus on business sustainability.

Xiong and Fang (2014) reported that authentic leadership (AL) is a developing theory that has been part of literature since many years ago. As part of leadership research, authentic leadership is linked to positive organisational behaviours and ethics (Avolio & Gardner, 2005; Northouse, 2013). AL dimensions include self-awareness, a moral perspective, and a transparent leader that has a positive impact on the overall outcome for the employee, including individual and organisational outcomes such as employee commitment, engagement, job satisfaction, performance, and general productivity (Luthans & Avolio, 2003). According to Avolio, Gardner, Walumbwa, Luthans, and May (2004), authentic leaders are known to enrich their followers' work and performance, producing positive results.

In terms of assessing employees' performance at work, performance appraisal has been of interest to scholars and practitioners for hundreds of years; therefore, interest has also escalated to the process of managing performance (DeNisi & Murphy, 2017). Performance management is aimed at helping employees improve their performance through a selection of activities,

policies and procedures (DeNisi & Murphy, 2017). Performance management within the Operations and Maintenance (O&M) environment has gained considerable momentum due to the high risk and capital intensity of such industries. The petroleum industry is keen on the assurance of proper control of its production assets; therefore, measuring its performance through application and asset control (Liyanage & Kumar, 2003).

Currently, the petroleum sector is facing challenges in recruiting and retaining talented workers as the nature of oil and gas operations is characterised by high volumes of risk which makes it more difficult compared to how it was in the past and to other industries (Enzer, 2014; Preng & Nielsen, 2007). In 2014, the significant drop in the oil price resulted in many retrenchments and a shortage of skills, which led to leaders in the oil and gas industry having to embrace new workforce strategies that would increase employees' morale and engagement in order to mitigate layoff and retrenchment challenges (Al Zaabi, Ahmad, & Hossan, 2016).

Engagement comprises heightened levels of energy and identification with one's work; compared to burnout, which involves low levels of both (Akhtar, Nawaz, Mahmood, & Shahid, 2016). Al Mehrzi and Singh (2016) make a distinction between employee engagement and work engagement; employee engagement refers to the relationship that an employee has with his or her work, while as per the work of Kahn (1990), work engagement is a progressive energy connecting employees to their organisation, either emotionally, cognitively or physically.

For the purpose of this study, the researcher will focus on work engagement. Gruman and Saks (2011) stated that engaged employees apply their acquired skills to tasks in ways that validate their individuality in terms of their thoughts, feelings and values. Work engagement permits employees to concurrently express their preferred selves and satisfy their role requirements (Gruman & Saks, 2011). Work engagement has been identified as being vital for organisational success; therefore, the challenge is how to promote the engagement of employees to the benefit of both organisation and employee (Gupta & Kumar, 2013). According to Gallup (2014), the number of engaged employees is half when being compared to their disengaged counterparts, with only 13 percent of all employees being "highly engaged," and 26 percent "actively disengaged" (Deloitte Review, 2015). Work engagement is arguably the most critical metric for organisations in the 21st century; therefore, making it a key measure that drives organisational performance (Kolkata, 2010). It has been established that South Africa has one of the highest percentages (45%) of actively disengaged employees in the world; therefore,

reporting negative experiences in terms of the performance management process (PMP) (Kotzé, Van der Westhuizen, & Nel, 2014).

## **2. PROBLEM STATEMENT**

Organisations need to invest in leadership development, due to the negative impact of destructive leadership on employees (Scheepers & Elstob, 2016). Organisational leadership could be critical in the successful implementation of the PMP; however, empirical investigation into this relationship is lacking. Therefore, in many organisations the PMP is viewed with much anxiety and scepticism (Sang & Sang, 2016). The PMP is more encompassing than mere performance appraisal (PA) in that it incorporates performance planning, monitoring and evaluation during the performance cycle by measuring and developing employees' performance (Van Waeyenberg, Decramer, & Audenaert, 2017). PA involves managers making top-down assessments and rating the performance of their subordinates at an annual PA discussion; this is only one element of the PMP (Arogundade, Olasunkanmi-Alimi, & Arogundade, 2015).

The current labour market emphasises employees' self-management and proactive behaviour, growing the need for employees to feel capable, competent, and in control of their work environment (Rego, Lopes, & Nascimento, 2016). The petrochemical industry is no different, more so during a time of global economic volatility. Global growth in this industry was reduced to 3.1% in 2015. South Africa grew by only 1.3% as commodity prices, electricity supply concerns, and infrastructure constraints increased. In the first quarter of 2016, the economy tightened by 1.2%. The rand was volatile, weakening by 27% during the 2016 financial year. The United States matured by 2.4% in 2015 and the Eurozone by 1.5%. China's GDP growth slowed to 6.9%, and a recession in Brazil and Russia gained momentum. The volatile global economic environment continues to challenge the industry; however, in the long term an up-rise is expected. In order to mitigate these challenges, a strong leadership team, driving a culture of high-performance, is key. Therefore, building leadership capability to enable productivity, high-performance and sustainable growth is the current focus of the industry. The petrochemical industry also strives to create a work environment that promotes a value-driven, high-performance engaging culture that offers versatile careers through talent and succession planning, which is a key component in the PMP (Company Integrated Report, 2017).

Based on the work of Gutermann, Lehmann-Willenbrock, Boer, Sven, and Voelpel (2017), past research proposes a connection between leadership and follower motivation, with leadership affecting followers' affect and mood. Employees' work outcome is affected by the feedback they receive about their work behaviour and performance, which plays an important role in cultivating performance and facilitating goal attainment. However, Black and Marshall-Lee (2011) postulate that human resource (HR) processes do not afford the employee an opportunity for sufficient feedback, with leaders and line managers being unwilling to provide feedback. It is evident that managers would rather focus their attention on completing forms, systems and processes, as they strongly believe that the PMP takes up treasured time and resources; yet, yielding little return on investment. Ideally, managers should focus and spend more time on having quality transparent conversations with their employees (Black & Marshall-Lee, 2011).

Therefore, the assumption is that the quality of these conversations lies in having a true authentic leader who can give constructive feedback to the benefit of both the employees and the organisation. Failing to do so could result in employees being disengaged from their work as most of the PMP is linked to rewards and the financial well-being of the employee.

It was discovered in the studies of human resource management practices and turnover intentions, and lack of career development (e.g., Lipman, 2015; Miller, 2014), that employees vacate their roles and organisations due to financial constraints or complications relating to uncooperative colleagues, role uncertainty and lack of job descriptions. Previous literature, according to Van Waeyenberg et al. (2017), revealed that there are costs associated with turnover, resulting in diminished organisational performance and efficiency. Hence, it is vital that organisations prevent and mitigate turnover intentions. Research supports that HRM practices and systems can be effective in reducing turnover (Van Waeyenberg et al., 2017). Similarly, it is also found that leaders may contribute to disengagement by showing no gratitude, recognition or feedback which lead to a lack of trust or confidence in the organisation's leadership (Al Mehrzi & Singh, 2016). It is stated by Gutermann et al. (2017) that an environment dedicated to employees receiving performance feedback and support from their managers will likely manifest in achieving work goals. Therefore, it is suggested that engaged leaders contribute to employees' work engagement.

Authentic leaders enhance followers' work engagement by giving employees autonomy and opportunities for development. Based on established theory in terms of authentic leadership,

followers of authentic leaders tend to identify and feel more empowered to take on more accountability for their work (Emuwa, 2013). Authentic leaders provide incentives that encourage followers to invest themselves into their work. Authentic leaders possess the psychological ability and ethical climate to uphold morality and transparency by creating an environment of positivity (Xiong, Lin, Li, & Wang, 2016). Thus, authentic leaders exhibit relational transparency (Avolio et al., 2004), indicating that their behaviour will be authentic; reducing uncertainty and risk associated with engaging with employees during the PMP (Al Mehrzi & Singh, 2016). Therefore, an employee is likely to trust the supervisor and identify with the organisation; however, should a leader breach this trust, employees would perceive the leader as being inauthentic, experiencing this as a breach of the psychological contract (Xiong et al., 2016).

Mutual trust can be built between leader and follower if there is transparency (Yi Li, Zhang, & Liu, 2016). Thus, the hypothesis is that should a leader be authentic in his or her interaction with an employee during the PMP, work engagement is enhanced. According to Gruman and Saks (2011), engaged employees apply their acquired skills to tasks in ways that demonstrate their individuality such as thoughts, feelings and values. Based on the social exchange theory (SET) by Blau (1964), employees are encouraged to perform beyond their duties when they feel and experience the organisation to be looking after their interests. In addition to the SET, the equity theory and the job characteristics model (amongst others) also support the connection of high-performance work practices to employee outcomes, proposing empowerment as a tool for high-performance. According to the equity theory, employees are encouraged when they are treated fairly in the organisation (Akhtar et al. 2016). Employees, who have faith in management and believe that they are cared for holistically by the organisation and not just as a number through the PMP, are successful, satisfied and highly encouraged. Happy employees result in happy customers, which increases profitability (Rao, 2017).

Based on the above, it is evident that the PMP and the fairness thereof have a direct effect on employees' work engagement; yet, the challenge has been how to make the process work that it positively contributes to work engagement and authentic leadership. Although significant ground has been covered in authentic leadership research, a lot more work remains to be done empirically (Akhtar et al., 2016). It is apparent that many leaders do not accept their share in destroying employees' work engagement; they fail to make use of essential actions and tools to sustain the initial energy and commitment of employees upon entry into the organisation.

Therefore, leaders play a vital role in fostering employee work engagement that drives high-performance (Rothmann & Wels, 2013).

In conclusion, it is important for research to investigate authentic leadership and its role in the PMP and work engagement in a petrochemical industry, as this industry plays an imperative role in the economy, being an industry that is to remain sustainable for many years to come. This industry has exploration, development, production, marketing and sales operations in 33 countries around the world and contributes R81.7 (47%) billion to revenue in the Southern African region (Company Integrated Report, 2017). It is evident that there is still a great deficit in research on how the PMP is handled by leaders in the organisation; also, how it may lead to employees being disengaged from their work. The role of authentic leadership needs to be researched even more; also, its significant role in the overall PMP and the impact thereof on employee work engagement. It has been highlighted that many employees leave their leaders and not the organisation; therefore, leadership is key to the success of the organisation and its employees. The lack of leadership in handling HR systems such as the PMP can be detrimental to both the organisation and the employee.

### **3. LITERATURE REVIEW**

#### **Authentic Leadership**

For organisational sustainability in today's business environment, leadership is key in alleviating challenging problems that the business may experience. Kouzes and Posner (2007) established that treating employees with respect and authenticity is a key component of ensuring effective leadership (Hsieh & Wang, 2015). Authentic leadership (Gardner, Avolio, & Walumbwa, 2005) originates from the work of Bass (1985, 1990), who concentrated on basic dimensions of transformational and charismatic leadership that dictate the ethical and moral personality of leaders who are authentic-transformational or socialised charismatic (as opposed to pseudo-transformational or personalised charismatic) (Xiong & Fang, 2014). Academic domains have developed and increased their attention on authentic leadership (e.g., Avolio et al., 2004; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008; Walumbwa, Wang, Wang, Schaubroeck, & Avolio, 2010). Hence, based on Walumbwa et al. (2008), leaders who treat their employees authentically, exhibit alignment between their values and actions, co-operating with employees to the advantage of the organisation.

From an organisational perspective, as defined by Luthans and Avolio (2003), authentic leadership is a process of gaining positive psychological capabilities and developing a high organisational culture, leading to greater self-awareness and self-directed positive actions from the leader and acquaintances; thus, leading to the development of positive behaviour. Authentic leadership, as adapted by Walumbwa et al. (2008) and Luthans and Avolio (2003), stimulates both psychological capabilities and a positive ethical climate, enhancing greater self-awareness, an internalised moral perspective, balanced processing of information, and relational transparency amongst both leaders and followers of the organisation. Thus, authentic leadership fosters positive self-development (Hsieh & Wang, 2013).

A more recent study (Peter, 2016) suggested that authentic leadership may positively affect employees' attitudes, behaviour and work outcomes. For authentic leadership to be effective, it is important for leaders' authentic actions to be perceived as such by employees, which in turn will result in employee commitment, employee job satisfaction, trust, creativity, performance, work engagement and organisational citizenship behaviour (Hsieh & Wang, 2013). The core components of authentic leadership, according to Giallonard, Wong, and Iwasiw (2010), are the following:

- **Self-awareness** - comprises trust in one's motives, feelings, desires, and self-relevant cognition and awareness of the self. It is an on-going process where authentic leaders come to understand their unique talents, strengths, values and purpose in the organisation.
- **Relational transparency** - expression of emotions and feelings by leaders towards their employees. This behaviour stimulates trust and openness about sharing of information while trying to reduce exhibits of inappropriate emotions and expressions.
- **Internalised moral perspective** - it is a form of self-regulation that is guided by internal moral standards and values rather than group, organisational and societal pressures.
- **Balanced processing** - a process of objectively analysing all relevant data and lobbying others' views before reaching a conclusion.

George, Sims, McLean, and Mayer (2007) argued that authentic leaders are known to demonstrate their values, authentic self and principles through balancing their extrinsic and intrinsic motivations and empowering people to lead. When these behaviours are exhibited,

they are likely to encourage employees to reciprocate the actions (this is directly linked to SET, Blau, 1964), trusting their supervisors, and engaging in their work (Wang & Hsieh, 2013).

### **Performance Management Process**

In the 1980s, the PMP became popular and was emphasised as a management tool that includes performance appraisal, in terms of achieving performance goals. Performance management sub-processes are inclusive of defining the organisational strategy, setting goals, executing strategy, training and measuring performance (Ramulumisi, Schultz, & Jordaan, 2015). Performance management has evolved as a function of creating, monitoring and achieving personal and organisational goals. Based on Esu (2008), performance management's key emphasis is managing the individual and work environment towards achieving organisational goals (Ramulumisi et al., 2015).

The PMP focuses on the incessant improvement of performance, which is driven by leaders of the organisation towards strategically aligning the organisational goals, training, priorities and how work is done and organised accordingly. The PMP elements are inclusive of the following: employee growth, salary and remuneration review, individual performance, organisational performance objectives for individuals and teams, performance management system design - new design versus redesign - and system technology (Ramulumisi et al., 2015). However, Bussin and Smit (2015) postulated that performance management encompasses much more than merely focusing on annual appraisal forms which potentially lead to misinterpretation and an under appreciation of the benefits of the process. It involves properly constructed appraisals that should represent a synopsis of ongoing dialogue - throughout the entire year.

Based on research, PAs - as practised in organisations - are largely rejected and many employees are dissatisfied with them (Sang & Sang, 2016). Swanepoel, Botha, and Mangonyane (2014) stated that if employees perceive PAs to be unfair, they can reduce rather than increase their loyalty and input. Therefore, employees' organisational commitment, job satisfaction, trust in management and performance will likely increase work-related stress if the PA is specifically perceived to be procedurally unfair. The process will be taken less seriously if employees believe that their appraisal was undertaken casually or unsystematically, resulting in loss of morale and productivity from poorly managed PAs (Swanepoel et al., 2014).

In order to understand their career prospects, employees prefer to receive feedback on their strengths, weaknesses and what the organisation expects from them. It is therefore part of a manager's job to provide feedback and be actively involved in the PMP; however, many managers are uneasy in addressing this vital task (Ramulumisi et al., 2015). The main purpose of performance management is to effectively appraise relevance through achieving objectives and sustainability in a dynamic, constant and clear manner. This approach calls for management to support this process by making performance management part of the organisational strategy through engaging employees in their work on a daily basis (Ramulumisi et al., 2015). Designing a PMP that increases work engagement, will increase higher levels of performance output, such as productivity, job satisfaction, work well-being, organisational culture, talent management, business performance and more satisfied customers through growth and stakeholder returns by producing better quality products or services, ultimately influencing bottom line results (Martins, 2015).

### **Work Engagement**

In recent years, scholars have shown growing interest in the concept of work engagement, following changes in the employee-organisation relationship (Eldor, Vigoda-Gadot, & Salanova, 2016). Kahn (1990) provided seminal research on work engagement, defining it as allowing employees to attach to their work roles in terms of three dimensions, namely physical, emotional and cognitive engagement. The physical dimension is when individuals exercise their energies towards achieving their roles, while the emotional dimension is a combination of all three dimensions (physical, emotional and cognitive) and indicates how employees feel - positive or negative - towards the organisation and its leaders. The cognitive dimension of work engagement by Kahn (1990), involves employees' beliefs about the organisation, its leaders and work conditions (Kular et al., 2008). Kahn further argued that a diverse, creative, self-directed, goal-orientated work environment is most likely to be associated with an engaged workforce (Eldor et al., 2016). Rothbard (2001) further stated that work engagement as psychological presence includes absorption and attention and focusing on role activities. This notion is drawn from the original work of Kahn (1990).

The social exchange theory (SET; Blau, 1964) postulates that individuals in a social exchange relationship are normally seen as emotional beings that are concerned with patterns of exchange obtained from cognitively processing organisational information (Huang, Ma, & Meng, 2016). The exchange process further attributes individual feelings and emotions to different social

units within the organisation; thus, in turn, directing how strongly individuals feel attached to their organisation, and leading to engaged and committed behaviour (Huang et al., 2016). Research in term of the SET established that when treated fairly and with concern by their leaders, employees are willing to reciprocate because they believe that their supervisors are obliged to be honest with them regarding the organisation. However, should employees feel that the company does not treat them fairly, their engagement will decline (Wang & Hsieh, 2013).

An engaged worker is pronounced as being energetic, motivated, enthusiastic and passionate about his or her work; however, an employee that is disengaged is indifferent, depersonalised, alienated and uninterested in his or her work. Gallup (2014) stated that there are three types of employees, namely (i) passionate employees who feel a deep connection to their organisation, driving the organisation forward through innovation; (ii) disengaged employees who invest time, but no energy or passion into their work; they sleepwalk through the work day; and finally (iii) actively disengaged workers who daily display their unhappiness by destabilising the accomplishments of their engaged co-workers. They are simply unhappy at work (Pandita & Singhal, 2016). In recent years, work engagement has received much attention and research done on a sample of 65 companies in different industries has shown that the top 25% on an engagement index showed more return on assets (ROA), lucrativeness and more than twice the shareholder value in comparison with the bottom 25% (Gruman & Saks, 2011).

### **Relationship between Authentic Leadership, the PMP and Work Engagement**

Pandita and Singhal (2016) stated that organisations need to provide a conducive environment to employees, a dignified culture to thrive in, followed by both intrinsic and extrinsic rewards through leadership, resulting in increased work engagement. Research has established that leadership in the organisation plays a cardinal role in the success of the PMP (Sang & Sang, 2016). Prowse (2009), and Nayab and Richter (2011) espoused that the PMP is perceived and practised as two separate events, namely setting goals at the beginning of the year and end-of-the-year PA; thus, increasing the likelihood of failure (Sang & Sang, 2016). For the PMP to be successful, it requires an on-going process of planning, continuous coaching, performance counselling, and appraisal, which is characterised by the interaction of all parties involved, as well as appropriate leadership (Sang & Sang, 2016).

According to Rothmann and Wels (2013), extensive research on psychological conditions and work engagement has demonstrated that open, honest and frequent communication between employee and management generates trust and high organisational performance. Senior leaders that engage with their employees are deemed to have their organisations receive best-companies-to-work-for awards. According to Al Sahi, AL Zaabi, Ahmad, and Hossan (2016), authentic leaders can achieve their common goals, increase commitment, augment general performance and assure trust through changing themselves and coping with follower perception. Authentic leaders also contribute towards creating a conducive work environment, job satisfaction, work engagement, and improved general organisational performance. Research has found that within the first six months of employment, there is a decrease in the portion of engaged employees to a mere 40%. The longer the employee stays in the organisation, the more the work engagement level decreases. It is reported that after ten years of being with the company, only 20% of the workforce is still engaged (Rothmann & Wels, 2013). Work engagement has become a key issue in the organisation; therefore, it is important to establish how to promote engagement amongst employees (Gupta & Kumar, 2013).

It is evident from literature that leadership plays an important role in the PMP as many leaders often fear this process and are not always transparent. This lack of transparency has detrimental effects on the employee and the organisation. According to Manyanka and Sebola (2012), managers are responsible for increasing the productive capacities of their employees and producing results through people. Management needs to view performance management as part of a daily routine in order to engage employees in their jobs; therefore, leadership plays a significant role in work engagement. Such a dynamic organisation as this one in the petrochemical industry needs strong authentic leadership in order to achieve its organisational objectives and to maintain its sustainability on both national and international frontiers, by keeping its human capital engaged and content in terms of fair and credible best practices, including its performance management process. It is thus important for this research to be carried out, as authentic leadership has not been explored adequately in relation to the PMP and work engagement. This study will therefore close the gap in literature and contribute towards improving the way in which organisations view the PMP and employees' work engagement.

The following research questions were formulated, based on the problem statement:

- How are the relationships between authentic leadership, the performance management process and work engagement conceptualised in literature?
- Are the psychometric properties of a new South African measuring instrument on the performance management process valid for use in a different context?
- Does authentic leadership have an influence on the performance management process?
- What role does authentic leadership play in employees' work engagement in a petrochemical industry?
- Does authentic leadership influence the relationship between the performance management process and work engagement.

#### **4. RESEARCH OBJECTIVES**

The research objectives are divided into general and specific objectives.

##### **4.1 General Objective**

The general objective or aim of the study was to investigate authentic leadership and its role in the performance management process and work engagement in a petrochemical industry.

##### **4.2 Specific Objectives**

The specific objectives of this research were to:

- investigate the relationships between authentic leadership, the performance management process and work engagement as conceptualised in literature;
- validate the psychometric properties of a new South African measuring instrument on the performance management process for use in another context;
- establish whether authentic leadership has an influence on the performance management process;
- determine the role of authentic leadership in the work engagement of employees in a petrochemical industry; and
- establish whether authentic leadership influences the relationship between the performance management process and work engagement.

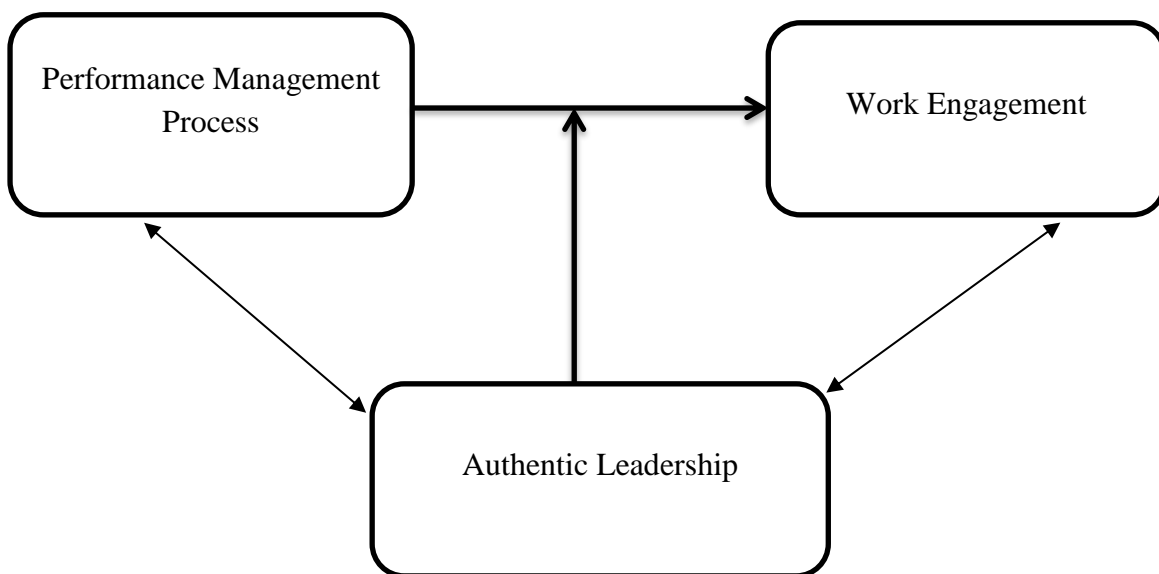
## 5. Research Hypotheses

The following hypotheses are postulated for this study:

- *Hypothesis 1:* There is a positive relationship between authentic leadership and the performance management process.
- *Hypothesis 2:* There is a positive relationship between authentic leadership and work engagement.
- *Hypothesis 3:* Authentic leadership moderates the relationship between the performance management process and work engagement.

With reference to Hypothesis 3, moderation analysis aims at distinguishing whether a third variable (i.e. statistical interaction) influences the relationship between independent and dependent variables (Harty, Sella, & Kadosh, 2017).

The proposed model for this study can be illustrated as follows:



*Figure 1:* Proposed model of the study

## **6. EXPECTED CONTRIBUTION OF STUDY**

### **6.1 Expected Contribution for the Individual**

Individuals in organisations can potentially benefit in that they will know and trust that their performance is managed authentically. They will feel valued as a result of this process and will potentially increase their value proposition and work engagement. Individuals might have a different view towards leadership - a positive view which will potentially result in an improved relationship between employer and employee. Employees will have a clear understanding of what is expected of them, as leaders will handle the PMP authentically. Employees will be recognised and rewarded accordingly for their performance and this will potentially lead to less disengagement, which often leads to poor performance or disputes in the workplace.

### **6.2 Expected Contribution for the Organisation**

This research will potentially help organisations in building the capabilities of their leadership, taking cognisance of the impact that leaders have on the PMP and employees' work engagement levels. This research will potentially assist organisations in understanding how leaders can better handle the PMP and alleviate negative aspects associated with the process.

### **6.3 Expected Contribution to Literature**

This research will bridge a gap in literature, as no link has been found between the role of authentic leadership in the PMP and work engagement. South African public services, through assessments of performance management, concluded that although the implementation of the PMP is a line manager's responsibility, managers exhibit a general lack of commitment towards managing the performance of their employees. Therefore, leadership is imperative in order to successfully implement the PMP (Manyanka & Sebola, 2012). Numerous actions are taken by leaders at all levels - from frontline managers to top executives - to facilitate motivating and engaging employees; thus, substantially enhancing workforce performance and important business outcomes (Marrelli, 2016).

## **7. RESEARCH METHOD**

The research method in this study has two phases, namely a systematic literature review and an empirical study.

## **7.1 Literature Review**

The literature review was done by conducting searches through the North-West University's library website. The databases included Ebscohost, Emerald, Google Scholar, Google books, Science direct, Sabinet, SaePublications, and Jstor. The following main journals were consulted due to their relevance to the topic of interest: *International Journal of Human Resource Management*, *International Journal of Business and Management*, *Journal of Psychology*, *Journal of Contemporary Management*, *Journal of Behavioural Sciences*, *Journal of Applied Psychology*, *Journal of Management*, *Journal of Psychology in Africa*, *South African Journal of Industrial Psychology*, *Journal of Commerce and Social Sciences*, *International Journal of Productivity and Performance Management*.

## **7.2 Empirical Study**

The empirical study included the research design, study participants, research procedure, measuring instruments, statistical analysis and ethical considerations.

## **7.3 Research Design**

A quantitative research approach was followed which involved testing objective theories by examining the relationship among variables through statistical procedure. A cross-sectional survey design was utilised to allow inferences about the role of authentic leadership in the PMP and work engagement of employees in a petrochemical industry (Creswell, 2014).

## **7.4 Participants**

The researcher made use of convenience sampling which involves respondents being selected via convenience or their availability and accessibility (Creswell, 2014). Data was collected within different departments in the petrochemical industry from employees who had performance agreements/contracts in place and who were part of the performance management process (this also included leaders of the organisation). A target of at least 200 respondents was required to complete the questionnaire at the end of the annual performance management process.

## 7.5 Research Procedure

Ethical clearance [NWU-HS-2018-0049] was obtained from the North-West University's Vaal Triangle Campus and applied as per its guidelines and standards. The researcher obtained permission for the study from the petrochemical industry's Executive Committee (EXCO), human resource department and stakeholders who were part of the study. The researcher disclosed her professional status in the petrochemical industry to all relevant committees and employees who partook in the study. In order to avoid a conflict of interest and to honour confidentiality, an outsourced company, Xtrapolate, was responsible for disseminating the electronic questionnaires. After permission had been granted, the study took effect with an electronic questionnaire being disseminated over a period of three weeks via the Xtrapolate database, with an attached letter stating the intent and purpose of the study. Questionnaires were disseminated at the end of the performance cycle, after employees had received their performance feedback, as this gave a true reflection - from leaders and employees - of the data. The letter emphasised confidentiality, also stating that participation was voluntary, which means participants could decide to withdraw at any time. The researcher also provided a consent form with the questionnaire, as consent first had to be obtained before the researcher could use participants' personal information as per the Protection of Personal Information (PoPI) Act, 4 of 2013. Once all questionnaires had been completed, the researcher made use of a Microsoft Excel spreadsheet to capture the information.

## 7.6 Measuring Instruments

The following measuring instruments were used in this research:

*Biographical Questionnaire.* The biographical questionnaire was utilised to gather relevant biographical information of the participant in terms of age, race, gender, language, occupation and education.

*Authentic Leadership Inventory (ALI;* Neider & Schriesheim, 2011) was used to determine whether employees consider their leaders to be authentic. ALI is based on the same dimensions of the Authentic Leadership Questionnaire (ALQ; Walumbwa et al., 2008) which comprises four factors, namely self-awareness, relational transparency, balanced processing, and internalised moral perspective; yet having different items to the ALQ (Neider & Schriesheim, 2011). The ALI comprises 15 items, measured on a 5-point Likert-scale to which responses

vary from 1 (*disagree strongly*) to 5 (*agree strongly*). Example items include “My leader admits mistakes when they occur” and “My leader carefully listens to alternative perspectives before reaching a conclusion”. Cronbach’s alpha coefficients indicated that the scale in general is reliable ( $\alpha = 0.74 - 0.85$ ; Neider & Schriesheim, 2011; Stander, De Beer & Stander, 2015). The ALI was developed as Neider and Schriesheim (2011) were concerned about the ALQ’s subjective content analysis as well as the “garbage parameters” used to improve model fit.

*Performance Management System* (PMS; Maimela & Samuel, 2016) is a questionnaire comprising four sections with 29 items, each item measured on a 5-point Likert-scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The questionnaire items are derived from extensive review of performance management literature in order to achieve content validity. For the purpose of this study, performance management system had been changed to performance management **process**. Section A (awareness and understanding of the PMP) comprises 7 items (e.g., “My leader defines and communicates the purpose of the PMP to employees”), with a Cronbach alpha coefficient of 0.82; Section B (the role of managers in ensuring the effectiveness of the PMP) comprises 10 items (e.g., “My leader explains my rating outcomes to me”), with a Cronbach alpha of 0.91; Section C (satisfaction with performance goals and standard setting) comprises 8 items (e.g., “My performance rating is based upon agreed goals”), with a Cronbach alpha coefficient of 0.69; and Section D (satisfaction with performance rating and bonus) comprises 8 items (e.g., “Fair criteria are used in calculating performance bonuses”), with a Cronbach alpha of 0.90. A reliability threshold of 0.70 is recommended by Nunnally (1978), thus establishing internal consistency of the instrument.

The *Work Engagement Scale* (WES; Rothmann, 2010) was utilised to measure work engagement and comprises 9 items and is measured on a 7-point Likert-scale ranging from 1 (*never or almost never*) to 7 (*always or almost always*). Three components of work engagement, as conceptualised by Kahn (1990), were utilised, namely (a) cognitive engagement (e.g., “When I’m working, I lose track of time”), (b) emotional engagement (e.g., “I am passionate about my job”), and (c) physical engagement (e.g., “I feel a lot of energy when I am performing my job”). Cronbach’s alpha coefficients of the three subscales were  $\alpha = .80$  (physical engagement),  $\alpha = .82$  (emotional engagement), and  $\alpha = .78$  (cognitive engagement) (Rothmann, 2010).

## 7.7 Statistical Analysis

In this quantitative study, Mplus 8 (Muthén & Muthén, 1998-2017) and SPSS 25.0 (IBM Corporation, 2015) were used to analyse the data. In the descriptive statistics, the means, standard deviations, skewness as well as kurtosis of the variables were used. The maximum likelihood robust (MLR)-estimator was used to account for the skewness and kurtosis of data. Hypotheses were tested using structural equation modelling (SEM). SEM involves two major steps, namely measurement model assessment and structural model assessment. Kline (2005) suggested that SEM researchers should always test the full measurement model underlying the full structural model first, and if the fit of the measurement model is found acceptable, then proceed to the second step of testing the structural model by examining its various fit indexes (Huang, Ma, & Meng, 2017). SEM has no single statistical test of significance for model fit; therefore, several goodness-of-fit measures were used to assess the fit of the model. The following statistics were produced, namely Chi-square ( $\chi^2$ ) which is the test of absolute fit of the model, the standardised root mean residual (SRMR), and the root means square error of approximation (RMSEA), incremental fit indices, including the Tucker-Lewis index (TLI) and the comparative fit index (CFI) (Hair, Black, Babin, & Andersen, 2010). For the TLI and CFI, values higher than 0.90 were considered acceptable. RMSEA values lower than 0.08 and an SRMR lower than 0.08 indicated a close fit between the model and the data.

Cohen (1988) published standards for practical significant correlation coefficient as follows: .10 (small effect), .30 (medium effect) and .50 (large effect). The value of 95% ( $p \leq 0.05$ ) was used to indicate the confidence interval level for statistical significance (Nolan & Heizen, 2010). The reliability of the measuring instruments was determined by Raykov's rho coefficient ( $\rho$ ) 0.70 and higher as being acceptable (Wang & Wang, 2012).

PROCESS v3.0 (Hayes, 2012-2018) was used to determine interaction effects. The level of statistical significance was set at  $p < .05$ . Bootstrapping (10 000 samples) was used to construct two-sided bias-corrected 95% confidence intervals (CIs) to assess the significance of effects. In the first step, the predictor and moderator were centred into the regression equation, followed by their interaction in the second step. The product of the two main effects represents the interaction term.

## 8. ETHICAL CONSIDERATIONS

The researcher obtained ethical clearance via Optentia Research Focus Area at the North-West University's Vanderbijlpark Campus prior to conducting the study. In all phases of the research, written informed consent was obtained from participants before they engaged in the study. This consent form acknowledged that participants' rights and anonymity were protected during data collection. Before conducting the study, the researcher ensured that participants voluntarily agreed to take part in the research. Participants were informed that they were free to decline or withdraw at any point in the research process. The researcher ensured that participants understood that there would be no negative consequence for them should they wish not to participate (Struwig & Stead, 2001). The researcher assured participants that all information was treated confidentially and was used for research purposes only. Participants and management of the organisation where the research had been done were to receive feedback of the results via a research report.

## 9. CHAPTER DIVISION

The layout of the chapters is as follows:

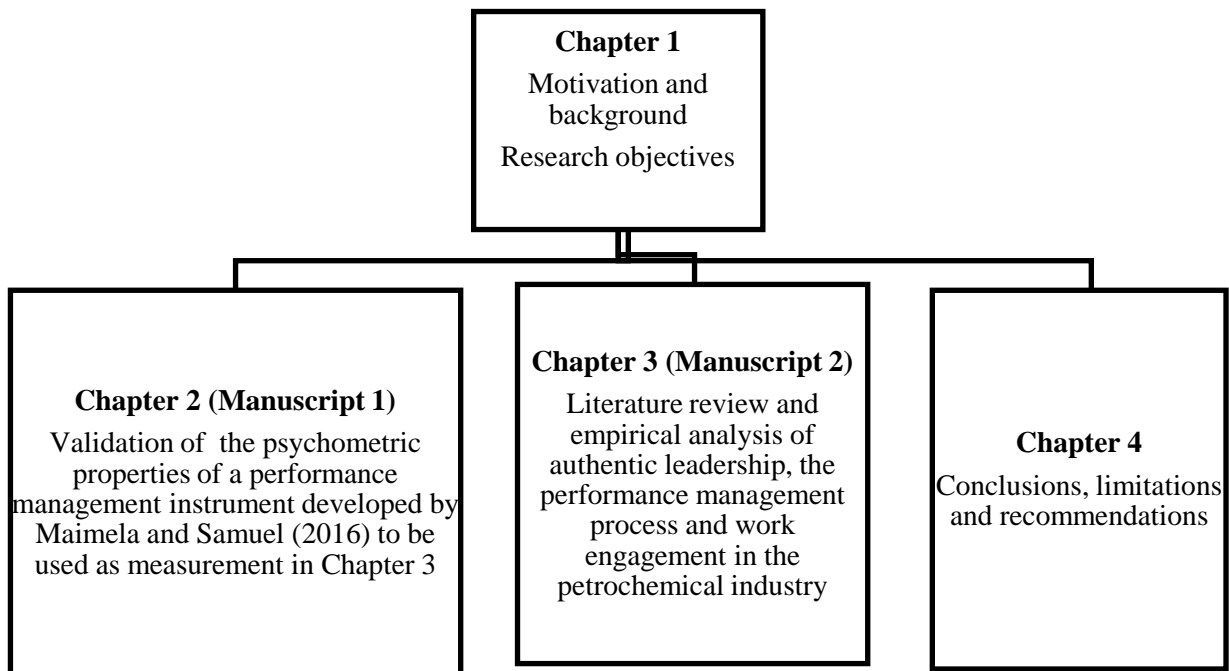


Figure 2. Layout of the study.

Chapter 1: Motivation and background of the study.

Chapter 2: Manuscript 1.

Chapter 3: Manuscript 2.

Chapter 4: Conclusion, limitations and recommendations.

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**CHAPTER 2**

**ARTICLE 1**

Manuscript 1, titled “The performance management process: A psychometric evaluation of a performance management measuring instrument”, is aimed at establishing whether a new South African measuring instrument on performance management, developed by Maimela and Samuel (2016), has the necessary properties in terms of validity to be appropriately used in a petrochemical context.

This manuscript has been earmarked for publication in the *South African Journal of Industrial Psychology* and acknowledges the following contributions:

- Conceptualisation of the study: A Mohlamme and E Diedericks
- Literature search: A Mohlamme
- Reviewing of literature: A Mohlamme
- Collection of data: A Mohlamme
- Analysis of data and statistical results: A Mohlamme, E Bothma and E Diedericks
- Writing of manuscript and article: A Mohlamme
- Comments and guidance: E Diedericks

## **The performance management process: A psychometric evaluation of a performance management measuring instrument**

### **ABSTRACT**

**Orientation:** The petrochemical industry in South Africa is a highly competitive and specialised industry, characterised by sophisticated technologies and processes into world-scale operating facilities. The industry acknowledges that in order to deliver what it promised to its stakeholders, leadership is a key driver in delivering the overall organisational strategy and performance, through a performance management process that its employees deem fair and objective.

**Research purpose:** The purpose of this study was to validate the psychometric properties of a South African measuring instrument on performance management, developed by Maimela and Samuel (2016), for use in another context, namely the petrochemical industry.

**Motivation for the study:** Measuring instruments on performance management, especially in a South African context, are scarce; thus, the need to validate the psychometric properties of an existing measuring instrument in terms of validity and reliability that could offer accurate, valid and interpretable data when used in the petrochemical industry.

**Research approach, design and method:** This study followed a quantitative research approach and cross-sectional design. The research method comprised two phases, namely a literature review of the key measurement properties, namely reliability and validity, found in an adequate and accurate measuring tool that would ensure quality results. The second empirical phase provided critical statistical analyses in terms of validity and reliability for use in a different context.

**Main findings:** Maimela and Samuel's (2016) PMS measuring instrument yielded high content and construct validity, providing a general coherent literature framework within which to structure the measurement items. No items were removed, and no error variances correlated. The composite reliability coefficients of the measuring instruments' underlying variables were considered acceptable, ranging from 0.77 to 0.85.

**Practical implications:** Performance management in a dynamic and globally competitive sector such as the petrochemical industry can provide managers with practical guidelines on

the implementation and successful management of performance management processes as a reward mechanism towards retaining talented employees and achieving organisational objectives.

**Contribution and value-added:** There is a deficit in the number of South African measuring instruments on performance management. Validation and refinement of the current measuring instrument could further advance existing knowledge in the field of performance management processes.

**Keywords:** Performance management process, performance management system, measuring instrument, psychometric properties, validity, reliability, petrochemical industry

## **Introduction**

The world and the business environment in its entirety are changing rapidly, being challenged by internal and external powers that influence their operations. In order to survive and grow, organisations need to address these forces. An internal force that has an exceptionally strong influence on an organisation is its human capital. Organisational culture is kept alive and well; and a high-performance culture starts proactively with leadership, cascading down to include every employee in the organisation. Therefore, a sound and workable performance management system is imperative in setting organisational goals and priorities towards ensuring a satisfied workforce and successful business (Moerdyk, Dodd, Donald, Kiley, van Hoek, & van Hoek, 2015).

Performance management links long-term organisational objectives to its day-to-day performance against measurable key performance indicators, monitoring performance against those indicators. The Constitution of South Africa (1996), Section 152, paves the way for performance management, linking the concept of performance management to democratic values and principles in terms of Section 195(1) (Drakenstein Municipality, 2017).

The research objective in this manuscript is to validate the psychometric properties of a South African measuring instrument developed by Maimela and Samuel (2016) and to determine its reliability and validity for use in a different South African context, namely the petrochemical industry. It is imperative for this study to utilise a measuring instrument developed for a South African context specifically. Based on a global approach, performance management differs from country to country and from culture to culture. According to Mustafa (2013), employees and management can have different opinions in terms of fair and just pay and rewards for performance. This may be ascribed to cultural influences on employees and management; therefore, yielding differences in understanding good performance. These cultural differences from country to country influence and complicate the standardisation of performance management policies in multinational companies (Mustafa, 2013). A performance management system is a global phenomenon and organisations around the whole world - public, private or non-profit organisations - are implementing different kinds of performance management systems in order to manage their employees' performance and that of the organisation (Makamu, 2016).

Maimela and Samuel (2016) term their research the performance management system (PMS), whilst this study - based on its philosophy and the type of process that is followed in the petrochemical industry - prefers to term all aspects of performance management under the collective term “performance management process” (PMP). The petrochemical industry has made a distinction between process and system, because it acknowledged the value add in having performance in two phases (the process first, then system input), as it eliminates performance management being just a tick box exercise by managers. The process forces a holistic view of the employee’s talent profile and aspiration for the future, linked to rewards and benefits. Line managers are forced to sit and have proper conversations about the employee’s performance and gaps that need to be addressed for the employee to perform optimally. Once these conversations have taken place, the systems part kicks in where the employee and line manager interact with the system to upload what was discussed, keeping record by tracking the progress thereof. The petrochemical industry’s primary purpose in terms of its PMP is to promote higher levels of employee performance in support of the organisation’s strategy and associated goals as a high performing, value-driven organisation (Company Guidelines, 2018).

## **Literature Review**

Through a continuous process, performance management measures and develops the performance of organisational members, aligning their performance to the strategic goals of the organisation. Based on the inherent challenges entailed in terms of subjectivity, performance management has been one of the most acclaimed, critiqued and debated topics for decades and many organisations are deserting the traditional appraisal process as it is a source of frustration for many leaders (Cunha, Vieira, Rego, & Clegg, 2017). Mustafa (2013) emphasised the importance of performance management in the employment relationship; it is crucial from an employer’s perspective to understand employees’ contribution towards organisational objectives. An effective performance management process assists an organisation in understanding how its employees are currently performing. Through the assessment of the training needs and set development plans, performance management allows the organisation to use the process to influence and drive individual remuneration packages (Mustafa, 2013). However, feedback - from employer and employee - after a performance appraisal is often severely neglected (Mustafa, 2013)

Based on a survey conducted at 21<sup>st</sup> Century (Bussin, 2018), statistics indicate that:

1. Regular employee feedback yields 15 % lower turnover rates than companies that offer no feedback;
2. 43% of highly engaged employees are provided regular feedback;
3. Profitability is increased by 9% when managers receive feedback in terms of their strengths;
4. 70% of employees state that recognition of their efforts would encourage them to work harder; and
5. 80% of employees are motivated by recognition.

According to Mustafa (2013), many existing global organisations have new markets and growth opportunities that yield new challenges for organisations in terms of building performance management standards for all managerial levels. Employees have to achieve globalisation market standards as global trends present the organisation with new and often confusing problems as organisations are expected to be skilful and mindful in terms of dealing with a wide range of economic, legal, political, sociocultural and technological factors that directly affect employee performance management. Adams' (1963) equity theory directs constructs of organisational justice in literature, postulating an input-output ratio comparison. An employee compares his or her contribution to that of his or her peers, reacting on the assessment outcomes. Should an employee perceive any injustice in the input-output ratio, counterproductive behaviour might follow, such as productivity decline, tardiness, turnover intention and/or sabotage (Schultz, Bagraim, Potgieter, Viedge, & Werner, 2003).

Sachane, Bezuidenhout, and Botha (2018) state that performance management is considered a key feature of human capital management and should receive managerial priority as it fosters organisational effectiveness. Based on employee satisfaction surveys, performance management regularly ranks among the lowest topics with less than one third of employees believing that their company's performance management process assists them in improving their performance. Therefore, it is highlighted and argued that performance should guide organisational decisions, routines and structures that promote strategic planning and performance evaluation. Hence, the PMP places key emphasis on improving organisational performance and putting less emphasis on input and process control. Often management focuses principally on repeated processes which define organisational goals, set performance targets and subsequently hold employees accountable (Sachane et al., 2018).

Not many performance management measuring instruments could be found in literature that relate to a South African context. As explained in a previous paragraph, it is not always ideal to use an instrument developed outside the borders of South Africa, due to cultural differences and a subsequent lack of cross-cultural validity (De Souza, Alexandre, & Guiardello, 2017). A further reason for preferring to use a South African measuring instrument is that performance management programmes by different organisations in different (first world) countries are incompatible with the prevailing organisational culture and tradition in South African organisations; this often directs employee perceptions (Kandula, 2006). Culture is not formed or established overnight; it evolves gradually and is extremely difficult to change once it has been established (Hatch & Cunliffe, 2006). Changes in organisational culture necessitate changes in organisational policies and procedures, as well as the values guiding employee behaviour (Kandula, 2006).

Therefore, South Africa with its diverse, unique and intricate organisational culture warrants a measuring instrument suited for this specific context. Through an Atlas ti8 search, the researcher found nine measuring instruments on performance management developed in and for South Africa, namely De Leeuw and Van den Berg (2011); Heystek (2014); Govender, Grobler, and Joubert (2015); Katende, Schimikl, and Pelser (2015); Mafanya and Matsiliza (2015), Maimela and Samuel (2016); Sachane et al. (2018); Makhubela, Botha, and Swanepoel (2016); and Molefe, Paul-Dachapalli, Ragadu Schultz, and Van Hoek (2020). Of all these studies, the only one that showed perfect alignment to the constructs used in the performance management process in the petrochemical industry, was the measuring instrument developed by Maimela and Samuel (2016). The other studies had limitations ranging from negative skewness; sample bias; lack of sampling frame; omission of important performance management practices; to limited scope, to name but a few. Thus, the research objective of this study is to validate the psychometric properties of the measuring instrument on performance management, developed by Maimela and Samuel (2016), for use in the petrochemical industry.

It is imperative to select an adequate and accurate measurement tool to ensure quality results. The instrument developed by Maimela and Samuel (2016), albeit in the education sector, should offer accurate, valid and interpretable data in the petrochemical industry. Therefore, validity and reliability are the key measurement properties (De Souza et al., 2017). Validating this instrument will be done with a theoretical overview of the literature underpinning the performance management process, as is evident in Maimela and Samuels' (2016) research;

subjecting these theoretical constructs to principles of validity and aligning them to the PMP best practices in the petrochemical industry. The second section will focus on the specific measuring instrument, providing a critical statistical analysis of its reliability for use in another context.

## **Research methodology**

### **Research design**

This manuscript adopted a quantitative research approach and cross-sectional design. The latter is the most relevant design in validation studies of measuring instruments and questionnaires (Kesmodel, 2018). The research method comprised two phases, namely a literature review of the key measurement properties, namely reliability and validity, found in an adequate and accurate measuring tool that would ensure quality results. The second empirical phase provided a critical statistical analysis of its validity and reliability for use in another context.

### **Data analysis and discussion**

#### *Validation of psychometric properties*

Psychometric evaluation has often measured the measurable rather than the important. According to Edenborough (2005), psychometric tests or instruments are measurement devices. This measurement is used to gain an understanding of an individual, in order to be able to predict behaviour and provide a basis for future action. For an organisation to make use of psychometrics, the measuring instrument needs to be deemed valid and reliable first as part of the psychometric properties.

#### *Validity*

Research validity means that the survey measures what it intended to measure (De Souza et al., 2017). Internal validity refers to the match between the research findings and reality; external validity means that the research findings can be replicated to other contexts (Kumar, 2019). Maimela and Samuel's (2016) measuring instrument will be analysed for (i) content validity - the instrument content adequately reflects the construct being measured; thus, each individual question addresses specific and relevant aspects of performance management; and (ii) construct validity - the variables really represent the construct being measured and depends on a strong

theoretical underpinning, in this case, an extensive review of performance management literature (Bryman & Bell, 2011; De Souza et al., 2017).

Maimela and Samuel's (2016) study focused on higher learning institutions in South Africa that are developing and embracing performance management as a tool in achieving excellence and heightened research productivity. Therefore, their study aims to provide PMP mechanisms through which organisational rewards objectively correspond with individual employees' contributions in terms of achieving organisational goals by evaluating the perceptions of academic staff members at an open distance learning institution. However, in higher education there is direct pressure from government on universities to increase both student output and research output. The danger of this pressure is that it could shift the focus of education and portray academics as completion rather than learning and development entities. This is potentially a gap, as no performance measurement should be done under duress, which could ideally mean the results may not be a true reflection as individuals are now focusing on what the government wants and not the actual learning process. The questionnaire addresses key issues, which are in line with the researcher's study and comprises four sections, each addressing different issues pertaining to the performance management process. The four different sections in Maimela and Samuel's (2016) questionnaire will now be discussed.

### **Section A: Awareness and understanding of the performance management process in the organisation**

Barth and de Beer (2018) postulate that the first step in organisational strategy involves the formulation and identification of strategy; and the second step translates into communication and implementation of the strategy in order to accomplish anticipated organisational goals and objectives. This process is very important and key in the successful implementation of the performance management process as employees are key stakeholders in the organisation's strategy. The goals or key performance areas of the performance agreement contract between employer and employee stem from the organisation's strategy; therefore, it is critical that employees are aware of the strategy and its direct link to the performance management process. Organisational strategies differ within different industries and sectors, but what remains constant is the use of PMP features that align and cascade organisational objectives in support of implementing the overall strategy (Barth & de Beer, 2018). A successful implementation of the strategy indicates that the performance management's purpose has been achieved; a process integrating both individual and organisational goals, aligning and focusing team members and

their actions. Standardised goals and enhanced performance are accomplished through the process of goal setting and expounding expectations; receiving and providing coaching and feedback; reviewing results on goals and expectations; and acknowledging and rewarding employees for their contributions in the performance process (Barth & de Beer, 2018).

The achievement of these goals is encompassed in the values of the organisation. In the petrochemical industry, values are part of the performance agreement measurement and ratings, as the organisation strongly believes that the individual should demonstrate the values that are set by the organisation. Explicit values of the organisation greatly influence team members' performance and how they conduct business; also, the way team members are managed, guiding their responses during times of pressure and duress (Barth & de Beer, 2018). According to Barth and de Beer (2018), most organisational cultures have prevailing or preferred value orientations that should ideally be acknowledged and broadly communicated to all members of the organisations. Unfortunately, this is often not the case.

In the petrochemical industry, it is expected that each employee lives by the values in order to drive the overall business strategy and, as of most recent, values have been refreshed and communicated to all employees. In the study of Maimela and Samuel (2016), the statistical results indicated a strong evidence of awareness with a reported mean of  $x = 4.68$  and associated standard deviation  $\sigma = 0.641$ . Further analysis revealed fair perception regarding a clear definition and communication of the process to affected employees ( $x = 3.4$  and  $\sigma = 1.226$ ;  $x = 3.34$  and  $\sigma = 1.266$ , respectively). Based on the study, it is imperative for management to explain the rationale for introducing a PMP to affected employees (Aguinis, 2013) and communicate in order to assist employees in understanding and coping with the PMP (Maimela & Samuel, 2016). A key component of the PMP design is the consultation with respective stakeholders within the organisation. However, the results ( $x = 1.88$  &  $\sigma 1.166$ ) from Maimela and Samuel's (2016) study indicate that academics were not consulted during the process; this could cause the PMP to fail in the institution. This consultation process also poses a key challenge in the researcher's study; employees are merely introduced to the process and systems regarding performance management.

## **Section B: Role of managers in ensuring effectiveness of the performance management process**

According to Canedo, Graen, and Grace (2017), over 90% of workers and managers indicated that their PMP failed to deliver expected results, indicating the processes to be both ineffective and inaccurate. PMP is often established by policymakers that impose a top-down approach, subjecting the process to a range of problems in terms of setting target levels. If a target is set too low, everyone will achieve it and it will have no credibility. If it is set too high, policymakers will be concerned that their management will appear incompetent. Due to the emergence of the problem above, the PMP has lost a great deal of credibility (Greener, 2019). This also makes the review by line managers a challenge as they are guided by the top-down approach and are forced to implement these targets.

Maimela and Samuel (2016) doubted the role and knowledge of managers in implementing and executing an effective performance management process, based on the statistical result of  $x = 3.45$  and  $\sigma = 1.168$ . Most of the respondents agreed with the statement that relevant institutional policy should guide application of the PMP by line managers ( $x = 3.49$ ); however, this outcome could not be confirmed as being truly representative of the respondents with  $\sigma = 1.115$ . In the petrochemical industry, the same principles apply, as target levels are pre-set in the system used to capture the performance agreement. Line managers and employees are bound to the pre-populated targets set by the policyholders of the PMP. It is, therefore, the line manager's responsibility to interpret and implement HR policies through personal interactions with employees regarding their overall performance (Hutchison & Huo, 2017).

The use of performance measures enables managers to signal to employees what is important, monitor performance, give feedback, and make administrative decisions. Measurement is a notoriously difficult area as tangible quantitative measures of outputs may not be fair to employees as they are not entirely under employees' control, whilst subjective measures such as overall performance ratings can be subject to manipulation and bias if not carried out carefully by line managers (Hutchison & Huo, 2017). Employees constantly need positive attitudes towards the performance management process and if ratings are deemed inaccurate, or if performance is measured solely on outputs over which employees have limited control, the process could be perceived as unfair. This could lower employees' acceptance of feedback and their motivation to participate further in the process, let alone perform (Hutchison & Huo, 2017).

Schleicher, Heidi, Sullivan, Hargrove, and Barros-Rivera (2018) stated that, according to research, performance rating accounts for only 4% to 10% of the feedback; therefore, highlighting the effectiveness of constructive feedback as a way of improving performance, assuming it does not threaten one's self-esteem and is perceived accurately and is accepted by the recipient. It is hence important that the employee's performance rating is purely based on performance and not personality. Maimela and Samuel (2016) found that respondents considered their rating outcome as subjective and not objective; hence, making the quality of feedback provided by managers neither constructive nor progressive.

The petrochemical organisation has clearly outlined processes of feedback and employee rating. There is a set time for feedback where both employee and employer acknowledge that rating as well as feedback about employees' overall performance has been communicated. Feedback and acknowledgement are done on the system that is used to capture all performance information. It is also important to note that although a process is followed regarding how to give feedback, it does not eliminate the perceptions of some employees that the rating was rather subjective.

### **Section C: Satisfaction with performance goals and standard setting**

According to Ndevu and Miller (2018), the first step towards ensuring that performance goals and standards are set, is a manager requesting a performance meeting with the employee to ascertain areas of work, resources and skills the organisation can assist and empower the employee with in order to achieve organisational objectives. Employees will contribute effectively and productively when they know what is expected of them and receive the necessary support; thus, increasing their self-efficacy and motivation (Sachane et al., 2018). Participation in the PMP is an imperative motivational tool for employees in achieving scheduled organisational goals as was evident in the study of Maimela and Samuel (2016) of  $x = 3.23$  and  $\sigma = 1.23$ . Given these results, it cannot be said that the entire process was that of command and control (Maimela & Samuel, 2016). Sachane et al. (2018) cited statistics that entering into a performance agreement will assist supervisors and employees in setting performance standards and measures that will drive organisational objectives and overall achievement. Maimela and Samuel (2016) indicated that performance goals and standards were at appropriate levels of responsibility,  $x = 3.28$  and  $\sigma = 1.178$ ; therefore, resulting in academics concluding that their performance goals were both achievable and at an acceptable responsibility level.

The petrochemical industry also follows the same process where line managers and employees sit and agree on goals to be attained throughout the performance cycle. This gives both employee and line manager the flexibility to agree on what is achievable, based on the employee's strengths. Goals can be either added or deleted, depending on the operating model of the organisation, but this flexibility can only happen during the start of the performance cycle and interim review. No goals may be changed in the final stages of the performance cycle. This process yields satisfactory results in terms of goal setting as both parties have equal opportunities at setting goals.

#### **Section D: Satisfaction with performance rating and bonus payment**

PMP makes employee performance more visible and more subject to obvious management control, encouraging workers to internalise organisational goals. Internalisation is imperative when former bureaucratic and tightly controlled labour becomes more autonomous and open-ended, allowing employees to use their discretion to benefit the organisation. Without this autonomy, the PMP largely exercises coercive behaviour rather than normative control (Tweedie, Wild, Rhodes, & Martinov-Bennie, 2018). Production that is more open-ended requires employees to exercise autonomy and discretion in the organisation's interests. Without substantive worker autonomy, the PMP largely exercises coercive rather than normative control (Tweedie et al., 2018).

According to Maimela and Samuel (2016), a non-negotiable and crucial core value for a successful academic career is work autonomy and academic freedom. Barret and Barret (2008) further emphasised the importance of work autonomy and cynicism for academics in terms of managerial practices that include performance management. The results of this article ( $x = 2.67$  and  $\sigma = 1.297$ ) indicated prevalent dislike among respondents who considered the PMP as a management tool to undermine their academic freedom and work autonomy. This outcome coincided with that of Pityana (2004), who emphasised that academics' roles and responsibilities have long been defined by work autonomy and academic freedom. However, such directives are now being dictated by other parties in terms of market and economic considerations. Respondents' attitudes towards their work were affected negatively where they perceived management to be in breach of their academic freedom and work autonomy (through the PMP). Results obtained in this study ( $x = 2.61$  and  $\sigma = 1.342$ ) supported this statement and could curb employee motivation.

Motivation is defined as the willingness to achieve organisational objectives. Organisations strive to create this willingness in order to achieve business results and increase organisational productivity. Therefore, managers need to play a role in creating opportunities that motivate employees to improve their performance over time (Bauwens, Audenaert, Huisman, & Decramer, 2017). To further motivate employees through the PMP, managers need to address skill deficits on an ongoing basis and tackle obstacles such as excessive workload, poor resources, or inadequate information by mitigating through deliberate work-design practices and setting goals and rewarding staff appropriately (Bauwens et al., 2017). Maimela and Samuel (2016) state the main contributor that favours the PMP, is its inborn ability to fairly distribute organisational rewards according to the equity theory. In the study, the performance bonus that is linked to goal achievement failed to motivate respondents as demonstrated by the statistical results ( $x = 2.86$  and  $\sigma = 1.343$ ). Employees may argue and perceive the PMP to be unfair in distributing its rewards to better performers. However, no statistical results could be found to confirm whether performance bonuses motivated poor performers to enhance their performance in order to receive a bonus in future. The statistical mean of  $x = 2.73$  and a standard deviation of  $\sigma = 1.276$  suggest that the performance bonus was no motivator in terms of striving for excellence.

In the petrochemical industry, the bonus forms a big part of the PMP as it drives certain behaviours that enhance the overall business performance. Employees are constantly reminded of the scorecard and what needs to be delivered in order to qualify for a lucrative bonus. How employees perform is directly linked to their annual increase and performance bonus.

Asamany and Shaorong (2018) define the performance management process as an approach by the organisation to deliver unremitting success by improving employee performance and considering team capabilities and individual contributions. The purpose of the PMP, according to the company guidelines of the petrochemical industry in which this study was done, includes identifying the work that is being done; developing direct actions to get the work done; improving overall performance; focusing on performance, linking rewards more closely to individual performance; and rewarding employees for their skills, expertise and their value proposition to the company (Company Guidelines, 2018). Possible barriers to the PMP, according to Barth and de Beer (2018), at organisational level could include lack of top management ownership and role modelling, insufficiently trained and skilled managers to

perform appraisals, lack of understanding of organisational culture, potential benefits of PMP not clearly defined, and implementation effectiveness being difficult to measure and improve.

The measuring instrument in question, developed by Maimela and Samuel (2016), targets the public sector in terms of institutions of higher learning in South Africa. The context of the present study is a petrochemical industry in the private sector. Gautman and Jain (2017) state that the motives and goals of the private sector are governed by different principles with unique groups that oversee their actions and procedures. Organisations in the private sector are more autonomous. However, they must answer to their customers, stakeholders and board of directors and investors. The public sector is not much different from the private sector as both strive towards achieving goals, whether micro or macro in nature (Gautman & Jain 2017). The biggest challenge faced by business organisations today is managing performance of their employees that is completely dependent upon employees' own commitment, competence, clarity of job-roles, ability and willingness to perform. If managed skilfully, the performance management process can serve as an effective tool in terms of employee development through well-planned practices and mechanisms (Gautman & Jain 2017). Based on the lack of employee involvement and feedback transparency in the entire appraisal process, traditional appraisal systems lack the mechanisms that fulfil the requirement for an effective organisation (Gautman & Jain 2017). In order to be successful, organisations should use a tool that can act as a basis for development and improvement plans, agreeing on what should be done in future in order to improve the organisation's effectiveness.

In view of the discussion above, Figure 1 provides a graphic alignment of the content of the subsections of Maimela and Samuel's (2016) measuring instrument and the strategic objectives and values of the petrochemical industry in terms of its PMP.

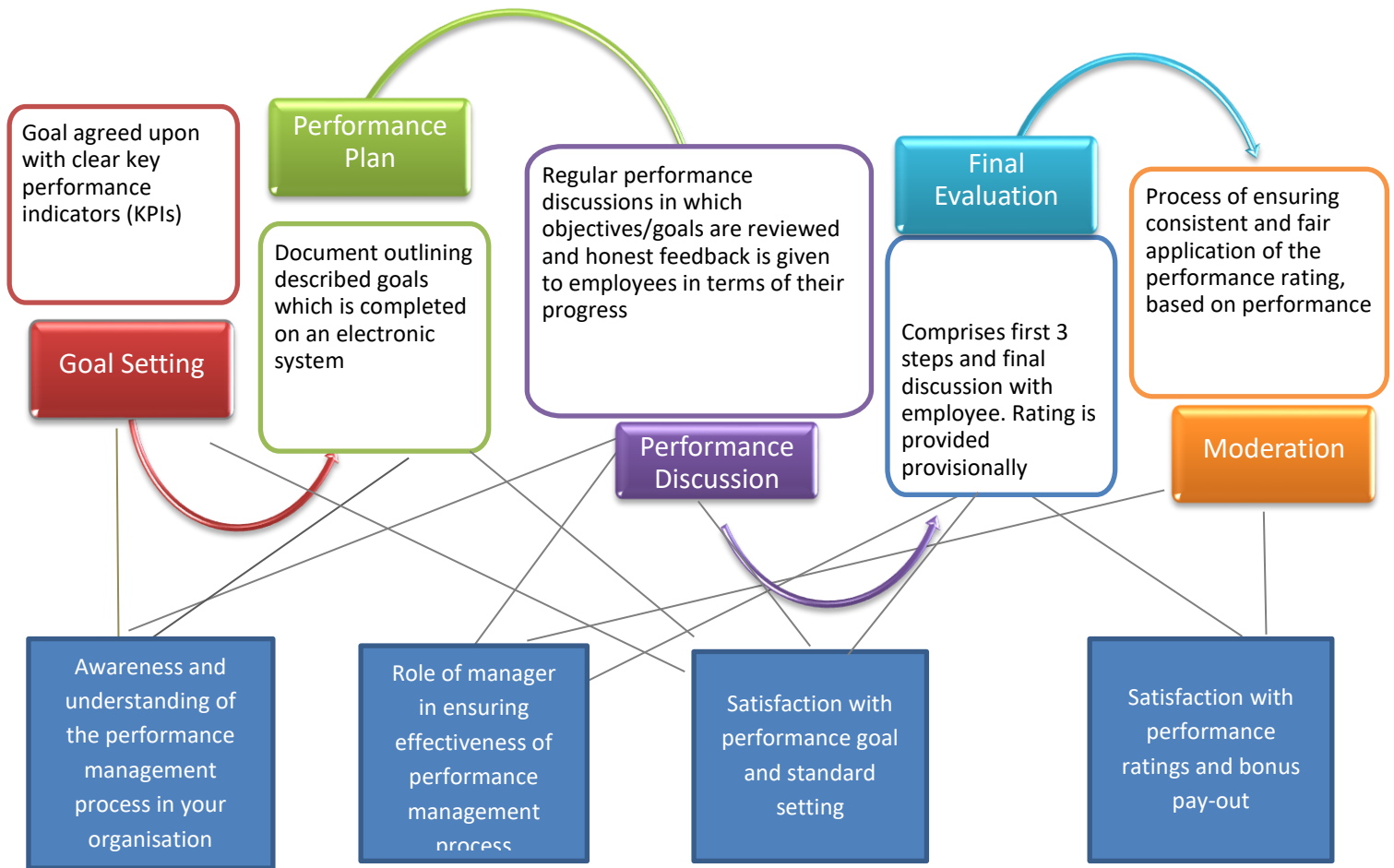


Figure 1: PMP aligned model. (Source: Author)

Figure 1 clearly illustrates that there is perfect content and construct alignment between Samuel and Maimela’s (2016) measuring instrument and the goals and values of the petrochemical industry’s PMP.

The second empirical phase will now provide a critical statistical analysis of the measuring instrument’s reliability for use in another context.

### Reliability

Reliability of a scale refers to the internal consistency of the scale items and is represented by Cronbach’s alpha coefficients. Values starting from 0.70 and higher are indicative of good internal consistency. The higher the alpha, the more reliable the test Van der Elst, Witte & De Cuyper (2014). In Maimela and Samuel’s instrument, comprising 29 items, each item measured on a 5-point Likert-scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The questionnaire items were derived from extensive review of performance management literature

in order to achieve content validity. For the purpose of this study, performance management system had been changed to performance management **process**. Section A (awareness and understanding of the PMP) comprises 7 items (e.g., My leader defines and communicates the purpose of the PMP to employees”), with a Cronbach alpha coefficient of 0.82; Section B (the role of managers in ensuring the effectiveness of the PMP) comprises 10 items (e.g., “My leader explains my rating outcomes to me”), with a Cronbach alpha of 0.91; Section C (satisfaction with performance goals and standard setting) comprises 8 items (e.g., “My performance rating is based upon agreed goals”), with a Cronbach alpha coefficient of 0.69; and Section D (satisfaction with performance rating and bonus) comprises 8 items (e.g., Fair criteria are used in calculating performance bonuses”), with a Cronbach alpha of 0.90. A reliability threshold of 0.70 is recommended by Nunnally (1978); thus, establishing internal consistency of the instrument.

The Cronbach alpha for Section C is slightly below 0.70 at 0.69, yet close enough to be acceptable (De Souza et al., 2017). The slightly below-the-threshold alpha could cause reliability problems in future studies and in other contexts, though. In order to seek greater clarity in terms of whether the factor structure as proposed by Maimela and Samuel (2016) could be confirmed for a sample in a South African petrochemical industry, descriptive statistics and a confirmatory factor analysis were done.

### *Descriptive statistics*

The data set was checked for skewness and kurtosis in SPSS 25 (IBM Corporation, 2017). Although some items showed normal levels for skewness and kurtosis, certain items were found to exhibit high levels of both. It was therefore decided to use the robust maximum likelihood estimator, allowing for skew and/or kurtotic data, for further analysis in Mplus 8.3 (Muthén & Muthén, 1998-2018). The descriptive statistics for the proposed factors, as calculated in SPSS 25, are provided in Table 1. Levels of composite reliability for the factors were calculated in Mplus 8.3 and are also included in the table.

**Table 1***Descriptive Statistics and Reliability Coefficients*

Variable	M	SD	<i>p</i>
Performance management process:			
1. Awareness and understanding (AU)	3.62	0.82	0.85
2. Role of manager in ensuring effectiveness (RM)	3.71	0.66	0.77
3. Satisfaction with performance goals and standard setting (PG)	3.70	0.64	0.84
4. Satisfaction with performance ratings and bonus payment (PR)	3.20	0.80	0.84

*Confirmatory Factor Analysis (CFA)*

Three possible factor structures of the performance management questionnaire (PMP) were tested to identify the best fitting structure for the data:

1. Model 1: Four first-level latent variables – awareness and understanding (AU; six observed variables); role of manager in ensuring effectiveness (RM; nine observed variables); satisfaction with performance goals and standard settings (PG; seven observed variables); satisfaction with performance ratings and bonus payment (PR; seven observed variables) – combined to form one second-level variable, performance management (PM).
2. Model 2: Four first-level latent variables only – AU (six items), RM (nine items), PG (seven items), PR (seven items).
3. Model 3: A one-factor model with PM measured by 29 observed variables.

The results are provided in Table 2.

**Table 2***Fit Statistics of Original Confirmatory Factor Analyses*

Model	AIC	BIC	ABIC	$\chi^2$	<i>df</i>	MLR-adjusted $\chi^2$	RMSEA	CFI	TLI	SRMR
Model 1	13022.27	13321.96	13033.67	925.84	373	1242.11	0.09	0.75	0.73	0.09
Model 2	13016.15	13322.42	13027.80	926.16	371	1231.97	0.09	0.75	0.72	0.09
Model 3	13357.57	13644.09	13368.47	1158.89	377	1585.48	0.10	0.64	0.62	0.10

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ABIC = Sample-size Adjusted BIC;  $\chi^2$  = chi-square; *df* = degrees of freedom; MLR = Maximum Likelihood (Robust) estimator; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual

Model fit was assessed according to different fit statistics (Byrne, 2012; Wang & Wang, 2012). ABIC is an adjusted BIC-value specifically for the sample size; therefore, only AIC and ABIC values were compared to find the lowest numbers. Chi-square had to be adjusted due to the use of the MLR-estimator for the values to be directly comparable (MLR-adjusted  $\chi^2$ ). Again, the lowest value was accepted as better fit. The RMSEA (cut-off < .08) and SRMR (cut-off < .08) values were not acceptable, and neither were the CFI and TLI values (cut-off > .90).

Even though model fit was not acceptable overall, this comparison was essentially to determine which factor structure showed the best fit to the data and could therefore be used for development of a good fitting model in Chapter 3. According to the comparisons of AIC and ABIC, it was clear that Model 2, with four first-level variables only, was the best model to use for this purpose.

The output of Model 2 was inspected for the following possible issues, in this order:

1. *Factor loadings*. Depending on the strictness of the evaluation, different cut-off values could be used. In this instance, a balance was preferred; therefore, the cut-off for factor loadings were set at .35: items with a smaller value would be removed from the analysis as not adding value to the measurement of that factor (Field, 2018).
2. *Modification indices (MIs)*. A specific cut-off value is not available, but items that indicated an MI of higher than 20.00, were considered. High MIs show commonality between the specific items. If the two items are from the same factor, it would make sense to allow their error variance to correlate. However, if the two items are from separate factors or the MI is between an item and a first-level latent variable, it could

be indicative of a problematic item that does not measure what it was intended to. The item would then need to be evaluated in terms of other existing MIs, or issues with residual variances (Byrne, 2012; Wang & Wang, 2012).

3. *Residual variances (RVs)*. Any RVs above 2.58 or below -2.58 were considered as possibly problematic. A positive RV between items from different factors show that the items are measuring the same construct; and a negative RV between items within a factor shows that they are measuring different constructs. If an RV value could not be calculated, the normalised residuals are used as an indication of the level of the possible RV. Normalised residuals above 2.00 are usually indicative of a problematic RV (Muthén & Muthén, 1998-2018). An item with many RVs might be removed from the model.

## **Conclusion**

The aim of this manuscript was to validate the psychometric properties of a South African measuring instrument on the performance management process for use in the petrochemical industry. The instrument of Maimela and Samuel (2016) had high content validity with a consolidated Cronbach alpha of 0.83, aligning perfectly with the objectives and values of the PMP in the petrochemical industry. It also revealed construct validity, i.e. being scientifically underpinned by theory on performance management; furthermore, all variables represented the construct being measured. Thus, its external validity allowed for replication in another context and the instrument passed the test for validity.

Maimela and Samuel's (2016) study provided a general coherent literature framework within which to structure the measuring instrument items. However, a limitation in terms of validating the psychometric properties of their performance management measuring instrument, was the lack of results provided in their published manuscript. The authors utilised a one-sample t-test only which was sufficient for the purpose of their study. It is, however, unclear if the authors did make changes to items that did not yield satisfactory results or indicated problems in terms of the pilot test results, as these were not published. The researcher, however, conducted a confirmatory factor analysis to determine if items used in the instrument had good validity measures and if each sub-scale had good inter-item correlation. The confirmatory factor analysis confirmed that the measures of the constructs in the measuring instrument were consistent with the researcher's understanding of those constructs. No item was removed from

the questionnaire and no error variances were allowed to correlate; thus, no changes were made to the original data of the PMS (Maimela & Samuel, 2016). The psychometric properties in Maimela and Samuel's (2016) performance management measuring instrument were valid and reliable. The sample items in the four sections of this instrument were extremely relevant to the PMP in the context of the petrochemical industry's objectives and values. Therefore, the measuring instrument was valid to be utilised in further research in the petrochemical industry (Chapter 3).

Performance management in a volatile and turbulent labour market such as in South Africa can provide managers with practical guidelines on the implementation and successful management of performance management processes as a reward mechanism towards retaining talented employees and achieving organisational objectives. Future research could consider validation and testing of the current measuring instrument towards advancing existing knowledge in the field of performance management processes. Due to its strong theoretical grounding and relevant content, future research using this measuring instrument could even be expanded to other contexts within a South African framework.

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**CHAPTER 3**

**ARTICLE 2**

Manuscript 2, titled “Authentic leadership, performance management process and work engagement in a petrochemical organisation”, is aimed at investigating authentic leadership and its role in the performance management process and work engagement in a petrochemical industry.

This manuscript has been earmarked for publication in the *Journal of Psychology in Africa* and acknowledges the following contributions:

- Conceptualisation of the study: A Mohlamme and E Diedericks
- Literature search: A Mohlamme
- Reviewing of literature: A Mohlamme
- Collection of data: A Mohlamme
- Analysis of data and statistical results: A Mohlamme, E Bothma and E Diedericks
- Writing of manuscript and article: A Mohlamme
- Comments and guidance: E Diedericks

## **Authentic leadership, performance management process and work engagement in a petrochemical organisation**

### **ABSTRACT**

The petrochemical industry is currently facing severe challenges due to an increase in capital cost, including duplication of investment allowances; correction of certain contracts and variation orders; forecasted improvements that were not realised; and productivity losses. The industry takes shortcomings very seriously; taking measures to improve and ensure that all live according to company values. The industry leaders want trust to be restored; therefore, they have embarked on new leadership to drive the organisational strategy. The purpose of this study was to investigate the role of authentic leadership and its relation to the performance management process and work engagement. A cross-sectional design was utilised ( $N = 225$ ). A biographical questionnaire, Authentic Leadership Inventory, Performance Management Process and Work Engagement Scale were administered to collect data from participants. The main findings of the study indicated that there is a positive relationship between authentic leadership and performance management (statistically significant with large effect) and there is also a positive relationship between authentic leadership and work engagement (statistically significant with small effect). No relationship could be found between work engagement and the performance management process. The study further tested for moderation and indirect effects, but no moderation/ indirect effects could be found for the relationship between authentic leadership, performance management process and work engagement.

**Keywords:** Authentic leadership, performance management process, performance appraisal, work engagement, trust, petrochemical industry

## INTRODUCTION

Globalisation has increased competition in the market, which forces every organisation to improve and concern itself with employee performance in order to gain a competitive advantage. As technology grows and advances, it becomes easier to enter the global market, increasing challenges to existing firms by giving easy entry and exit to new ones. Therefore, the only surviving companies are those that focus on people knowledge and skills internationally and nationally (Zafar, Memon, & Khan, 2018). Mining companies, which form part of the petrochemical industry in South Africa, are facing tremendous financial constraints, due to incessant deficits in terms of frontline and professional skills; thus, further adversely affecting operations (Maximo, Stander, & Coxen, 2019). As experienced personnel retire or leave, the remaining workforce experiences increased pressure due to the loss in supply of frontline and supervisor skills. This affects production output, quality and safety directly, with overhead costs escalating (Maximo et al., 2019). These corporate meltdowns call for organisational leaders who have high moral standards and integrity that can provide direction and meaning to their subordinates' work and the organisation (Roncesvalles & Sevilla, 2015). According to Maximo et al. (2019), transparent and open leaders are deemed consistent in their actions, as their actions affect others. Furthermore, they should be aware of their internal and external influence and organisational processes. When they possess these behaviours, subordinates are likely to identify with organisational goals and diminish challenges. Supervisors that possess the necessary skills, abilities and competencies, facilitate growth and productivity within the organisation, leading to increased output, and resulting in work engagement and trust in the organisation (Maximo et al., 2019).

It is, therefore, important that leaders apply the right kind of leadership that will enable a sense of well-being for employees, both in the private and public sectors; consequently, increasing employees' performance and work ethic behaviour. In the petrochemical industry, it has been realised that recent events such as the restructuring/retrenchment in 2014, low oil price response plan, and increased capital costs have placed additional financial pressure and challenges, creating a significant amount of uncertainty in the organisation. Hence, the leadership of the organisation has highlighted the importance of creating the right culture and control environment where open and transparent dialogue is encouraged. This dialogue can only take place through the performance management process as it entails all key deliverables in mitigating these current organisational challenges. Therefore, leaders need to change their

conduct and set the tone for the organisation through an engaged workforce. This fully aligns the ongoing culture transformation and aspirational culture. Organisational culture remains imperative in terms of solving problems, and, through an integrated performance management process, authentic leadership and engaging with people more humanely, business results can be improved (Company Internal Document, 2018). Therefore, many managers and leaders have embarked on authentic leadership (Bordei, dos Santos, Gonçalves, & Sousa, 2019).

George (2010) distinguished five dimensions of authentic leadership, namely passion, values, relationships, self-discipline and heart. Authentic leaders possess the following characteristics, namely they comprehend their purpose, practise concrete values, form connected relationships, exhibit self-discipline, and lead with the heart (George, 2010). Most of the authentic leaders are not born that way; they acquire their skills and qualities over a period of a lifetime. Authentic leaders lead with their hearts and learn from their own and other people's experiences, remaining true to their values and convictions (Covelli & Mason, 2017). This is the main reason why this study embarked on this style of leadership as it speaks to the core values and mission of the petrochemical industry that has recently embarked on the development of leaders and their skills.

As a multi-dimensional leadership theory, authentic leadership has similarities with transformational and several other leadership theories, including ethical, charismatic, spiritual and servant leadership. Servant leaders put the goals and needs of others before their own, whilst transformational, servant and authentic leadership all share a moral component (Covelli & Mason, 2017). The major difference between these leaderships, however, is that servant leaders' primary goal is to serve; ethical leaders desire to be ethical; charismatic leaders seek to be charming; whereas authentic leaders strive above all else to be authentic. Therefore, authentic leaders are not fixed in their traits or style; they incorporate various behaviours and skills that serve a specific context (Covelli & Mason, 2017). Thus, it is evident that authentic leadership is more holistic in its approach and fits better with the petrochemical industry that also follows a holistic approach, including its performance management process.

## LITERATURE REVIEW

### Authentic Leadership

Leadership is deemed to be the main driver of organisational success; therefore, it is important to determine which leadership technique is the most effective for organisations. The leadership style which an organisation adopts contributes to the success or failure of a business, as it will either positively or negatively influence the actions of the employees (Donachie, 2017). Due to the importance of the leadership style on the success of the organisation, it is essential to determine the influence that authentic leadership has on employee behaviour and performance in the organisation. Therefore, authentic leadership has been described as a solution to the current leadership problems that organisations are facing (Donachie, 2017). According to Yeşilkaya and Aydın (2016), authentic leadership (AL) is a kind of leadership that encompasses inspiration, promoting positive psychological potential through emphasising moral and ethical behaviour. This is also seen in the petrochemical industry in which this study is conducted, as there is a drive towards change in leadership as new leadership competencies have been established and leaders are trained to be multipliers and not diminishers.

Authentic leaders are true to themselves and what they believe in, making them genuine in their approach. There is growing evidence that authentic leadership is desirable and effective in advancing human capital and achieving positive and enduring outcomes in organisations (Yeşilkaya & Aydın, 2016). According to Ribeiro, Duarte, and Filipe (2018), authentic leadership consists of four components, namely *self-awareness* or the degree to which leaders understand their strengths; weaknesses; values, beliefs and emotions, as well as how leaders influence others. The second is *relational transparency*, which is presenting leaders' authentic selves and sincere feelings, emotions and thoughts to followers. The third is a *balanced processing* of information in which leaders objectively analyse all relevant information before making decisions, soliciting views that question their own positions. The last component is an *internalised moral perspective*, meaning that authentic leaders are guided by moral values and standards, and their behaviours and decisions are consistent with internalised values, as opposed to group, organisation or societal pressures (Avolio & Gardner, 2005; Avolio & Gardner, 2004; Gardner, Avolio, Luthans, & Walumbwa, 2005; Shamir & Eilam, 2005; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008).

According to Gilla, Gardner, Claeys, and Vangronsvelt (2018), authentic leadership describes the relationship of a leader with others in the work environment. A key feature of authentic leadership is that it challenges traditional views of leadership as a top-down process of influence where followers align with and enact the vision of the leader (Avolio & Gardner, 2005; Gardner et al., 2005). It promotes empowerment by making room for authenticity of followers, HR business partners and higher management. This notion is also true in the researcher's study where the petrochemical organisation has been restructured, removing levels by creating one bottom line. Authentic leadership allows for alternative "truths" from employees; therefore, co-constructing the vision of the organisation and creating a sense of shared identity (*balanced processing*) (Gilla et al., 2018). It is believed that through connected relationships with employees, leaders can build trust and commitment as they will be able to speak openly about their weaknesses, blind spots, and vulnerabilities (*self-awareness*) and, in so doing, permit others to do the same by engaging (Tharpe, 2017). According to Omer (2017), authentic leaders objectively consider all the facts to engage in ethical and transparent decision making; therefore, they utilise their own moral capacity and resilience (*internalised moral perspective*) to confront and deal with ethical dilemmas and make moral decisions. Making decisions in a fair and moral manner is crucial, given the nature of change in social, political and business environments. The nature of these environments makes it important to rely on leaders who are genuine and possess moral attributes (Omer, 2017). Authentic leaders thus have a significant impact on both their subordinates and the organisations they lead (Omer, 2017).

Recent studies highlighted that employees' positive attitudes, behaviours and work outcomes, such as organisational commitment, job satisfaction, trust, creativity, work engagement and performance, could be influenced by authentic leadership (Yeşilkaya & Aydın, 2016). Authentic leaders are entrusted to exhibit various performance management activities, playing a vital role in goal setting and providing performance feedback (*rational transparency*) (Yeşilkaya & Aydın, 2016). In the petrochemical industry, leaders are entrusted with full accountability for the performance management process (PMP) - from the beginning until the end of the PMP cycle that runs for 12 months; hence, leaders are constantly given refresher training on how to handle the PMP in the most effective way.

In line with the theory of ability, motivation and opportunity (AMO) by Appelbaum, Bailey, Berg, and Kalleberg (2000) and Boxall and Purcell (2003), leaders are expected to have the

necessary knowledge and skills (i.e. ability) to understand, for example, how an employee's performance is supposed to be appraised. Secondly, leaders should be willing to follow the organisation's procedures and policies related to performance management (i.e. motivation). Thirdly, leaders should experience sufficient opportunity to fulfil their performance management responsibilities. This implies that their role in implementing performance management processes should be compatible with their other organisational roles (Van Waeyenberg & Decramer, 2018). This is also a key contributor in the petrochemical industry as leaders are expected to execute the PMP accordingly as stipulated in their key performance areas (KPAs) of the organisation's strategy and performance. Therefore, leaders are deemed to be instrumental in the performance management process of the organisation.

### **Performance Management Process**

According to Van Waeyenberg and Decramer (2018), human resource management practices that are designed to improve the performance of employees and thereby the performance of the organisation, are built on solid performance management processes. These practices include goal setting, feedback, coaching and performance appraisal. The performance management process (PMP) is a continuous process of categorising, assessing, and developing individual and team performance and aligning this performance with strategic organisational goals (Van Waeyenberg & Decramer, 2018). Organisations are specifically instructed to set out strategic objectives that link performance budgets, sectional business plans and individual performance goals to the strategic process (McGeough & Beck, 2016). Through the development of appropriate performance targets/indicators, setting multiple goals can be deemed difficult due to many stakeholders being involved and vague goals. Furthermore, even where there is agreement on performance targets/indicators, they may be poorly linked to goals (McGeough & Beck, 2016). Therefore, it is very important that the initial discussion meeting between the line manager and employee takes place and clear goals are set and agreed upon. This step takes place at the beginning of the performance cycle in the petrochemical industry where employees are engaged to go through planning and review of their performance expectations, including both the behaviours they are expected to exhibit and the results/standards they are expected to achieve during the upcoming rating cycle (Woyessa, 2015).

Osmania and Ramolli (2012) stated that in order to assess employee performance as successful or unsuccessful, criteria are needed to determine the level of contribution to the realisation of organisational objectives. These standards must be clear, understandable, measurable and

communicated by line managers to employees. The performance management policy of Post Telecom in Kosovo and Albania's public institutions, applies the SMART (S – Specific, M – Measurable, A – Achievable, R – Realistic and T - Time bound) method as a standard performance evaluation (Osmania & Ramolli, 2012). The petrochemical industry also applies the SMART method in its performance management policy. It is part of the leader's role to ensure that the PMP takes place effectively, by constantly providing feedback whenever exceptional or ineffective performance has been observed, giving an indication of the satisfaction of performance goals and standards (Woyessa, 2015). Unfortunately, many managers are not well skilled in providing effective feedback in the organisation; thus, most managers frequently shy away from providing feedback, as they are ignorant in terms of how to deliver it effectively in ways that will curb employee defensiveness (Woyessa, 2015).

According to Gilla et al. (2018), a leader is unaware of his or her cognitive biases and gives employees a rating without actively paying attention to their perspectives or pursuing objective data. When sitting in a meeting, leaders will disadvantage employees for their own personal gain. Deloitte conducted a study on the performance management process, finding that close to 2 million hours were spent annually on completing forms, holding meetings, and creating ratings (Buckingham & Goodall, 2015). The study further revealed that the hours spent were mainly eaten up by leaders' discussions behind closed doors about the outcomes of the process (Buckingham & Goodall, 2015). This process, known as moderation in the petrochemical industry, takes place at the end of the cycle in June where each line manager has a robust discussion about his or her subordinates, reviewing their overall performance rating. Through a process of psychometric criteria, performance ratings continue to be evaluated vastly, including all levels of rating (i.e. elevation or leniency), rating accuracy, and congruence/agreement between raters. Thus, it became popular to anchor different rating levels with work behaviours (Pulakos, Mueller-Hanson, & Arad, 2018).

Only 11% of the performance review meeting component of the PMP has been examined in recent empirical research. This research mainly emphasises the interactions between manager and employee, frequently applying fairness. It was thus discovered that such meetings positively predict fairness perceptions (procedural and interactional), but only when the meeting was viewed as helpful, and, when experienced as unhelpful, it actually offended perceptions of fairness (Schleicher, Sullivan, Darel, Hargrove, & Barros-Rivera, 2018). According to Woyessa (2015), the performance review session should not have any surprising

elements as managers convey ratings, narratives and rationale for the evaluation given and bonuses paid to employees.

In this study, talent management is part of the performance management process and the industry in question follows the philosophy of having the right talent in the right place at the right time, intensifying performance accordingly. This is based on policy design and guiding principles that advocate:

1. Providing strong stimuli for employee attraction, motivation and retention;
2. Establishing a strong relationship between pay and performance;
3. Reinforcing performance targets at individual, team and operating model entities;
4. Embracing reasonable differentiation in remuneration for purposes of rewarding high performing employees, attracting and retaining scarce skills and promoting individual diversity; and
5. Positioning the industry as a preferred employer in the markets within which it operates by strengthening the employee value proposition (Company Sustainability Report, 2018).

The petrochemical industry has an established performance management philosophy approach that is seen to be an enabler and framework for a high-performance culture where every employee has a meaningful job and understands his or her expected output from the job. It further states that a consistent and transparent application of the PMP results in fairness and parity across the group, supporting work engagement, enablement and motivation. Finally, the philosophy emphasises that a culture of regular, honest and open discussions in setting goals and measuring performance goals, forms a pre-requisite for an effective performance management process (Company Policy, 2015). Regular feedback is a large component of the PMP as it is strongly believed that if employees are in the right job, they are likely to perform and be engaged. This also contributes as to why the performance management process and not performance management system is applicable to this study.

There is a distinct difference between the two concepts. In the study of Hutchison and Huo (2017), almost one third of employees said that their performance is not improved by the system and that bureaucratic systems seem to avoid performance management's most critical issues; HR practitioners need to think creatively about this problem rather than rely on the systems technique. This was also the realisation in the petrochemical industry, hence, the focus on a performance management process rather than performance management system. The

system is part of the performance management process. The process is broader as it includes employees' KPAs, goal setting discussions with line managers, feedback from line managers, development and training, and talent management (succession planning and retention strategies). Once these actions have been discussed and there is an agreement between line manager and employee, the system part of the PMP comes to life. All actions are captured and tracked off the live system that runs for a period of 12 months (performance cycle of petrochemical industry, June to June).

The PMP in the petrochemical industry is seen as an interactive and integrated process that involves human interaction. Therefore, the system can never replace the process and research has shown the importance of effective communication (interaction) and solid manager-employee relationships as levers for high-performance and work engagement (Pulakos et al. 2018).

### **Work Engagement**

According to Chan, Kalliath, Brough, O'Driscoll, Siu, and Timms (2017), work engagement has become a key organisational success factor as it is able to inspire employees' satisfaction, loyalty and productivity. It is also known to foster customer satisfaction, company reputation and overall stakeholder value. This speaks directly to the petrochemical industry's recently refreshed values stating that it delivers its promise to customers, shareholders and other stakeholders and can be trusted to deliver the right quality at the right time, going beyond what is expected to ensure that customers and stakeholders are satisfied (Company Internal Document, 2018). Therefore, the petrochemical industry strives to have engaged employees who constantly exhibit three types of behaviour, namely speaking positively about the organisation to fellow coworkers, potential employees and customers; by demonstrating the desire to be a member of the organisation despite other external employment opportunities; and finally, contributing extra time, effort, and initiative towards organisational success (Schaufeli, 2013). Therefore, the petrochemical industry wants its members to view it as employer of choice and best place to work.

Based on Kahn (1990), engaged employees are infused and connected to their work roles - physically, cognitively and emotionally. They constantly experience positive emotions; good health; and they create job resources that focus their energy on achieving organisational goals and success by transferring their engagement to the people around them. The cognitive

dimension of work engagement shares employee beliefs about the organisation, its leaders and working conditions (Soares & Mosquera, 2019). The emotional aspect relates to employees' feelings and attitudes towards the organisation, leaders, and working conditions. Finally, the physical aspect creates value-add for the organisation and involves deliberate and voluntary work of employees to increase their work engagement, leading to more accountable tasks (Soares & Mosquera, 2019). In recent years, researchers have reflected on work engagement that is drawn from the early seminal work of Kahn (1990), by considering it as a significant motivational issue that leads to exposing employees' full potential; therefore, increasing the prospect of success and sustained higher levels of performance (Soares & Mosquera, 2019). Engaged employees are constantly reluctant to detach themselves from work as they are willing to persist through adversities (Gao, Zhang, & Huo, 2017).

It is therefore important to have engaged employees in order to gain a competitive advantage and desired outcomes, irrespective of the difficulties and challenges in the workplace. Work engagement is valuable for both the workers and the organisation as it influences how employees work and achieve their performance goals (Rahman, Rehman, Imran, & Aslam, 2017). According to Chan (2018), work engagement motivates employees to work enthusiastically, energetically and hold more accountability as part of their work. Literature has indicated that engaged employees demonstrate higher levels of productivity, competence and a sense of personal achievement in their work. They tend to take initiative and persist with challenging and demanding tasks; and on the opposite side of that, employees who are not engaged in their work tend to exhibit less commitment and are more likely to exhibit turnover propensity or actual turnover (Victor & Hoole, 2017). Saks (2006) provided an extensive review of studies on work engagement and concluded that work engagement negatively influences employee turnover behaviour (Ali, Lodhi, Orangzab, Raza, & Wasif, 2018). Another study by Schaufeli and Bakker (2004) proved that job resources increase employee motivational levels, thus making them more engaged in their work and reducing employee turnover. Likewise, leaders are prone to retain workers that are deemed to be highly engaged in their work and that yields great returns for the organisations as well.

Robinson and Morrison (1995) emphasised the negative impact of work engagement on employees' turnover rate, citing the social exchange theory (SET; Blau, 1964) as root. This theory is based on reciprocity or mutuality, meaning that when one person contributes, he or she expects something in return. Organisations also operate in the same way; they give

employees job resources and facilitate them by improving their work environments. In return, employees are required to devote their energy and efforts to the organisation (Ali et al., 2018). Work-engaged employees are twice as productive as their less engaged counterparts; their focus is to thrust the organisation forward by working with passion and innovation. Therefore, human resource managers strive towards enhancing employees' work engagement in order to improve organisational productivity and success; thus, increasing retention, decreasing absenteeism, improving productivity, and enhancing personal well-being (Du Plessis & Boshoff, 2018). Research has shown that employees' work engagement is positively linked to job performance results, obtained through supervisors' rating of task performance and contextual performance. Organisational factors for employee work engagement include work-related development opportunities that empower the PMP (Sekhar, Patwardhan, & Vyas, 2018). Employees feel valued when they recognise that their organisation is sincerely committed to supporting their careers.

Based on the social exchange theory, when organisations are perceived to be in support of employees' careers, employees are likely to reciprocate by investing more energy, enthusiasm and time into their work (Gupta, 2019). Furthermore, employees feel vested in their work; hence, they exhibit greater work engagement when they work for a supportive organisation. This supports the notion that there is a positive link between perceived career support and work engagement (Gupta, 2019). Poon's (2013) study explicitly explores the relationship between perceived career support and work engagement. In a study conducted in Malaysia on 115 full time and part-time graduate students, it was found that there is a positive and significant relationship between perceived career support and work engagement (Gupta, 2019).

According to Chan et al. (2017), highly engaged employees are claimed to be highly rated during the performance management process; thus, they are likely to perform for they have high levels of task and contextual connectivity to their work, performing their roles to an optimal level due to their ability to work with others. This ability to work with others is very instrumental to the petrochemical industry and is seen as a key measure of success. The industry drives team collaboration as part of a high-performance culture.

## **Relationship between Authentic Leadership, Performance Management Process and Work Engagement**

Authentic leaders are considered fundamental, especially in the post-modernist organisation, as they have the skill and motivation to work with HR practitioners, other line managers, and subordinates towards implementing HR practices. They are driven to maintain integrity between intended, promoted, and implemented practices that ensure that employees perceive integrity in the implementation of HR practices (Gilla et al., 2018). Integrity is one of the most important values within the petrochemical industry and employees, including leaders, are expected to live and demonstrate this behaviour that encourages to “walk the talk” and do the right thing without needing to be checked or supervised; to speak up when others do not; to consider others as equals and treat them with respect (Company Internal Policy, 2015).

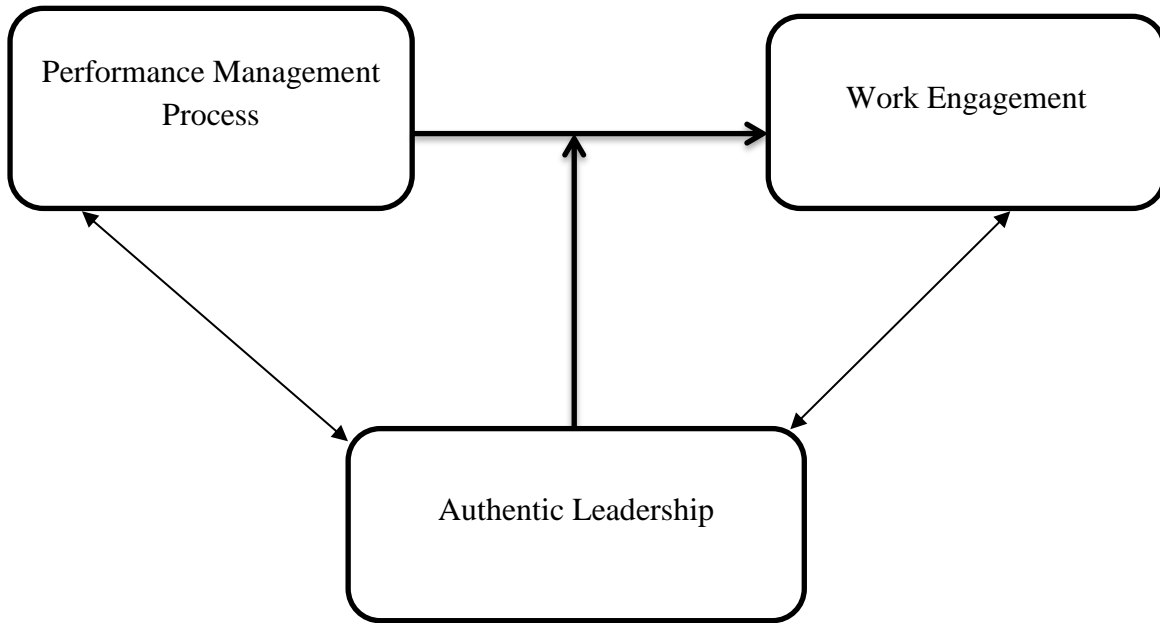
Authentic leaders are known to have personal capabilities and strengths to implement intended HR practices efficiently. These are linked to leader integrity and follower identification; thus, improving the quality of relationship with the leader (Gilla et al., 2018). This contributes towards closing the gap between intended and actual practices; also, on how leaders may influence employees’ perceptions of HR practices such as the PMP - a field that has received little attention in the world of work. Recent literature states that authentic leadership in line managers can be further reinforced through HR practices such as the PMP and promotion (Gilla et al., 2018). Line managers displaying authentic leadership behaviours will likely be rewarded with a positive assessment, as they are set on attaining results, rather than on the outcome (i.e., the results themselves) of the PMP practice (Gilla et al., 2018). They continuously assist followers in realising their true potential through sustained performance and building trust and openness. Followers are inspired to put in more effort into their work by authentic leaders who are true to their values and who show the highest level of moral conduct; thereby increasing their work engagement levels (Chaudhary & Panda, 2018).

In today’s organisation, it is vital to invest in the development of authentic leadership as research has shown evidence of a positive relationship between authentic leadership and work engagement (Scheepers & Elstob, 2016). In a study conducted by Alok and Israel (2012), a positive relation was found between authentic leadership and work engagement amongst 117 working professionals (Omer, 2017). Furthermore, a positive significant relationship was found between authentic leadership and employee work engagement in a multilevel study at a Slovenian manufacturing company (Chaudhary & Panda, 2018). In a study by Diedericks and

Rothmann (2014), it was found that poor relationships between employees and supervisors are related to lower levels of engagement; hence, authentic leadership (Stander, De Beer, & Stander, 2015) and positive leaderships (Nel, Stander, & Latif, 2015) are significantly related to work engagement (Du Plessis & Boshoff, 2018). Success is solely not dependant on dynamic leaders; followers in the workplace are also expected to play their role in organisational success. Hence, research showed that authentic leaders contribute 20% to the organisation's success, with followers contributing an estimated 80% to organisational success (Du Plessis & Boshoff, 2018). This would highlight the importance of leadership and its impact on work engagement.

According to Chaudhary and Panda (2018), the expansion of work engagement is attributed to authentic leaders who assist followers in discovering their talents. These talents are utilised to create a better fit with the work goals, enriching employees' work and providing opportunities for developing rewarding relationships with co-workers and organisational benefits, which speak directly to the overall PMP. According to Robyn and Monga (2017), work engagement has many positive outcomes; hence, it is a crucial aspect for organisations. It has a substantial effect on employees along with organisations and leads to better job performance. Earlier studies have reported that work engagement assists in work-related outcomes, organisational success and financial performance. This is an indication that energetic and enthusiastic individuals are likely to be deeply engrossed in their work, leading them to higher levels of performance and loyalty (Robyn & Monga, 2017).

In view of the literature discussion, the model for this study can be illustrated as follows:



*Figure 1: Model of study.*

Based on the above literature, the following are hypothesised:

- *Hypothesis 1:* There is a positive relationship between authentic leadership and the performance management process.
- *Hypothesis 2:* There is a positive relationship between authentic leadership and work engagement.
- *Hypothesis 3:* Authentic leadership moderates the relationship between the performance management process and work engagement.

The model below indicates the constructs and factors of this study.

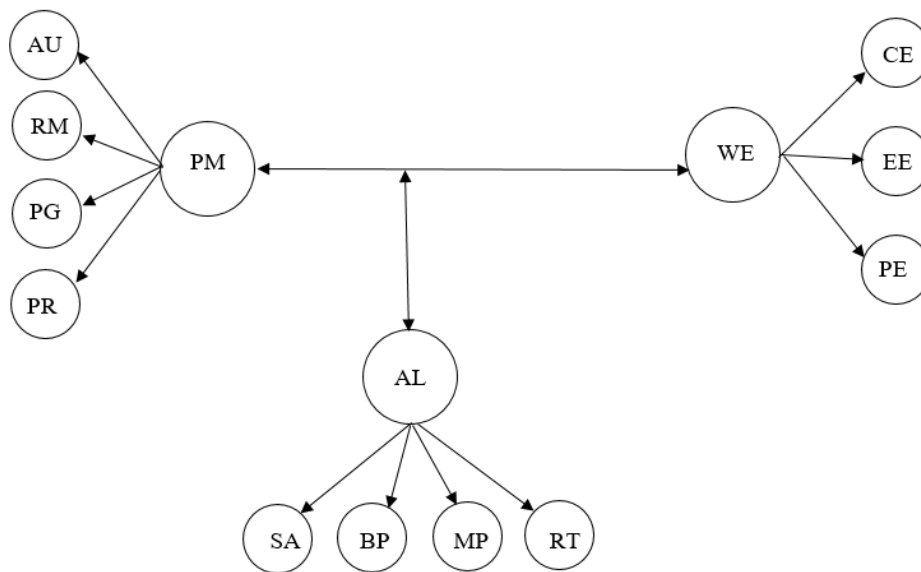


Figure 2. Model with its factors.

AU=awareness & understanding; RM=role of manager; PG=performance goal; PR=performance ratings; PM=performance management; AL=authentic leadership inventory; SA=self-awareness; BP=balance processing; MP=moral perspective; RT=rational transparency; WE=work engagement; CE=cognitive engagement; EE=emotional engagement; PE=physical engagement.

## Aim

The general objective or aim of this study is to investigate authentic leadership and its role in the performance management process and work engagement in a petrochemical industry.

## Method

### Research Design

In the study, a quantitative research approach was followed which involves testing objective theories by examining the relationship among variables through statistical procedure (Creswell, 2014). A cross-sectional survey design (i.e. collecting data from participants at a single point in time) was utilised to allow inferences to be made about the role of authentic leadership in the PMP and work engagement of employees in a petrochemical industry (Creswell, 2014).

## **Participants**

Ethical clearance (NWU-HS-2018-0049) was obtained via Optentia Research Focus Area at the North-West University's Vanderbijlpark Campus prior to conducting the study. Thereafter, the researcher sought approval from Exco and Human Resource Departments within the petrochemical industry. An electronic questionnaire was disseminated via myresearchsurvey.com database with an attached letter that stated the intent and purpose of the study. The letter emphasised confidentiality and stated that participation was voluntary, and participants could withdraw at any time. The researcher also provided a consent form with the questionnaire, as consent first had to be obtained before the researcher could use participants' personal information as per the Protection of Personal Information (PoPI) Act, 4 of 2013. The electronic questionnaire was disseminated to 1500 participants of which 225 responses were received back during the month of April 2019. The problematic matter of low response rate in quantitative studies has already been addressed as early as 2008 in a study by Baruch and Holton in which they stated that organisations are over-surveyed, causing them to become fatigued and resulting in failure to respond.

Table 1a displays the personal characteristics of the sample population.

**Table 1a***Personal Characteristics of the Participants (N =225)*

Item	Category	Frequency	Percentage
Gender	Male	130	58.8
	Female	91	41.2
Race	White	92	41.6
	African	109	49.3
	Coloured	6	2.7
	Indian	12	5.4
	Other	2	0.9
Age	21-30 years	18	8.0
	31-40 years	70	31.1
	41-50 years	80	35.6
	51-60 years	54	24.0
	60+ years	3	1.3
Marital status	Single	21	10.0
	Married	166	79.0
	Widowed	2	1.0
	Divorced	19	9.0
	Remarried	2	1.0
Home language	Afrikaans	74	35.6
	English	32	15.4
	Sepedi	10	4.8
	isiZulu	17	8.2
	Sesotho	33	15.9
	Setswana	17	8.2
	isiXhosa	6	2.9
	isiTsonga	6	2.9
	Tshivenda	5	2.4
	siSwati	7	3.4
	Other	1	0.5
Highest qualification	Matric / Gr 12	34	16.3
	FET N4-N6	14	6.7
	University of Technology diploma	29	13.9
	University of Technology degree	26	12.5
	University degree (3 years)	21	10.1
	University Honours degree	32	15.4
	University Master's degree	33	15.9
	University Doctorate	7	3.4
	Other	12	5.8

Table 1b displays the employment characteristics of the sample population.

**Table 1b**

*Employment Characteristics of the Participants (N =225)*

Item	Category	Frequency	Percentage
Job tenure	<10 years	62	27.6
	10-20 years	79	35.1
	21-30 years	59	26.2
	31-40 years	24	10.7
	>40 years	1	0.4
Function	Support	46	21.7
	Supply chain	20	9.4
	Commerce	7	3.3
	Tech support	39	18.4
	Operations	79	37.3
	Site services	21	9.9
Employment status	Temporary	1	0.5
	Permanent	206	98.1
	Fixed term	3	1.4
Hours worked per week	0-10 hours	8	3.8
	11-20 hours	1	0.5
	21-30 hours	2	1.0
	31-40 hours	57	27.4
	41-50 hours	125	60.1
	51+ hours	15	7.2

The sample population from Tables 1a and 1b consists of 225 employees within the petrochemical industry from Operations and Head Office. Most of the participants were Africans (49.3%) and males (58.8%), most of them based in Operations (37.3%), followed by Support (21.7%) and Tech Support (18.4%). The average age ranged from 41-50 years (35.6%), with the majority's home language as Afrikaans (35.6%), followed by Sesotho (15.9%) and English (15.4%). Most of the sample population is permanently employed (98.1%), with tenure between 10-20 years (35.1%), and with the majority in possession of a

matric qualification (16.3%), followed by a master's degree (15.9%) and honours degree (15.4%). The hours worked per week in the industry range from 41-50 (60.1%).

### **Measuring Instruments**

The following measuring instruments were used for the study:

*Biographical Questionnaire.* The biographical questionnaire was used to gather relevant biographical information of the participants in terms of age, race, gender, language, occupation and education.

*Authentic Leadership Inventory (ALI;* Neider & Schriesheim, 2011) was used to determine whether employees consider their leaders to be authentic. ALI is based on the same dimensions of the Authentic Leadership Questionnaire (ALQ; Walumbwa et al., 2008) which comprises four factors, namely self-awareness, relational transparency, balanced processing, and internalised moral perspective; yet having different items to the ALQ (Neider & Schriesheim, 2011). The ALI comprises 15 items, measured on a 5-point Likert-scale to which responses vary from 1 (*disagree strongly*) to 5 (*agree strongly*). Some examples of items include “My leader shows that he/she understands his/her strengths and weaknesses”, and “My leader uses his/her core beliefs to make decisions”. Cronbach's alpha coefficients indicated that the scale in general is reliable ( $\alpha = 0.74 - 0.85$ ; Neider & Schriesheim, 2011; Stander & De Beer, 2015).

*Performance Management System (PMS;* Maimela & Samuel, 2016) was used comprising four sections with 29 items; each item measured on a 5-point Likert-scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The psychometric properties of this newly developed measuring instrument by Maimela and Samuel (2016) was validated by Mohlamme and Diedericks (in press; refer to Chapter 2) to establish its validity and reliability for use in another context, such as the petrochemical industry. A confirmatory factor analysis was done and the means of variables were above average with standard deviations mostly below 1. The questionnaire is divided into four sections: Section A (awareness and understanding of the PMS) comprises 7 items (e.g., “The PMP assists me in expressing the value of my contribution to the organisation's goals”) with a Cronbach alpha coefficient of 0.82; Section B (the role of managers in ensuring the effectiveness of the PMS) comprises 10 items (e.g., “My leader applies the PMP in accordance with organisational policy”) with a Cronbach alpha of 0.91; Section C (satisfaction with performance goals and standard setting) comprises 8 items (e.g., “My rating is based on agreed goals”) with a Cronbach alpha coefficient of 0.69; and Section

D (satisfaction with performance rating and bonus) comprises 8 items (e.g., “The performance bonus motivates me towards achieving excellence”) with a Cronbach alpha of 0.90. A reliability threshold of 0.70 is recommended by Nunnally (1978); thus, establishing internal consistency.

The *Work Engagement Scale* (WES; Rothmann, 2010) was used to measure work engagement and comprises 9 items and is measured on a 7-point Likert-scale ranging from 1 (*never or almost never*) to 7 (*always or almost always*). The three components of work engagement, as conceptualised by Kahn (1990), were (a) cognitive engagement (e.g., “I feel I am able to contribute to new ideas”), (b) emotional engagement (e.g., “I get excited when I perform well on my job”), and (c) physical engagement (e.g., “I feel alive and vital at work”). The construct validity of the WES and the Cronbach’s alpha coefficients of the three subscales were  $\alpha = .80$  (physical engagement),  $\alpha = .82$  (emotional engagement), and  $\alpha = .78$  (cognitive engagement) (Rothmann, 2010).

## **Research Procedure**

### **Statistical Analysis**

In this quantitative study, descriptive statistics were calculated using SPSS 25 (IBM Corporation, 2017), and latent variable modelling was done in Mplus 8.3 (Muthén & Muthén, 1998-2018). Structural equation modelling (SEM) was used to test the hypotheses, involving two major steps, namely measurement model assessment and structural model assessment. Based on Kline (2011), SEM researchers should always test the full measurement model underlying the full structural model first and if the fit of the measurement model is found acceptable, then proceed to the second step of testing the structural model by examining its various fit indices (Huang, Ma, & Meng, 2017). The following fit indices were produced, namely Akaike information criterion (AIC), Bayesian information criterion (BIC), sample-size adjusted BIC (ABIC), chi-square ( $\chi^2$ ) with its degrees of freedom (*df*), the Tucker-Lewis index (TLI), comparative fit index (CFI), standardised rootmeansquare residual (SRMR), and rootmeansquare error of approximation (RMSEA). Acceptable model fit was indicated by CFI and TLI values above 0.90, RMSEA values below 0.08 (acceptable) or 0.05 (excellent), and SRMR values smaller than 0.08 (Byrne, 2012; Wang & Wang, 2012). Based on Kline (2011), the smallest AIC and BIC values indicate better model fit when comparing similar models. In

this study, more importance was attached to the ABIC-value, as it is specifically adapted to the sample size.

Cohen’s effect sizes were used to determine the practical significance of the results, with cut-off values of below 0.30 (small effect), between 0.30 and 0.50 (medium effect), and above 0.50 (large effect). A confidence interval of 95% ( $p < 0.05$ ) was used throughout the study to indicate statistical significance (Nolan & Heizen, 2010). A composite reliability coefficient ( $\rho$ ) was calculated with Mplus 8.3 (Muthén & Muthén, 1998-2018) to assess the reliability of the measuring instruments and a cut-off value of 0.70 and higher is seen as being acceptable (Raykov, 2009). Spearman’s correlation coefficients were used to measure the relationships between the proposed variables, as the data showed some indications of skewness and kurtosis. To investigate possible moderating effects of the ALI, it was combined with the predictor to form an interaction variable, on which the outcome was regressed.

## Results

The results of the study will now be reported.

**Table 2**  
*Descriptive Statistics, Reliability Coefficients, and Correlations*

Variable	M	SD	P	1	2	3	4	5
Performance management process (1-5)								
1. Awareness and understanding	3.62	0.82	0.85	-				
2. Role of manager in ensuring effectiveness	3.71	0.66	0.77	0.58 $\ddagger$ **	-			
3. Satisfaction with performance goals and standard setting	3.70	0.64	0.84	0.83 $\ddagger$ **	0.81 $\ddagger$ **	-		
4. Satisfaction with performance ratings and bonus payment	3.20	0.80	0.84	0.58 $\ddagger$ **	0.68 $\ddagger$ **	0.71 $\ddagger$ **	-	
5. Authentic leadership (1-5)	3.58	0.72	0.94	0.56 $\ddagger$ **	0.82 $\ddagger$ **	0.69 $\ddagger$ **	0.57 $\ddagger$ **	-
6. Work engagement (1-7)	5.45	1.07	0.92	0.15	0.10	0.15	0.08	0.19*

\*  $p < 0.05$

\*\*  $p < 0.01$

$\dagger$   $r > 0.30$

$\ddagger$   $r > 0.50$

Table 2 represents the descriptive statistics, including the means, standard deviations, composite reliability coefficients, and a correlation matrix. The standard deviation is a measure

of the amount of variation or dispersion of a set of values. A low standard deviation indicates that the values tend to be close to the mean of the set, while a high standard deviation indicates that the values are spread over a wider range (Hazewinkel, 2001). In Table 2, the means of all variables are seen to be above average with standard deviations mostly below 1. The composite reliability coefficients of the measuring instruments' underlying variables were considered acceptable, ranging from 0.77 to 0.94. According to Raykov (2009), composite coefficients have the same acceptable cut-off points as Cronbach's alpha coefficients, recognising values of  $\geq 0.70$  as acceptable.

Based on Table 2, highly statistically significant and positive relationships with large effects were found between the four factors of PMP and the variable ALI. Work engagement seemed to have no statistically significant relationships with any of the other factors, except with ALI (significant, but with a small effect). Hypothesis 1 (There is a positive relationship between authentic leadership and the performance management process) is therefore accepted. Hypothesis 2 (There is a positive relationship between authentic leadership and work engagement) is also accepted, as the relationship was found to be both significant and positive, even though it indicated a small effect.

### **Initial Possible Measurement Models**

A series of 27 possible initial measurement models were specified in order to find a model to which the data fitted best. No changes were made to the original data of each questionnaire (e.g., no items were removed, no error variances were allowed to correlate). The 27 models were constructed through the combination of the different possible factor structures of the three questionnaires. The PMP consisted of four first-order latent variables (AU, RM, PG, PR), combined to measure a second-order latent variable (PM). The structure could also be adapted to only include the four first-order latent variables (not measuring PM as such), or to measure PM as a first-order, one factor solution by all the items together (not including any underlying factors). In this way, the three questionnaires all have a possibility of measuring their constructs through three different factor structures. Thus, ALI could be measured as a second-order latent variable by its four underlying latent variables (SA, IM, BP, RT), only specifying the four first-order latent variables, or a one-factor solution could be specified. The same goes for WE with the only difference being that there are only three underlying latent variables.

All models, except three, gave a warning that the latent variable covariance matrices were not positively definite. This could happen due to more than one problem, amongst others a negative variance / residual variance for a latent variable or a correlation between two latent variables that is larger than 1.00. The fit statistics from these models were therefore not necessarily accurate and were not used further. The three models that could be used for comparison were models 9, 18, and 27. Their respective fit statistics are reported in Table 3. The three models contained the same factor structure for both ALI and WE – a one-factor first-order latent variable. The only difference was in the factor structure of PM: Model 9 contained the four first-order variables with a second-order latent variable; Model 18 consisted of only the four first-order variables; and in Model 27 PM was specified as a one-factor first-order latent variable.

**Table 3**  
*Fit Statistics of Initial Possible Measurement Models*

Model	AIC	BIC	ABIC	$\chi^2$	<i>df</i>	MLR- adjusted $\chi^2$	RMSEA	CFI	TLI	SRMR
Model 9	24453.52	25004.32	24478.39	2733.40	1318	3091.75	0.07	0.76	0.75	0.09
Model 18	24435.79	25013.14	24461.86	2703.17	1310	3058.09	0.07	0.76	0.75	0.09
Model 27	24797.75	25335.29	24822.03	3013.93	1322	3444.02	0.08	0.71	0.70	0.10

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ABIC = Sample-size Adjusted BIC;  $\chi^2$  = chi-square; *df* = degrees of freedom; MLR = Maximum Likelihood (Robust) estimator; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual

In a study by Van der Vaart (2016), it was found that a one-factor model of ALI consisting of 14 items fitted the data best in a developing country. The concurrent validity of the ALI in a South African context was confirmed by Snygans (2019).

In order to determine the best-fitting model, the AIC and ABIC values were considered: Model 18 produced the lowest of both fit indices. The  $\chi^2$  values could not be directly compared due to the use of the MLR-estimator. The correct  $\chi^2$ -values were calculated and reported (MLR-adjusted  $\chi^2$ ), and again Model 18 showed the best fit. Based on these results, Model 18 was deemed to be the best fitting model and was used for the development of a measurement model that would satisfy the requirements of good fit.

## Measurement Model

At this point Model 18 was renamed Model 1, the preferred measurement model. Through inspection of model results, the model was adapted through either the removal of items or adding correlated error variances. The process started with the evaluation of items' factor loadings. A cut-off value for factor loadings is somewhat subjective, depending on the level of strictness preferred. A stricter cut-off value would be 0.40; and a less strict value would be 0.30 (Byrne, 2012; Field, 2018; Wang & Wang, 2012). In this study, a cut-off point of 0.35 was utilised. Four items identified as not adding sufficiently to the factors they were supposed to measure were removed from the specified model one by one (RM item 11 ( $b = 0.02$ ), PG item 21 ( $b = 0.16$ ), and WE items 1 ( $b = 0.27$ ) and 3 ( $b = 0.31$ )).

Next, modification indices (MIs) larger than 20.00 were considered. According to Byrne (2012), 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 item content. High MIs between items from separate factors, or between an item and a factor, are considered problematic. However, if two items within the same factor are indicated as having a high MI, it is acceptable to include their error variance correlation in the model. Best practice prescribes that not too many be included; however, the acceptable number is arbitrary. Finally, only three sets of error variance correlated [PG: items 16 and 17 (MI = 21.57), PR: items 27 and 28 (MI = 25.98); and WE: items 6 and 7 (MI = 31.10)].

Residual variances (RVs) larger than 2.58 and smaller than -2.58 were then identified, considering whether the involved items were from the same or different factors. Items with the highest number of indicated RVs were again, one by one, removed from the model. The ALI factor lost items 7 and 11. From AU items 1, 2, 3, and RM items 7, 9, 10, and 14 were removed, as well as item 2 from WE.

The fit statistics were acceptable, and once again competing models were specified according to the combination of different factor structures. This was done in order to confirm the best-fitting measurement model. Table 4 represents the fit statistics for the three competing measurement models.

**Table 4***Fit Statistics of Competing Measurement Models*

Model	AIC	BIC	ABIC	$\chi^2$	df	MLR- adjusted $\chi^2$	RMSEA	CFI	TLI	SRMR
Model 1	17738.79	18186.74	17759.02	999.94	684	1175.13	0.05	0.91	0.91	0.06
Model 2	17765.26	18186.66	17784.28	1032.30	692	1217.60	0.05	0.91	0.90	0.06
Model 3	18035.77	18443.90	18054.20	1257.03	696	1496.12	0.06	0.85	0.84	0.07

AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; ABIC = Sample-size Adjusted BIC;  $\chi^2$  = chi-square; df = degrees of freedom; MLR = Maximum Likelihood (Robust) estimator; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual

When comparing the three models' AIC and ABIC values, it was clear that model 1 showed the best fit with the lowest values. Again, the MLR-adjusted  $\chi^2$  values were calculated and reported, and again model 1 had the best fit. Based on these findings, model 1 was used as the basis for the structural model. In this model, regression is used to determine whether the expected order in which the variables follow on each other can be confirmed.

**Structural model**

The structural model included regression pathways from the independent variable, WE, to the four variables of PM: AU, RM, PG, and PR. ALI was not included for regression, as it was considered as a moderator. Because only two questionnaires were involved, only one structural model was specified, including all the direct pathways to WE (Figure 3). No indirect pathways were present in the model. The fit statistics for the structural model are reported in Table 5.

**Table 5***Initial Framework Fit Indices and Standardized Path Coefficients*

Measures		Direct pathways (Model 1)
Fit indices	AIC	17740.56
	BIC	18185.18
	ABIC	17760.63
	$\chi^2$	1004.80
	<i>Df</i>	685
	MLR-adjusted $\chi^2$	1178.93
	RMSEA	0.05
	CFI	0.91
	TLI	0.91
	SRMR	0.06
Direct pathways to work engagement	Awareness and understanding	0.15
	Role of manager in ensuring effectiveness	0.10
	Satisfaction with performance goals and standard setting	0.00
	Satisfaction with performance ratings and bonus payment	-0.08

\* p &lt; 0.05

\*\* p &lt; 0.01

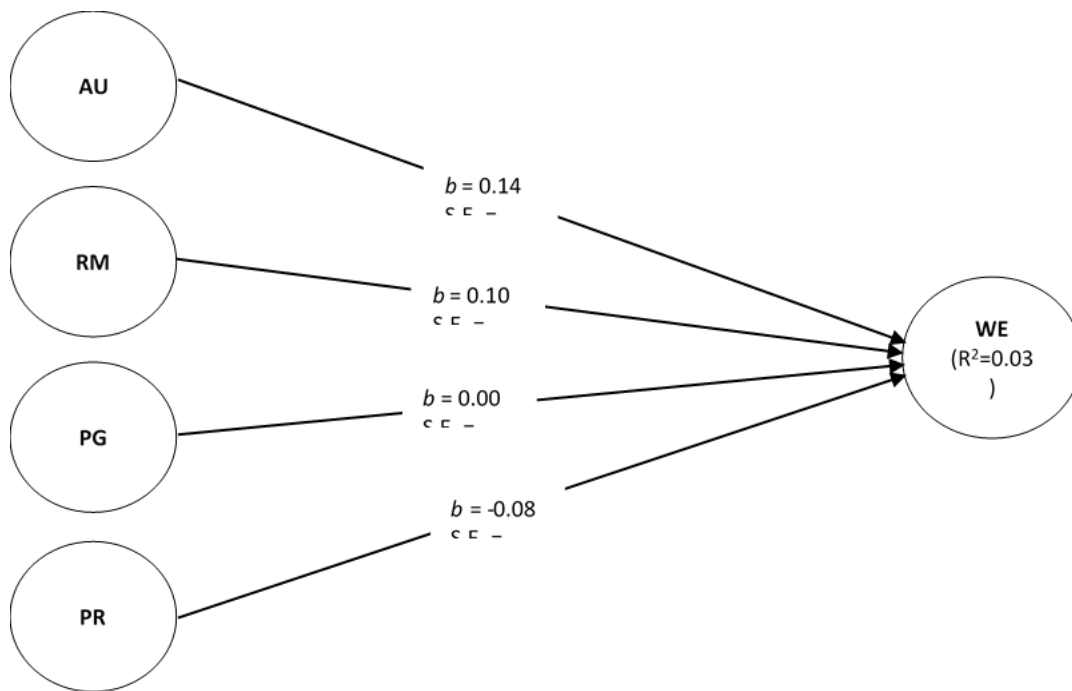


Figure 3. Structural model.

From the results obtained from the structural model, it could be seen that none of the regression pathways was significant. It could not be confirmed that any of the four latent variables, AU, RM, PG, or PR, preceded the outcome of work engagement. This finding was not unexpected, as no relationship had originally been found between, WE and any of the four variables. Even though the lack of relationship(s) and antecedent(s) were apparent, the moderation analysis was still completed.

### Moderation

Four separate interaction variables were created between ALI and the latent variables present in PM. To evaluate whether any of the four interaction variables caused moderating effects, WE was regressed onto each in four separate analyses. The results are reported in Table 6.

**Table 6***Moderating Effects of Authentic Leadership*

Variable	Work engagement	
	Est.	SE
Awareness and understanding (AU)	-0.05	0.14
Role of manager in ensuring effectiveness (RM)	0.23	0.21
Satisfaction with performance goals and standard setting (PG)	0.08	0.18
Satisfaction with performance ratings and bonus payment (PR)	-0.00	0.11

\* p &lt; 0.05

\*\* p &lt; 0.01

According to the results, authentic leadership was found not to have a moderating effect as per Hypothesis 3 (Authentic leadership moderates the relationship between the performance management process and work engagement). The hypothesis is, therefore, rejected.

**Indirect Effects**

Based on the previous findings, it was decided to investigate whether any indirect effects were possible. Moderating effects would be possible on an existing relationship, which was not present in this sample. When looking at indirect effects, the presence of a relationship between the independent and dependent variable is not a prerequisite. Adding another variable in the middle of this relationship might strengthen it to such an extent as to make the indirect effect of the independent variable on the outcome significant. The results are provided in Table 7. In this sample, no indirect effects were apparent.

**Table 7***Indirect Effects Through Authentic Leadership*

Variable	Work engagement		
	Est.	SE	95% CI
Awareness and understanding (AU)	0.06	0.30	[-0.07, 0.80]
Role of manager in ensuring effectiveness (RM)	0.27	0.68	[-0.10, 1.73]
Satisfaction with performance goals and standard setting (PG)	-0.04	0.62	[-1.27, 0.19]
Satisfaction with performance ratings and bonus payment (PR)	-0.00	0.11	[-0.15, 0.11]

\* p &lt; 0.05    \*\* p &lt; 0.01

## DISCUSSION

The main aim of the study was to investigate the role of authentic leadership in and its relation to the performance management process and work engagement, and to indicate to the leaders of the petrochemical industry the importance and application of authentic leadership during the process of performance management; giving authentic feedback can potentially yield positive results and the likelihood of work-engaged employees. The findings were as follows: There was a positive relationship between authentic leadership and the performance management process; therefore, *Hypothesis 1* is accepted. Furthermore, it was found that there was also a positive relationship between authentic leadership and work engagement (accepting *Hypothesis 2*).

In accordance with the relationship between authentic leadership and the performance management process, this relationship is expected and deemed to be true, based on literature. Literature on authentic leadership has found that the leader's integrity drives follower performance and that authentic leadership is positively related to the performance management process (PMP) (Ribeiro et al., 2018). Through enhanced trust and leader identification, authentic leaders can drive follower performance and organisational citizenship behaviours (Walumbwa et al., 2008, 2010,). According to Maximo et al. (2019), authentic leaders may lead subordinates to develop positive expectations as well as increased levels of trust and a stronger willingness to cooperate with leaders to the benefit of the organisation. Because they display high moral standards, integrity and honesty, Caldwell and Dixon (2010) discovered that authentic leaders can influence individuals at various levels in an organisation. Thus, authentic leaders significantly influence their subordinates and the organisations they lead (Maximo et al., 2019).

In the petrochemical industry, leaders are encouraged to have daily check-in moments with employees in order to build trust and positive relations between the employee and the organisation. Authentic leadership promotes positive attitudes and employee behaviours and contributes to the PMP (Ribeiro et al., 2018). As part of the PMP, followers' talents, strengths and potentials form part of authentic leaders' key focus (Luthans & Avolio, 2003), yielding greater performance by followers (Ribeiro et al., 2018). Therefore, the success of implementing an employee performance management process depends on agreement among leadership as to the direction of the organisation (Mustafa, 2013).

This implies that leaders need to understand the overall organisational strategy, and, in the petrochemical industry, it is expected of leaders to drive and deliver on strategy. Authentic leadership behaviours are also known to assist in restoring trust in leaders and the organisation by supporting followers' efforts and contributions. Thus, employees become more confident in their abilities and their self-efficacy improves, leading to improved performance in their work (Ribeiro et al., 2018).

Another finding of the study, although with small effect, was the positive relationship between authentic leadership and work engagement. Work engagement is a major construct in employee and organisational success and researchers found a statistically significant positive relationship between authentic leadership and work engagement (Avolio & Gardner, 2005; Hsieh & Wang, 2015). Based on Kahn's (1990) work, authentic leaders demonstrate integrity, show sustained performance, build trust and openness, and help followers realise their true potential; these behaviours are likely to enhance the safety dimension of work engagement as identified (Sarfraz, Qun, Abdullah, & Tahir, 2019). In the petrochemical industry, leaders are expected to build a culture of high-performance and safety. High potential employees are identified and nurtured through developmental programs within the organisation; therefore, employees can realise their talents and potential. Kahn (1990) stated that trust between a leader and subordinate also positively predicts employee work engagement; thus, when subordinates develop a high level of trust in the leader and organisation, they are more likely to become engaged in their work, meaning leaders have a great influence on work engagement and organisational success (Maximo et al., 2019).

Finally, authentic leadership was not found to moderate or strengthen the relationship between the PMP and work engagement. Both moderating and indirect effects were absent. This could simply mean that in the petrochemical industry, performance management has no bearing on work engagement, because leaders understand their role in the performance management process and run the process effectively and accordingly.

### **Limitations and Recommendations for Future Studies**

The study had a few limitations. Firstly, the study was conducted using a cross-sectional survey that allows for explorations to be made about the role of authentic leadership in the PMP and work engagement of employees in a petrochemical industry (Creswell, 2014). According to Spector (2019), researchers should not undervalue cross-sectional studies, as these types of

studies can support evidence for relationships among variables and can be used to rule out many potential alternative explanations for those relationships. In future, a longitudinal design could be followed as such a design offers considerable advantages; it can shed light on causal connections. It will also allow a prolonged process where data can be collected not only at the end of the performance cycle, but rather from the beginning of the cycle through to the interim, then to the end of the cycle. In this way, one can see results prior and post the performance cycle. Another limitation is the small sample size of the study, although it yielded satisfactory results. Data was only collected at two sites of the petrochemical industry; in future, data should be collected at all sites of the organisation in order to give a more holistic view of the organisation. The study found that authentic leadership is not a moderator as per *Hypothesis 3*. Future research will need to look at work engagement and what gets employees to be engaged in their work, considering all contributing factors of work engagement. Authentic leadership and work engagement worked only as one factor during the statistical analysis; another South African study in the health sector also found one factor for authentic leadership (Coxen, Van Der Vaart, & Stander, 2016). In view of the inability to explain this, it could be that the authentic leadership questionnaire is not very suited to a South African environment, or that perhaps South Africans tend not to distinguish between the different characteristics proposed as sub-factors of authentic leadership. For future research, it would be recommended that this aspect be further investigated.

### **Implications for Management**

International and national levels are facing societal challenges and leadership failures in both public and private sectors. These have drawn researchers' attention to the ethical challenges in leadership (Owusu-Bempah, Addison, & Fairweather, 2014). These behavioural challenges at top leadership call for the injection of values into the behaviour of managers and leaders; hence, the driving force behind leadership theories that could best suit the challenges facing the world currently (Owusu-Bempah et al., 2014). Researchers and practitioners have suggested that authentic leadership is relevant for positive and desirable organisational outcomes in this challenging and turbulent world of work today (Owusu-Bempah et al., 2014). A focus on leadership and, more specifically, authentic leadership will assist in fostering greater positive long-term outcomes for leaders, their followers and their organisations (Covelli & Mason, 2017). According to Covelli and Mason (2017), leadership in modern day international organisations is often lacking; hence, it is important for organisations to invest in leadership

development programs that encourage authentic leadership as the best driver for HR processes, such as the performance management process.

Given the results found in the study, it is evident that there is a strong positive relationship between authentic leadership and the performance management process. Due to the challenging nature of the PMP implementation, line managers are entrusted to drive the process, because it is believed that they have the ability and motivation to sanction activities involved in the PMP, as they do not experience role conflict (Van Waeyenberg & Decramer, 2018). Given this relationship, organisations are encouraged to invest in the selection and development of their leaders, as this will yield positive benefits for the organisation and most likely enhance emotional, physical, and cognitive work engagement (Snygans, 2019).

## **Conclusions**

The PMP measuring instrument by Maimela and Samuel (2016) which was validated by Mohlamme and Diedericks (in press; refer to Chapter 2) deemed to be both reliable and valid for use in a different context, namely the petrochemical industry. Furthermore, although no moderation could be found in the study, important findings were still made that organisations could use to their benefit. A significant strong relationship was found between authentic leadership and the performance management process. This signifies that leaders are key and instrumental in driving this process effectively. Therefore, organisations should take time to develop and groom their leaders to be authentic in how they engage with employees. Authentic leadership has a positive relationship with work engagement. Leaders can contribute to the engagement of employees as is evident in the study. Employees will feel more comfortable and engaged, if they can trust their leaders and if they experience them to be true and authentic.

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## CHAPTER 4

### CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The purpose of this chapter is to highlight the conclusion of the study in terms of the specific objectives. Furthermore, the study will discuss the limitations and future recommendations for the petrochemical industry and future research.

#### 4.1 CONCLUSIONS

The conclusions are drawn from the main purpose of the study, which was to investigate authentic leadership and its role in the performance management process and work engagement in a petrochemical industry. Based on literature and empirical results, the specific objectives will now be addressed.

##### Objective 1

**Investigate the relationships between authentic leadership, the performance management process and work engagement as conceptualised in literature.**

According to literature, the past several years considered authentic leadership in global and national markets. As the basis of positive leadership, authentic leaders are perceived by their followers as being honest, true to the self, with high moral standards and integrity. Both leadership practitioners and researchers have recognised the relevance of authentic leadership as a preferred leadership style for attaining favourable and desirable organisational outcomes (Roncesvalles & Sevilla, 2015). Global and local environments do not only recognise this type of leadership as a way of addressing challenges and ever-changing organisations, but they also acknowledge it as a way of winning employees' trust and positively influencing performance management outcomes (Roncesvalles & Sevilla, 2015).

Therefore, *Hypothesis 1*: There is a positive relationship between authentic leadership and the performance management process, is accepted. It is evident from literature that authentic leadership contributes to the performance management process. This is also evident in the petrochemical industry where leaders are key drivers of the process and are expected to be authentic in their approach, whilst also fostering work engagement. Avolio and Gardner (2005) stated that by way of setting an example, and being

transparent and committed to their work, authentic leaders provide guidance to followers in terms of how to remain emotionally, physically and cognitively connected to their work and maintain overall organisational performance (Wang, Sui, Luthans, & Yanghong, 2014). Furthermore, Walumbwa, Wang, Schaubroeck, and Avolio (2010) maintained that authentic leaders are likely to guide their followers, because they possess credibility and are attractive as role models (Walumbwa, Avolio, Gardner, Wernsing & Peterson, 2008, 2011). It has been found that authentic leadership behaviour is positively related to supervisor-rated job performance, organisational citizenship behaviour, and work engagement (Walumbwa et al., 2010). Hidayat (2016) found that authentic leadership promotes work engagement in individuals and increases performance; therefore, the higher the supervisor authenticity, the higher the work engagement. Followers will adopt a positive attitude towards their work in the organisation.

## **Objective 2**

### **Validate the psychometric properties of a new South African measuring instrument on the performance management process for use in another context.**

The study validated the psychometric properties of the performance management process, aligning subsections of the Maimela and Samuel (2016) measuring instrument to objectives and values of the petrochemical organisation. Psychometric properties of validity and reliability were considered. The assessment for instrument validity was based on an extensive review of performance management literature and revealed content validity where the instrument content adequately reflected the constructs of the performance management process being measured. Construct validity was also evident, revealing a strong theoretical underpinning.

The reliability of the instrument was based on all four sections espoused in the measuring instrument, with Cronbach alphas ranging between 0.69 and 0.85. The Cronbach alpha for Section C was slightly below 0.70 at 0.69; yet, close enough to be acceptable (De Souza, Alexandre, & Guirardello, 2017). A reliability threshold of 0.70 is recommended by Nunnally (1978); thus, establishing internal consistency of the instrument. Maimela and Samuel's (2016) study provided a general coherent literature framework within which to structure the measuring instrument items. A confirmatory factor analysis was done on the measuring instrument to determine if items used in the instrument had good

validity measures and if each sub-scale had good inter-item correlation. No item was removed from the questionnaire and the psychometric properties in Maimela and Samuel's (2016) performance management measuring instrument were valid and reliable. The sample items in the four sections of this instrument proved to be extremely relevant to the PMP in the context of the petrochemical industry's objectives and values.

### **Objective 3**

#### **Establish whether authentic leadership has an influence on the performance management process.**

According to Dweba (2017), leadership must support the implementation of performance management for the process to be successful. Leaders must be committed and should be encouraged to develop their own capacity to mentor and support employees during the performance management process. The study referred to the performance management process and not performance management system, as the system forms part of the process. The process is holistic in nature and is ongoing; whereas the system is only used once the process has taken place in the petrochemical industry. Therefore, the leader drives the performance management process, which comprises performance reviews, talent management, and learning and development. Thereafter, all actions are tracked and captured on the system. Consensus has been reached among scholars that leadership and strategic choices leaders make affect organisational performance immensely, as well as the successful implementation of the performance management process (Dweba, 2017). The literature review supports leadership as the driving force behind improving organisational performance. It is also a commanding source in terms of management development, continuous improvement and the organisation's sustained competitive advantage (Dweba, 2017). Roncesvalles and Sevilla (2015) stated that facilitating and sustaining improvement in the organisational performance management process still require a more defined relationship between leadership and performance management. Thus, researchers agree that a direct relationship exists between leadership and the performance management process (Roncesvalles & Sevilla, 2015).

Based on Quinn (1988), there are eight roles that leaders must play in the management of performance in their organisations; these roles are: *Innovator* (the leader is creative and imaginative, inspires and facilitates change), *broker* (the leader facilitates the

acquisition of resources and maintains the unit's external legitimacy through the development, scanning and maintenance of a network of external relations), *producer* (the leader is both task-oriented as well as work-focused. He or she strives for the completion of tasks and motivates those behaviours that will lead to the completion of the team's task), *director* (the leader engages in setting goals and objectives and establishing clear expectations), *coordinator* (the leader maintains structure, schedules work, coordinates, facilitates problem solving and monitors adherence to rules and standards), *monitor* (the leader collects and distributes information, follows up on performance and provides a sense of continuity and stability), *facilitator* (the leader encourages the expression of opinion, seeks consensus and negotiates compromise), and *mentor* (the leader is aware of individual needs, listens actively, is fair, supports genuine requests and attempts to facilitate the development of individuals).

Gardner, Avolio, Luthans, and Walumbwa (2005) postulated that authentic leadership is about making personal discoveries, such as openly sharing information and expressing true thoughts and feelings together with its main components, namely *self-awareness*, which speaks to the degree to which a leader demonstrates an understanding of how he/she derives and makes sense of the world; *balanced processing*, which refers to the degree to which the leader analyses all relevant information before making a decision and soliciting the views of others who challenge their position on matters; *internalized moral perspective*, which defines leader behaviours through internal moral standards and values rather than organisational and societal pressures, and finally, *relational transparency*, which involves making personal disclosures, such as openly sharing information and expressing true thoughts and feelings (Lyubovnikova, Legood, Turner, & Mamakouka, 2014).

Additionally, it is also believed that good leadership such as authentic leadership enhances work performance and its process in general. According to Roncesvalles and Sevilla (2015), followers can improve their work performance as authentic leaders are known to emphasise followers' core characteristics, which in turn affect overall organisational performance. In the petrochemical industry, it is established - based on the results - that there was a statistically significant strong relationship between authentic leadership and the performance management process. The performance management process with its four factors were all practically significant ( $p < 0.01$ ) with a large effect.

Awareness and understanding correlated with itself at ( $r = 0.58$ ), with role of manager in ensuring effectiveness, with performance goals and standard setting ( $r = 0.83$ ) and satisfaction with performance ratings and bonus payment ( $r = 0.58$ ). Authentic leadership was also practically significant ( $p < 0.01$ ) with a large effect of ( $r = 0.56$ ). The large effects indicated that there was a relation between authentic leadership and the performance management process and therefore *Hypothesis 1*: There is a positive relationship between authentic leadership and the performance management process, was accepted. These results can be expected because the industry has a very solid performance management process that is run by authentic leaders. This indicates that the refresher training that all leaders undergo throughout the performance cycle has a positive effect on the performance management process. It gives an indication that leaders in the organisation understand their role in the process. Watkins and Leigh (2012) and Taylor (2014) argued that most critical performance management failures are as a result of poor leadership engagement; hence, the petrochemical industry's investment in leadership training and programs. The organisation has also reviewed its leadership competencies, which are aligned to the anticipated aspirational culture and the required leadership style, which is authentic in nature.

#### **Objective 4**

#### **Determine the role of authentic leadership in the work engagement of employees in a petrochemical industry.**

There was a positive relationship between authentic leadership and work engagement ( $r = 0.15$ ), although with a small effect of less than 0.3; hence *Hypothesis 2*: There is a positive relationship between authentic leadership and work engagement, was accepted. Theory and research by Kahn (1990) support this hypothesis, as work engagement involves the harnessing of organisational members' selves to their work roles (Sarfraz, Abdullah, & Tahir, 2019). Authentic leadership is considered as a construct that influences employees' work engagement in terms of satisfaction, boasting their involvement in work, perceiving leaders as being credible, demonstrating continuous enactment, building faith and sincerity, and assisting employees in apprehending their actual abilities (Gardner et al., 2005). This kind of behaviour is expected to improve the well-being aspect of work engagement as identified by Kahn (1990). Aydin and Kaya (2016) positively linked work engagement to employees' subjective well-being and

performance and, in turn, negatively to turnover intention (Snygans, 2019). Furthermore, this supports the idea that sincerity (relational transparency and openness) is gained from an authentic leader-employee relationship, resulting in work engagement (Snygans, 2019). This is also evident from the results in that turnover intentions are quite low in the petrochemical industry, as most of the participants in the study were permanent employees (98.1%) who had been working for the organisation between 10-20 years.

## **Objective 5**

### **Establish whether authentic leadership moderates the relationship between the performance management process and work engagement**

Based on the results of the study, authentic leadership - when tested - was found not to be a moderator and had no indirect effects. This is as a result of no correlation found between the performance management process and work engagement; thus, rejecting *Hypothesis 3: Authentic leadership moderates the relationship between the performance management process and work engagement.* This is a clear indication that the way in which the performance management process is applied, has no real impact on employees' work engagement. This finding can be ascribed to the fact that leaders in the petrochemical industry understand and know their role in the performance management process. Employees are not exposed to any surprise factor when it comes to their performance ratings due to constant communication and tracking taking place throughout the performance cycle; hence, this does not lead them to being disengaged. Therefore, it is believed that there are other factors that can cause employees in the petrochemical industry to be less engaged in their work. The small effect of less than 0.3 indicated that although a relationship exists between authentic leadership and work engagement, improvement is still required in terms of increasing the level of work engagement in the organisation. There could be a potential gap between the global definition of authentic leadership, what the petrochemical industry defines as authentic leadership and how employees define authentic leadership. This gap could cause a misalignment between organisational leadership and employees' expectations of a leader, which will result in less trust in the leader. This can lead to the psychological contract between leader and employee being partially breached; hence, the small effect of work engagement.

According to Van der Vaart, Linde, de Beer and Cockeran (2015), a psychological contract is an unwritten promise made by the employer in terms of the employer's obligations towards the employee and vice versa. Employees perceive it as a fulfilment of the psychological contract if the employer enhances employability and, in turn, they will be loyal to the organisation (Van der Vaart et al., 2015). Through selective reasoning, researchers maintain that employees recognise breaches through the existing levels of trust they have in their organisation (Bal, Chiaburu, & Jansen, 2010). Robinson (1996) established that trust strengthens the relationship between contract breach and future trust. The effects of contract breach depend on the level of trust in the organisation, and, employees who perceive high trust will feel more betrayed, reducing their work and discretionary efforts. This is a step an employee takes when deciding on how much to engage in the organisation (Bal et al., 2010). Therefore, employees will experience higher risk in trusting their employer should the psychological contract be broken. Hence, they take less risk in the existing relationship, diminishing job performance and behaviours (Bal et al., 2010). The psychological contract is a prerequisite to having an engaged workforce and it is upon leaders to live up to this contract by being authentic in dealing with the employee, which in return will guarantee employee loyalty. When the organisation fulfils its promised obligations, employees may be motivated and engaged (Bal et al., 2010).

## **4.2 Limitations**

Although the study had a few limitations, the general objective was still achieved, which was to investigate authentic leadership and its role in the performance management process and work engagement in a petrochemical industry.

The first limitation is that a cross-sectional study was utilised. In future, a longitudinal study could be beneficial as it establishes causality and determines reciprocal effects (Van der Vaart, 2016). Maimela and Samuel (2016) conducted the study in the educational industry with a self-developed questionnaire; no other similar or different industries have used this instrument. It is unclear if the authors did effect changes to items that did not yield satisfactory results or indicated problems in terms of the pilot test results. Furthermore, the results of this study were not obtained in all regions of the petrochemical industry, which does not afford holistic feedback to the organisation.

Results are limited to two sites of the organisation (operations and headquarters). Although the sample size yielded results, it was relatively small. Authentic leadership with its four subdivisions (and work engagement with three categories) played out as one factor in the South African context; no evidence could be found from literature as to why South Africans generalise these factors. As a way of example, studies by Coxen (2017); Maximo (2015); Sepeng (2016); and Van der Vaart (2016) also revealed authentic leadership as a one factor model in the South African context (Snygans, 2019).

### **4.3 Recommendations**

#### **4.3.1 Recommendations for the Individual**

According to Yasinski (2014), becoming an authentic leader requires the courage to commit to a process of personal transformation and growth from the inside out. Authentic leaders must develop a leadership style that is aligned to their personality, values, and character; regardless of the circumstances, they encounter (Yasinski, 2014). It is also important that individual leaders' attributes and values resonate with that of the organisation. Based on Owusu-Bempah, Addison, and Fairweather (2014), when there is alignment between the leader's behaviour and values, then authenticity as a title is deemed to be fit for the leader. Integrity of the leader leads to positive outcomes for both followers and the organisation. Individuals in the organisation need to know that growing and developing into a leader is a journey that spans over one's entire career. Mastery of both the professional and personal skills is a prerequisite for the success of the authentic leader and organisation (Yasinski, 2014).

#### **4.3.2 Recommendations for the Organisation**

It is recommended that leaders in the petrochemical industry focus more on being authentic and exhibit the aspirational culture of the organisation in order to increase employees' work engagement. It is important that leaders follow the code of conduct, values and aspirational culture set by the organisation as part of its strategy. The organisation should further develop its leaders towards being more authentic. At a strategic level, it is recommended that leaders in the organisation develop themselves to be transformational leaders and not transactional. Transformational leaders are part of the aspirational culture of the organisation. Leader development should be emphasised through leaders' capability building and leadership programs that encourage authenticity

in leaders. Furthermore, it is recommended that the organisation measures its leaders, including authenticity as part of the key result areas in the performance management process.

#### **4.3.3 Recommendations for Future Research**

It is recommended that future data be collected at all sites of the petrochemical industry in order to obtain a holistic view of the entire organisation. This study - as in other studies that were mentioned previously - produced authentic leadership and work engagement as one factor for which no explanation can be afforded. Future research could investigate possible reasons for this occurrence in a South African context. The reliability of the Maimela and Samuel (2016) instrument was found to be below-the-threshold alpha in especially one instance (Section C), which could lead to reliability problems in other future studies and contexts; therefore, future research could address this problem.

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# Perception of performance management system by academic staff in an open distance learning higher education environment



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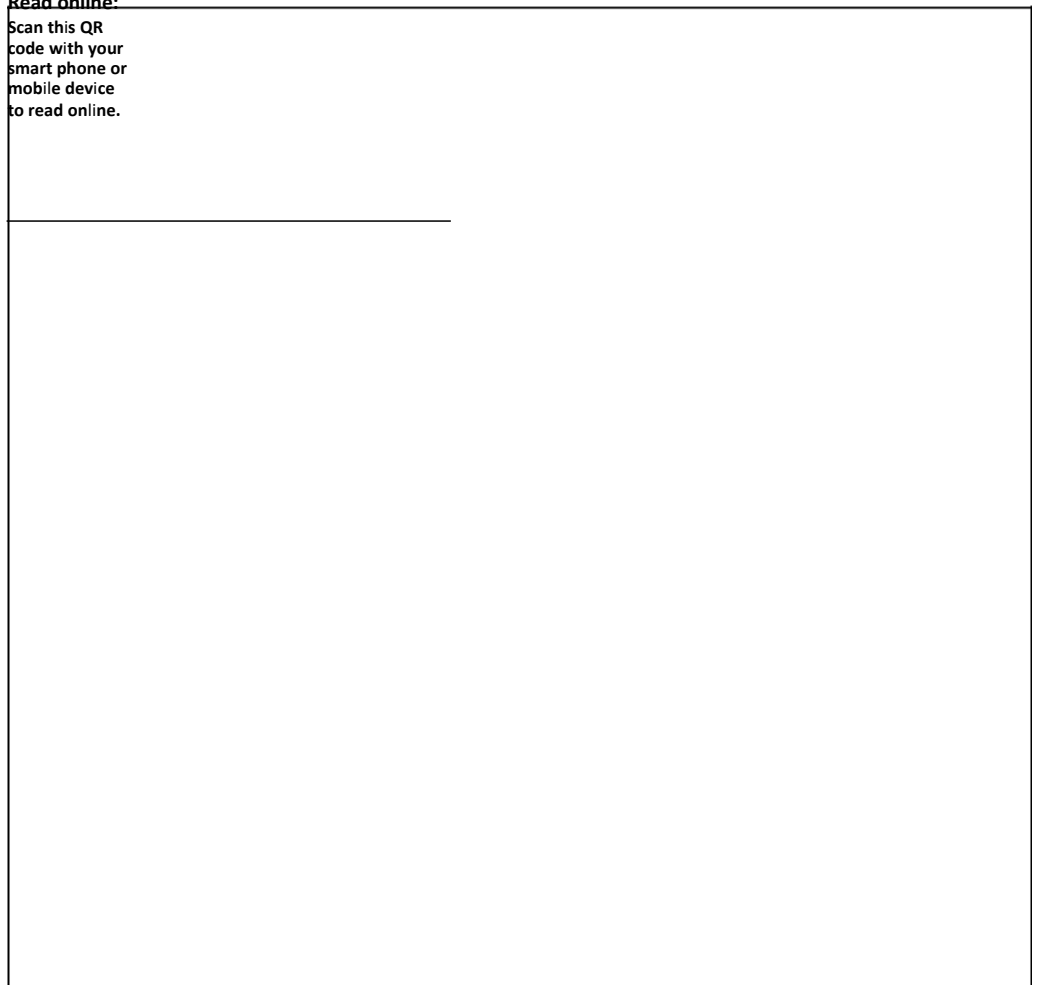
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alpha value of 0.83. Data were analysed using a one-sample *t*-test because of the one-measurement nature of the variable under investigation.

**Main findings:** Major findings of the study indicated that respondents were satisfied with the implementation of the PMS by management. However, the payment of performance bonuses was not considered as sufficiently motivating, thus necessitating a pragmatic review by management.

**Practical/managerial implications:** The findings of this article provided a practical guide to managers on the implementation and management of PMS as an employee performance reward mechanism in non-profit and service-oriented organisations.

**Contribution:** This article provided an incremental contribution to the body of literature in the broad field of management and a further advancement of existing knowledge in the sub-field of performance management system.

**Orientation:** Institutions of higher learning in South Africa are fast embracing performance management system (PMS) as a mechanism for the achievement of teaching excellence and enhancement of research productivity. However, literature provided evidence to show that application of PMS in the private sector had failed to drive competition, efficiency and productivity.


**Research purpose:** The main purpose of this article was to evaluate the perception of academic staff members of an open distance learning institution regarding the implementation of a PMS.

**Motivation for the study:** PMS as a mechanism through which performance of academics is measured has been described as inconsistent with the long tradition of academic freedom, scholarship and collegiality in the academy. Moreso, previous research on the implementation of PMS was limited to private sector organisations, thus resulting in the dearth of empirical literature relating to its practice in service-driven public sector institutions.

**Research design, approach and method:** The article adopted a quantitative research approach using census survey methodology. Data were collected from 492 academic staff from the surveyed institution using a self-developed questionnaire that was tested for high content validity with a consolidated Cronbach's

## Introduction

Globalisation-induced competition has substantially increased the necessity for organisational managers to develop sustainable human resource (HR) strategies that are capable of optimising business performance (Imran, Arif, Cheema & Azeem, 2014). One such HR strategy is the development of performance management system (PMS). PMS has been variously described by authors as a combination of a number of functions and processes that have been carefully planned and carried out with the intention of achieving predetermined organisational objectives through employee's work performance (Aguinis, 2013; Armstrong, 2009; Hawke, 2012; Sousa, De Nijs & Hendriks, 2010; Taticchi, Balachandran & Tonelli, 2012). Therefore, performance management is considered as an integral and inalienable managerial function in any organisational setting (Islam & Rasad, 2006). This is more so as organisational managers attempt to devise an objective criteria that measures the performance of employees, both as individuals and group and to determine the extent to which such performances have contributed to the overall achievement of business effectiveness (Stanton & Navenkis, 2011). PMS provides a mechanism through which organisational rewards are objectively matched with individual employee's contribution to the achievement of organisational goals. The complexity involved in the design and implementation of this performance measurement

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criteria has over the years posed a challenging operational consideration for HR managers (Saeed & Shahbaz, 2011). Notwithstanding the complexity and challenges that are associated with this performance management activity, it remains the responsibility of management to provide a link between organisational effectiveness and employee performance.

Many authors (e.g. Bowman, 1994; Daley, 1998; Fox & Shirkey, 1997; Perry, 1991) have questioned the continued relevance and use of the merit rating or performance appraisal system as an objective performance evaluation technique. Merit rating or performance appraisal is a systematic and periodic evaluation of individual employees' value to the organisation in comparison to his or her colleagues (Junais, 2012; Toppo & Prusty, 2012). This criticism has accelerated the adoption of PMS as a more objective alternative in providing an integrated and continuous approach to the management of employee performance (Armstrong, 2009). Further preference for the adoption of PMS by managers is motivated by the ever increasing complexity in the management of business, which require a dynamic process of monitoring and evaluation (Willaert & Willems, 2006). Therefore, this complex and dynamic operating business environment requires a strategic and integrated performance management process that could assist the organisation to gain competitive advantage. The integrated approach involves the integration of other HR functions such as recruitment and selection, performance evaluation, training and development and remuneration (Pieters, 2009). The overall objective of the integrated approach is to establish a strategic alignment between a functional PMS and the overall organisational goals.

The motivation for the introduction of PMS in the higher education sector could perhaps be linked directly to increasing pressure from government for universities to increase both student throughput and research output. The introduction of performance incentive system (subsidy) by government in the higher education sector in South Africa has no doubt provided an unintended impetus for competition in the academy. Because incentivised performance management was alien to the educational sector, management of universities imported the prevailing performance management practices in the private sector. A number of performance management practices operating in the private sector include the 'Integrated Performance Management System' and '360 Degree Performance Management System'. Notwithstanding the use of PMS in the private sector as a measure of productivity and competitive advantage, documented evidence suggests that the approach was not effective in achieving these objectives (Moullakis, cited in Karim, 2015; Karuhanga, 2010; Hainess & St-Onge, 2011). However, management of universities seems to disregard such available evidence, consciously or unconsciously.

One noticeable shortcoming of performance management programmes is the assumption by the designers that one

programme works well across entities without necessarily taking into consideration the peculiarities of individual organisations. This ambitious and erroneous belief most often signifies the beginning of failure for such programmes. In order to avoid such a design failure, Kandula (2006) recommended an organisation-specific PMS that considers individual organisation's peculiarities such as internal environment, business strategy, strengths and weaknesses, vision and mission. The design pitfall that characterises adoption of performance management programmes partly motivated this study, as the adoption of PMS in the private sector may not necessarily achieve the same in a service-oriented academic institution.

While the main business of universities is to create and impart knowledge and disseminate scholarly ideas through research, private sector organisations are business oriented with the sole objective of capital accumulation and profit maximisation (Hudzik, 2011). However, research publication and graduate throughputs in South African universities attract some form of monetary subsidies from government. This subsidy in some ways serves as a third-stream income for universities; and this also trickles down to research-active academics, thus making the business of research publication a commercial enterprise rather than scholarly engagement (Bogt & Scapens, 2011; Hill, 2010; Flaniken, 2009).

## Research problem

The introduction of PMS as a performance monitoring tool for academics has been considered to be in conflict with the tradition of academic freedom, scholarship and collegiality (Parsons & Slabbert, 2001; Tam, 2008). Previous studies (e.g. Solomons, 2006; Willaert & Willems, 2006) relating to the practice of PMS were conducted in the private sector, thus resulting in the dearth of empirical literature relating to PMS practice in service-driven public sector institutions. Furthermore, existing literature revealed that most of the studies on the impact of PMS in higher education were conducted in universities where the mode of teaching involves face-to-face interactive lecture sessions between lecturers and students. Such teaching methodology is different from those applied in open distance learning (ODL) universities where teaching and learning take place through correspondence and in the absence of a physical interaction between students and lecturers. A salient problem arising from the introduction of performance management programmes by different organisations is that such programmes are not compatible with the organisational culture and this often shapes the perceptions of employees (Kandula, 2006). For example, issues around organisational culture, values, tradition, mission and vision differ from one organisation to the next and are most distinguished between profit- and service-oriented organisations. Similarly, the operating environment in a face-to-face teaching university is different from that of an ODL University in terms of performance measurement and management. The distinctions between the mode of operation in ODL institutions and other universities partly inform the conduct of the present study.

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This is with the aim of avoiding a designer failure – that is, tendency of a one-system-fits-all approach – in the introduction of a performance management programme.

### Study objective and research questions

It is against the background of the research problem described in the above section that this article sought to evaluate the perception of academic staff members in the institution under study regarding the implementation of a PMS. In order to achieve this broad primary objective, the researchers formulated the following overarching research question: what are the perceptions and experiences of academic staff at a South African ODL University regarding the implementation of a PMS? The following section provides both literature overview as well as theoretical framework for the article.

## Literature overview

### Performance management system and organisational culture

The decision to introduce a PMS requires careful consideration by management of the compatibility of the intended change with the prevailing culture and tradition of the organisation (Solomons, 2006). Previous literature (e.g. Bititci, Mendibil, Nudurupati, Garengo & Turner, 2004; Shields, 2008) argued that the introduction of a PMS is capable of transforming employee values, attitudes and behaviour thus leading to an eventual change in the overall culture of the organisation. Culture evolves over a long period of time, and once established, becomes extremely difficult to change (Hatch & Cunliffe, 2006). An effective change in organisational culture involves changes in policies and procedures, and most important, managing the subconscious unaware assumptions and values which guide people's behaviour (Kandula, 2006; Ogbonna, 2007). This may imply that changes in the physical structures of the organisation are not capable of transforming established organisational culture and behaviour of academic staff. What is required for an effective change in behaviour is a reorientation of the thinking process from the old ways to embrace a new way of doing things. Therefore, changing existing organisational culture and employees' behaviour are crucial for the successful implementation of PMS (Robinson, Carrillo, Anumba & A-Ghassani, 2005). The authors emphasised the traumatic experience that is associated with change, and this explains why employees' resistance to change should be expected by management as a natural phenomenon.

### Workload model in open distance learning institutions

The South African Institute for Distance Education (SAIDE, 2009) described an ODL system of education as an approach that seeks to remove all unnecessary physical barriers to learning in order to provide more people with a meaningful platform to acquire higher education. The teaching methodology in the ODL University (explained in the preceding literature) does have implication for the workload model of academics. Performance of their primary responsibility of teaching involves substantial administrative

engagement unlike their contemporaries in conventional universities. These cumbersome administrative duties impact significantly on the time available to conduct research by ODL academics, yet research productivity accounts for a substantial amount of subsidy accruable to the university from the Department of Higher Education.

The administrative bottleneck in the ODL course delivery is embedded in the design of the system, and this should not be compromised at the expense of research productivity. Tutors are employed in the ODL system to provide academic support for learners (Maimela, 2015). These tutors are managed by academic staff of the institution. This places additional responsibility on lecturers and this has further implication on their research productivity. However, the impact of tutor management by lecturers in the ODL system has been described as a negligible fraction of lecturers' workload as study and other learning resources are distributed to learners using Internet facilities (SAIDE, 2009). This description may not be totally accurate as teaching and instructions through the distance education system involves the use of printed course materials and telecommunication devices such as twitter, podcasts, and smart phones. All these processes are managed by academic staff. As a result, academics in ODL institutions are office bound with fixed working hours, expending most of their productive time developing study materials and responding to student enquiries on a daily basis. This no doubt impacts negatively on the amount of time available for research, which is a critical component of the 'Key Performance Area' in the PMS.

### Does employee perception matter in the performance management system process?

The simple answer to the above question is 'yes'. The explanation for this answer is that management needs to enlist the understanding and cooperation of the category of employees who would be affected by the operationalisation of the PMS. For this to happen, recipients of PMS must perceive the programme to be a fair, just and equitable one (Farndale, Van Ruiten, Kelliher & Hope-Hailey, 2011; Islam & Rasad, 2005; Kavanagh, Benson & Brown, 2007; Luthra & Jain, 2012). It is only then that employees return the intended benefits of PMS to management. One can also reasonably assume that employees will not likely embrace a PMS that they perceived to be biased, unfair and lacking equity in the distribution of organisational outcomes (e.g. promotion, salary increment, research incentives). The whole essence of balancing employee input with reward output is located within the concept of organisational justice (Baldwin, 2006; Greenberg, 1990). Literature of organisational justice was derived from Stacey Adams' equity theory (1963), which postulates an input-output ratio comparison by an individual employee with those of his or her colleagues and reacts based on the outcome of the assessment. Employees who perceive injustice in the input-output ratio will likely embark on withdrawal activities that include reduced productivity, lateness, sabotage or resignation from the organisation (Schultz, Bagraim, Potgieter, Viedge & Werner, 2003).

### Monitoring of academic staff performance: A new trend

Managers of higher education institutions now expect employees in the sector (particularly academics) to embrace organisational innovation practice that is typical of the private sector organisations (Hill, 2010; Parsons & Slabbert, 2004; Türk, 2007). Such expectation is informed by the need to ensure efficiency in the operations of higher education institutions in South Africa. This involves a systemic monitoring and measuring of academics' work performance and outputs. Ironically, such practice conflicts directly with the age-long established tradition of a self-defining work mechanism expressed within the context of autonomy and academic freedom (Pityana, 2004). However, the implementation of PMS in many institutions of higher learning suggests that work roles of academics are being defined by managers based on values and purposes that are dictated by market economy rather than the academic enterprise (Pityana, 2004). This management tendency has been described as the 'new public management', which is oriented towards outcomes and efficiency through better management of public budget (Shishkina, 2008; Zeleza, 2012). The introduction of this managerial approach in higher education sector could be problematic as managing a university is quite different from that of government ministries (Shishkina, 2008). Therefore, introduction of this new found management practice in the university system should be carefully considered as this could severely compromise the principle of work autonomy and academic freedom.

Management of higher education institutions have been under pressure by the higher education authority to increase student enrolment and research productivity without a corresponding increase in budgetary allocation (Parsons & Slabbert, 2004; Ruben, 2004). A possible way of achieving government's demand by management is the implementation of PMS which measures work outputs in quantitative terms. However, available studies indicated that operationalisation of the PMS in higher education institutions around the world is challenging (Mapesela & Strydom, 2004; Osei-Owusu, 2013; Tam, 2008). Further literature resists any attempt to commercialise academic institutions whose social objective is the production and dissemination of knowledge through research and teaching (Shishkina, 2008).

The outcome of a study conducted by Mapesela and Strydom (2004) in three higher education institutions in South Africa regarding the introduction and development of PMS highlighted the tension between collegiality and managerialism as it affects academic freedom. This tension, according to the authors, reflects the outcome in the business sector and such outcome is difficult to manage in a university system that is complex and diverse (Tam, 2008). Similarly, Martz, McKenna and Siegall (2001) argue that one of the most controversial issues associated with designing a workable PMS for academics is to first determine the content of the scholarly activities that would be incorporated into it (e.g. teaching, research, community engagement, academic citizenship).

Therefore, for PMS to be effective in the higher education environment, a typical business performance management model and approach needs to be adapted to the peculiarities of higher education institutions.

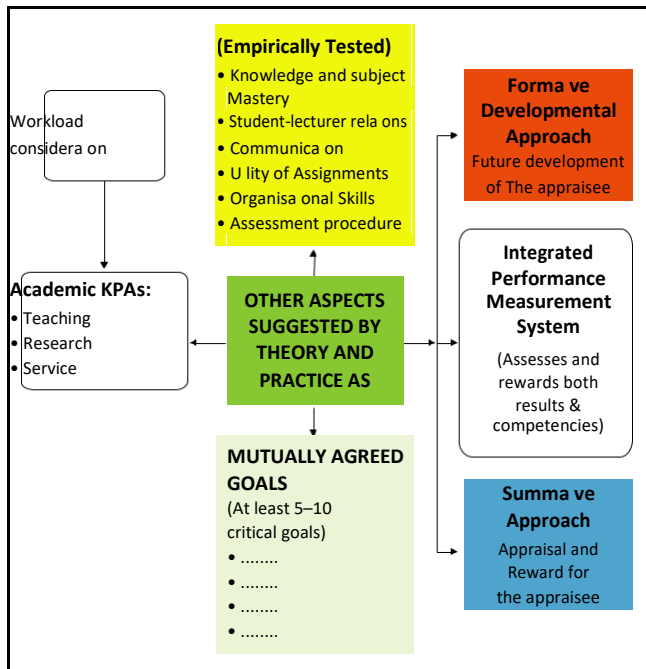
Academics have contested the validity of PMS arguing that it failed to measure all the activities it is supposed to measure (Pienaar & Bester, 2007). Respondents in the study by Pienaar and Bester highlighted overtly the preference of research over teaching by university management thus resulting in a dilemma for academics as to which of the academic activities – teaching or research – to prioritise. Therefore, for the study participants, the PMS constitutes unnecessary barrier to their career progression. Therefore, PMS should be designed to incorporate a full range of academic activities performed by academic staff in order for it to be well accepted and trusted. An effective PMS should account for the complex linkages between task performance and time factor. Based on a comparative study of some universities in the United States, United Kingdom, Nigeria, Australia and South Africa, Molefe (2010) concluded that introduction of PMS will likely be resisted by academics if its performance assessment criteria do not take into account the following broad issues:

- teaching workload or distribution of workload between members of the departments
- results of student evaluation based on an acceptable format used by the faculty
- student numbers per course research output with emphasis on accredited output
- corporate citizenship which encompasses service to the community without compensation.

The debate around the implementation of the PMS in academic institutions has been a balanced one. While some academics argued that the approach is anti-thetical to the academic culture, others submitted that PMS is capable of improving performance in the higher education system. For example, Taylor (2001) emphasises that the introduction of performance indicators in an academic institution can motivate its members to work harder, especially academics who are inclined and motivated by extrinsic rewards such as money and other financial rewards. However, people who are intrinsically motivated would be disinclined to support the PMS (Ryan & Deci, 2000). Instead, they would be motivated by factors such as recognition or quality of life factors such as leisure and holiday with family and friends.

In furtherance of the early study, Molefe (2012:5265) developed a model that depicts aspects of performance management that were both theoretically and empirically considered as important aspects for measuring the work of academics (see Figure 1).

Molefe's model (Figure 1) suggests that a feasible and workable performance management for academics should consider competencies such as knowledge and subject mastery, communication skills, student-lecturer relationship, workload and the reward mechanism. Molefe (2012)



Source: Molefe, G.N. (2012). Performance measurement model and academic staff: A survey at selected universities in South Africa and abroad. *African Journal of Business Management*, 6(15), 5265

FIGURE 1: Conceptual model of performance measurement for lecturers.

contended that a PMS that considers all the stipulated competencies will likely be successful as both financial and non-financial rewards have been incorporated.

### Theoretical framework for the study

Performance management literature is broadly conceptualised within the framework of motivational theories as Kandula (2006) argued that unless the motivational composition of individuals is correctly understood and managed effectively, no performance could ever be successful. Therefore, performance excellence comes from people who are well motivated. This treatise is underpinned by the goal-setting theory and expectancy theories (Atkinson & Shaw, 2006) respectively.

Goal-setting theory is essentially premised on the understanding that some individuals perform better when specific goals are set as there is the tendency for them to remain focussed and expend additional efforts in order to achieve set goals (Locke & Latham, 1990). The theory is predicated on the argument that (1) individuals have different goals, (2) act to achieve such goals if there is a chance of succeeding and (3) the value of the goal affects the level of motivation (Locke & Latham, 1990). The theory further postulates that not only does assigning specific goals to individuals or teams result in enhancement of performance but also enhancing goal acceptance through employee involvement and increasing the challenges of goals leads to increased motivation and improved performance. Apart from being challenging, goals should also be clearly stipulated and feedback mechanism installed. Involving employees in the goal-setting process is crucial in order for performance management to be effective and successful.

Vroom (1964) posited the expectancy theory on three basic factors: valence, instrumentality and expectancy. Valence refers to the value, that is, the attractiveness of the task outcomes (e.g. rewards); instrumentality is the degree of expectation that improved job performance will lead to the desired task outcomes and the expectation that increased effort is perceived to lead to increased job performance (outcomes). Therefore, the greater the value of a set of rewards and higher the probability that receiving each of these rewards depends upon effort, the greater the effort that will be expended in achieving the set outcome. The applicability of the expectancy theory found empirical support in a study conducted by Aguinis (2013), which demonstrated that PMSs are more effective when results (performance) are directly tied to the reward system (valence).

## Research methodology

### Research design, population and sampling

The article adopted the case study research design using the quantitative approach (Bryman & Bell, 2011). Case study design was more appropriate because the study was limited to a single organisation. A census survey was used to collect primary data from and about every individual in the population (Floyd & Fowler, 2014). The distinguishing factor between census survey and sample survey is that the former (census survey) collects data from every member of the population while the latter (sample survey) collects data only from some members of the population (Chawla, Chindra & Pandey, 2013; Harding, 2006). The census survey strategy is enhanced in the study because of the homogeneous nature of the population (i.e. all academics) irrespective of their academic positions or titles within the institution. Structured questionnaire was therefore administered to a target population of 1775 as contained in the sampling frame (Bryman & Bell, 2011) obtained from the case university database. Questionnaires were distributed using the institutional email address of all the participants.

### Measuring instrument

A self-constructed questionnaire comprising four sections with each section measured on a 5-point Likert scale (anchored on 1 = ‘strongly disagree’ to 5 = ‘strongly agree’) was employed in gathering primary information from the participants (Cooper & Schindler 2001; Tustin, Lighelm, Martins & Van Wyk, 2005). The questionnaire items were derived from extensive review of performance management literature in order to achieve content validity (Bryman & Bell, 2011) while the questionnaire items were also pre-tested in a pilot study comprising 11 academic subject matter experts who were purposively selected from the case institution. Reliability test was performed on the measuring instrument using the Cronbach’s alpha coefficient and the following alpha values were obtained: Section A comprises 7 items with a Cronbach’s alpha value of 0.822; Section B comprises 10 items with a Cronbach’s alpha value of 0.911; Section C comprises 8 items with a Cronbach’s alpha value of 0.693 and Section D comprises 8 items with a Cronbach’s

alpha value of 0.895. Each section of the measuring instrument achieved the reliability threshold of 0.70 as recommended by Nunnally (1978), thus establishing the internal consistency of the instrument. Similarly, the average inter-item correlations all exceeded 0.30, indicating relative homogeneity among items and reflecting the same underlying construct (Hair *et al.*, 2010). Sections A, B, C and D of the measuring instrument were designed, respectively, to measure the following aspects of PMS: awareness and understanding of the PMS; the role of managers in ensuring the effectiveness of the PMS; satisfaction with performance goals and standard setting and satisfaction with performance rating and bonus.

Section E of the questionnaire consists of biographic information of the respondents with the following key demographic distributions: academic staff from professorial to lecturership positions (78%), research assistants and academic administrators (22%). Others are female respondents (52.4%), male respondents (47.6%), white respondents (55.3%), black respondents, and Indian and mixed-race respondents (44.7%). The respondents were aged between 20 and 65 years (97%) with 43% possessing doctorate degrees while 57% hold other academic degrees.

Of the 492 questionnaires returned, only 313 were useable. This represents 64%, which is considered adequate for the study.

## Data analysis and discussion

This section consists of interpretation of data as presented in the respective tables (Tables 1–4) and then followed immediately by a discussion of the statistical results. Each table consists of a theme, and each theme comprises a number of separate questions with independent statistical results. As a result of this arrangement, the results, interpretation and discussion were presented together rather than organised into separate sections (data analysis, discussion).

### Data analysis

Data analysis was conducted using a one-sample *t*-test, which is used to test whether a population mean is significantly different from some hypothesised value. It is more useful when one-measurement variable is involved and the researcher wants to compare the mean value of the measurement variable with some theoretical expectations.

The present study measured the perceptions of all academic staff (irrespective of their positions) in case the university considered implementing PMS. This represents a one-measurement variable. The statistical results and discussion of findings are presented in the following section.

The results present a strong evidence of awareness with a reported mean of  $x = 4.68$  and associated standard deviation  $\sigma = 0.641$ . Further analysis showed a fair perception regarding clear definition and communication of the system to the affected employees ( $x = 3.4$  and  $\sigma = 1.226$ ;  $x = 3.34$  and  $\sigma = 1.266$ , respectively).

It is imperative for the management to explain the rationale for introducing a PMS to the affected employees (Aguinis, 2013) as transition from one assessment regime to another requires communication and justification (change management) of the new system in order to re-orientate and assist the employees in understanding and coping with the new system (Ogbonna, 2007). Consultation with respective stakeholders is a key requirement during the design and implementation of a PMS in any organisation. However, the results ( $x = 1.88$  &  $\sigma = 1.166$ ) of this article indicate that academics were not consulted during the process and this could lead to the failure of PMS in the institution (Aguinis, 2013). Aguinis emphasised that in order for any PMS to be successful, all stakeholders must be consulted and provided with an opportunity to participate and make input in its development and implementation. This participatory approach provides each party an opportunity for trade-offs and compromise. It is expected that possible aspects of the system that could cause tension during implementation would have been removed at the design stage.

The research study tested the extent to which the design of PMS enabled academics to express the value of their individual contribution towards the institutional goals. The results ( $x = 3.01$  and  $\sigma = 1.312$ ) suggested a slightly poor deviation of respondents from the mean to indicate a neutral position.

These results are inconsistent with recommendations by previous studies (e.g. Aguinis, 2013; Kim, 2011), which emphasised that PMS creates a direct link between employee performance and organisational goals and makes the employee’s contribution to the organisation explicit. Therefore, it is a strategic HRs imperative to align and integrate both individual employee’s performance and group contributions to the overall effectiveness of the organisation (Stanton & Nankervis, 2011).

**TABLE 1:** Results of one-sample t-test statistics for Section A of the measuring instrument.

Section A: Awareness and understanding of the performance management system in your organization	N	Mean,	$\bar{x}$	Standard deviation,	$\sigma$	Standard error of the mean
Q. Awareness of its existence in the institution	313	4.68		0.641		0.036
Q. Definition and communication of its purpose by management	313	3.4		1.226		0.069
Q. Consultation in the design	313	1.88		1.166		0.066
Q. Understanding of the rationale for its introduction	313	3.34		1.266		0.072
Q. Assist in expressing values of my contribution to organisational goals	313	3.01		1.312		0.074
Q. Integration of both individual goals with those of the institution	313	2.88		1.302		0.074
Q. Purpose of PMS achieved	313	2.4		1.252		0.071

PMS, performance management system.

However, contrary to existing literature, majority of the respondents in the present study conceded the failure of PMS to integrate individual academics' goals with that of the institution ( $x = 2.88$  and  $\sigma = 1.302$ ).

The implication of the above finding is explained by Decramer, Christiaens and Vanderstraeten (2007), who noted that institutional goals may sometimes conflict with personal goals, thus resulting in conflict of interests during the system implementation stage. Furthermore, employee performance management generally represents a smaller part of a broader strategic organisational goal. Lack of synergy between individual performance objective and organisational goals may frequently result in tension and lack of cooperation between the different entities (Decramer *et al.*, 2007; Gruman

& Saks, 2011). Respondents were therefore negatively disposed to the effectiveness of the PMS in serving the purpose of its establishment by management. This statement is derived from the statistical evidence ( $x = 2.4$  and  $\sigma = 1.252$ ), which shows that majority of the respondents fall below the mean and a greater deviation from the average position. This finding is consistent with that of Holland (2006), who revealed that only 3 out of 10 employees believed that the performance-review system in their organisations actually assisted in improving their performance towards achieving the organisational goals. Coleman (2012) further argued that it is unrealistic to expect that when a PMS is implemented, employees will automatically and immediately be motivated to perform better.

The role of managers in the implementation of any PMS cannot be overemphasised as they exercise judgement in rating employees' performance. In order to exercise this judgement effectively, managers must be knowledgeable about the rating requirements of the system, and more importantly, be able to objectively justify rating awards to employees who may require such explanation. This study established that a large percentage of academics who responded to the questionnaire do not perceive their reporting line managers to be appropriately qualified in reviewing individual performances ( $x = 3.42$  and  $\sigma = 1.248$ ).

However, the finding on the role of managers in the review of PMS was not supported by Aguinis (2013), who argued that managers are usually in the best position to evaluate

employees' performance in relation to strategic organisational goals. The justification is that managers are responsible for operating strategic goals of the organisation and this provides them with the knowledge of individual employee's performance. The ability and knowledge of managers in implementing the PMS was not in doubt in the present study given the statistical results of  $x = 3.45$  and  $\sigma = 1.168$ , respectively. However, strangely, this result was not supported by Flaniken (2009), who found that in most organisations, managers do not receive sufficient performance training and this results in inadequate knowledge with which to rate employee's performance. There was no explicit indication to suggest that managers were specifically trained in the management of PMS, but respondents in this study did not seem to have problems regarding the ability or knowledge of their managers in implementing the PMS. Notwithstanding the statistical outcome in the present study, any PMS requires targeted performance management training for managers in order to guarantee success (Haines & St-Onge, 2012).

Application of the PMS by line managers should be guided by the relevant institutional policy. To this end, we sought to know from the respondents if this was the case. Although a high percentage of the respondents agreed with this statement ( $x = 3.49$ ), this outcome could not be described as truly representative of the respondents with a  $\sigma = 1.115$ .

Although information regarding the PMS is conspicuous and easily accessible via the institution's Intranet, a reasonable number of respondents could not ascertain whether managers applied the system in accordance with the institutional policy. This, perhaps, could account for the divergent degree of standard deviation recorded ( $\sigma = 1.115$ ). The finding in this study thus reflects a recommendation by Aguinis (2013) that performance management policy must be developed and implemented in such a way that it provides clear guidance to managers and employees on how to deal with performance and capability issues.

Our findings regarding the objectivity of the ratings and quality of feedbacks received from their managers suggest that majority of the respondents considered the rating outcomes as subjective and not objectively representing their performance. Similarly, feedback provided by their managers was neither constructive nor progressive.

**TABLE 2:** Results of one-sample *t*-test statistics for Section B of the measuring instrument.

Section B: Role of managers in ensuring effectiveness of the performance management system	N	Mean,	$\bar{s}$ Standard deviation,	$\Sigma$	Standard error of the mean
Q. Performance review by line manager	313	3.42	1.248		0.071
Q. Knowledge of manager in implementing PMS	313	3.45	1.168		0.066
Q. Application of PMS by manager in accordance with institutional policy	313	3.49	1.115		0.063
Q. Evidential justification of my performance to manager for rating	313	3.74	1.115		0.063
Q. Objectivity of my rating by manager	313	3.4	1.139		0.064
Q. Rating by manager is subjective	313	2.2	1.089		0.062
Q. Explanation of rating outcomes by manager	313	3.29	1.164		0.066
Q. Rating based on performance rather than personality	313	3.47	1.138		0.064
Q. Consistency of rating across board	313	3.03	1.167		0.066
Q. Opportunity to clarify rating by manager	313	3.77	1.028		0.058

PMS, performance management system.



This deduction was derived from the following statistical results obtained from the analysis of respective questionnaire items:  $x = 3.4$  and  $\sigma = 1.139$ ;  $x = 3.74$  and  $\sigma = 1.149$ ;  $x = 3.4$  and  $\sigma = 1.139$ . However, analysis of a related questionnaire item indicated that managers indeed based their performance assessment essentially on the evidence of their work performance rather than individual employee’s personality. This conflicting outcome was derived from the following statistical results, which demonstrated a mean of  $x = 3.29$  and a corresponding standard deviation of  $\sigma = 1.164$ .

According to Flaniken (2009) and Aguinis (2013), raters should focus on the standard of work performance relative to predetermined goals without consideration for extraneous issues (e.g. personal relationship with the employee). Aguinis (2013) further reiterated the need for managers to avoid destructive criticism when reviewing employee performance, no matter how poor they perceive the employee’s performance to be, as this could trigger negative feelings that could result in interpersonal conflict in the workplace.

Any open appraisal system should make provisions for employees to ask raters for explanation and perhaps justification of the rating outcomes. In this article, respondents could not confirm whether they received any form of explanation or justification for their rating outcomes from their managers. This assertion was predicated on the strength of statistical results, which showed a mean and standard deviation that are slightly above average ( $x = 3.29$  and  $\sigma = 1.164$ ) in respect of the rating outcome by managers. Literature (e.g. Karuhanga 2010) recorded lack of provision of adequate feedback to employees by raters as a major challenge in PMSs. This failure on the part of management is contrary to the position canvassed by Aguinis, Joo and Gottfredson (2011) to the effect that a PMS serves as an important two-way communication device, as it clarifies the types of behaviours and results that are valued and rewarded by the organisation. Consistency in the application of performance criteria across the board constitutes an important consideration regarding the integrity of a PMS. This attribute was tested in this article and the results indicated a non-commitment (i.e. no confirmation) by the respondents regarding the consistent application of the PMS criteria to all participants given statistical results of  $x = 3.03$  and  $\sigma = 1.167$ , respectively. This result could be informed by the confidential nature of the PMS, which was conducted on a one-one basis between individual employees and

their managers. Therefore, it is not easy for individual employees to compare performance ratings among themselves. This reasoning could be sustained by Aguinis’s (2013) recommendation, which emphasised the need for managers to always assure individual employees about the confidentiality of personal information collected from them.

There was a low level of participation by respondents in setting the goals of performance management. This was evident in the statistical results of  $x = 3.23$  and  $\sigma = 1.23$ , suggesting that a little above average of the respondents indicated their participation in the process. Given these results, it cannot be said that the entire system was that of ‘command and control’.

A participatory PMS is an important motivational tool for employees in achieving predetermined organisational goals (Gruman & Saks, 2011; Locke & Latham, 2002). Notwithstanding the level of employees’ participation in the goal-setting process, respondents clearly understood their responsibilities regarding the performance goals and standards ( $x = 3.46$  and  $\sigma = 1.167$ ). This outcome is consistent with Aguinis (2013) that managers should discuss key or broad areas of job responsibilities with individual employees for the purpose of performance accountability. It has been theoretically established (Locke & Latham, 1990) that managers should set challenging but achievable goals. Goal setting should be pitched at a level that commensurates with the hierarchical position of individual employees within the organisation. In this article, there was indication that performance goals and standards were at appropriate levels of responsibility. This statement was supported with a statistical result  $x = 3.28$  and  $\sigma = 1.178$ , leading to the conclusion that most academics considered their performance goals and standards as achievable and having been set at an acceptable level of responsibility.

Pienaar and Bester (2007) reported that academics considered PMSs to lack validity, that is, they do not measure all aspects of the job they are supposed to measure. This shortcoming was reiterated by Aguinis *et al.* (2011) that good and credible PMSs should evaluate all major job responsibilities, including behaviours and results. However, majority ( $x = 3.45$  and  $\sigma = 1.270$ ) of the respondents in this article indicated that not all tasks performed by them were taken into consideration when setting performance goals, thus adversely affecting their ratings. Similarly, a large percentage

**TABLE 3:** Results of one-sample *t*-test statistics for Section C of the measuring instrument.

Section C: Satisfaction with performance goals and standard setting	N	Mean, $\bar{x}$	Standard deviation, $\sigma$	Standard error of the mean
Q. Satisfaction with involvement in setting goals and standard	313	3.23	1.23	0.07
Q. Clarity of performance goals and standards	313	3.46	1.168	0.066
Q. Appropriateness of performance goals and standards	313	3.28	1.178	0.067
Q. Accuracy of tasks in relation to goal setting	313	3.45	1.270	0.72
Q. Rating based on agreed goals	313	3.34	1.124	0.064
Q. Goals and standards reflect the most important factors in my job	313	3.23	1.258	0.071
Q. Unilateral imposition of performance goals and standards by management	313	3.23	1.312	0.074
Q. Flexibility of performance goals	313	3.13	1.158	0.065

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of the respondents reported failure of the PMS to capture their entire workload as evidenced in the statistical outcome ( $x = 2.37$  and  $\sigma = 1.27$ ). Barret and Barret (2008) reported a similar finding in their study. They further report that academics who were surveyed worked long hours and during weekends with their extra efforts not captured in the performance rating. Molefe (2010) further submitted that PMSs are likely to be resisted by academics if they do not take into account the teaching workload or distribution of the workload between members of departments.

However, respondents conceded that management did not deviate from predetermined goals and standards in rating their performance. This response was underscored with statistical results of  $x = 3.34$  and  $\sigma = 1.124$  and the outcome is consistent with the submission of consistency with Aguinis (2013), who emphasised that a good PMS should review the extent to which the desired behaviours are being displayed, and whether the desired results have been achieved as agreed upon in the performance agreement. However, flexibility was built around the application of the PMS to enable amendments to performance goals and standards should there be changes in the nature of tasks performed in the future.

The respondents were asked to state whether the PMS respects their independence and freedom regarding their work as academics. One of the core values that academics considered as crucial and non-negotiable for a successful career is the issue of academic freedom and work autonomy. Barret and Barret (2008) asserted that academics have a high regard for work autonomy and a fairly well-developed cynicism about managerial practices, including performance management. Consistent with Barret and Barret's assertion, the results of this article ( $x = 2.67$  and  $\sigma = 1.297$ ) showed widespread resentment among respondents who considered PMS as an orchestrated design by management to undermine their academic freedom and work autonomy. This finding also concurred with that of Pityana (2004) who reiterated that academic duties have long been defined by work autonomy and academic freedom, but such rubrics are now being dictated by other parties in line with the dictate of market economy and other considerations. The perception of management infringement (through PMS) of academic freedom and work autonomy did negatively affect respondents' attitude towards their work. Results obtained in this study ( $x = 2.61$  and  $\sigma = 1.342$ ) alluded to this statement. Luthra and Jain (2012) provided literature support for this

finding by stating that PMS will not achieve its intended purpose if employees lack faith in its implementation.

A major argument in favour of PMS is its inherent ability to fairly distribute organisational rewards. This argument is theoretically supported by Adams' equity theory (1963) which postulated that people compare their work-input (contribution) and outcomes (rewards or bonuses) with those of other workers in order to determine the level of inequity or equity. The outcome of such equity analysis provides an employee with a motivational or attitudinal platform towards the achievement of organisational goals. The performance bonus associated with goal achievement failed to motivate respondents in this study as demonstrated by the statistical results ( $x = 2.86$  and  $\sigma = 1.343$ ). Luthra and Jain (2012) contended that employees may perceive that the PMS is unfair in distributing rewards to better performers. Such perception by under-performers may lead to a situation where they have them to deal with the perceived imbalance between efforts and rewards by altering their performance (putting in less effort).

Two reasons can be attributed to the results presented above. Firstly, employees could consider the bonus as not attractive enough, as articulated by the expectancy theory (Vroom, 1964), to the extent that employees will only work harder if the reward promised is attractive. Secondly, rewards are a great source of motivation for employees, but they can prove to decrease motivation in circumstances where those employees having poor performance records are equally rewarded as high performers (Saeed & Shahbaz, 2011). However, we could not find statistical confirmation as to whether performance bonus motivated poor performers to work harder in order to receive a bonus in the future. The statistical mean of  $x = 2.73$  and a standard deviation of

$\sigma = 1.276$  suggest that respondents were not motivated by the performance bonus to strive for excellence. Vroom's (1964) expectancy theory posits that employees first assess the degree to which improved job performance is expected to lead to desired outcomes. This finding may be explained within the context of an earlier finding in this article, which indicated that the criteria used in calculating performance bonuses by management are not fair as represented by a statistical mean of  $x = 2.69$  and a corresponding standard deviation of  $\sigma = 1.191$ . A possible reason for this outcome could be lack of proper understanding by academic staff of how performance bonuses are calculated as literature

**TABLE 4:** Results of one-sample t-test statistics for Section D of the measuring instrument.

Section D: Satisfaction with performance rating and bonus payment	N	Mean, $\bar{x}$	Standard deviation, $\sigma$	Standard error of the mean
Q. Recognition of academic freedom and work autonomy by the PMS	313	2.67	1.297	0.073
Q. Attitudinal motivation by the PMS	313	2.61	1.342	0.076
Q. Consideration of workload by the PMS	313	2.37	1.27	0.072
Q. All elements of work accounted for during performance review	313	2.74	1.302	0.074
Q. Fair criteria in calculating performance bonus	313	2.69	1.191	0.067
Q. Performance bonus motivates towards achieving excellence	313	2.86	1.343	0.076
Q. Poor performers motivated to improve by performance bonus	313	2.73	1.276	0.072
Q. Fair performance rating	313	3.5	1.11	0.063

PMS, performance management system.

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revealed that employees generally have a negative perception of how PMSs distribute rewards (Luthra & Jain, 2012).

To conclude our discussion of findings, a greater percentage of respondents indicated their general satisfaction with the outcome of their latest performance evaluation which they described as fair. This position was derived from a statistical mean of  $x = 3.5$  and a standard deviation of  $\sigma = 1.111$ , thus confirming earlier findings reported in this article to the effect that raters were knowledgeable in implementing the PMS and that they are rated strictly based on performance rather than personality. Therefore, it can be concluded that PMS in the case institution is more fairly implemented than what is obtainable in other organisations. For example, a study by Flaninken (2009) reported lack of credibility in the implementation of PMS in the organisation that was surveyed. The outcome of another study conducted by Gallup in India in 2010 also indicated that Indian employees, particularly those with 3–10 years' tenure in an organisation, strongly feel that most PMSs are not capable of distinguishing superior performance; therefore, they found such systems to be unfair (Luthra & Jain, 2012).

## Conclusion

This article highlighted the perception and experiences of academic staff regarding the implementation of PMS in an ODL higher educational institution in South Africa. While the PMS was designed as a mechanism through which productivity of academic staff could be objectively determined and managed, the measurement criteria used in the PMS failed to adequately capture all the tasks performed by academics. This raises concern about the validity of the PMS and its fairness in the equitable distribution of organisational outcomes. Implementation of PMS in institutions of higher learning is not entirely undesirable if properly designed and effectively managed. While it is imperative to adopt a participative approach in its design, administration of the system should also be transparent. The outcomes of this study provide an impetus for improving existing and future PMS implementation by management.

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## Competing interests

The authors declare that they have no financial or personal relationships which may have inappropriately influenced them in writing this article.

## Authors' contributions

E.M.M. conceptualised the study, provided literature review and collected primary data. M.O.S. supervised the study and assisted in methodology, data analysis and wrote the manuscript.

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# **Questionnaire**

## Welcome

The current labour market emphasises individual self-management and proactive behaviour, increasing the need for employees to feel capable, competent, and in control of their work environment. The petrochemical industry is no different, more so during a time of global economic volatility. The industry has been faced with many challenges in recent years; challenges forcing industry leaders to look at leadership from a different view in order to take the organisation forward and remain competitive. As an employee, you spend 40 hours in a week at work during which you are expected to perform and remain engaged in your activities as per your performance contract. This questionnaire will attempt to measure the role of authentic leadership and its impact thereof on your performance management process and work engagement.

I am currently enrolled as a master's student in Human Resource Management at the North-West University, Vaal Triangle Campus and I have to write two research articles on a value-adding topic in fulfilment of the requirements to obtain this degree. The title of my research is *Performance management and work engagement in a petrochemical industry: The role of authentic leadership*.

I cannot attempt this research without your participation. Therefore, thank you so much for your willingness to assist.

### How I would like you to complete the questionnaire:

- Please give your first and natural answer - try not to dwell too long on each question
- Please base your answers on how you most recently felt ( $\pm$  the last 3 months; performance cycle FY18 – section C), unless the question asked you to do otherwise

***This questionnaire comprises 63 questions and will take you only about 20 minutes to***



All information will be treated **confidentially** and your **anonymity** will be guaranteed. The information gathered from your participation in this project will be used for no other reason than the purpose of this study. My supervisor and I function under a **strict code of ethics** that forbids us to distribute or use information otherwise. So, please be honest with your responses, as it will help ensure the success of this project. Remember, you have the right to withdraw from this research at any stage – without penalty of whatever nature!

**For further enquiries, please feel free to contact us:**

**Student:** Annah Mohlamme

**Supervisor:** Dr Elsabé Diedericks

**Telephone:** 0829042077

**Telephone:** 016 910 3429

## Section A

### Biographical Questionnaire

1. Gender

Male

Female

2. Race

White

African

Coloured

Indian

Other

3. How old are you?

years

4. How long have you been working for this organisation? \_\_\_\_\_

5. In which function do you work?

Support function

Supply Chain

Commerce

Tech Support

Operations

Site Services

6. How are you employed?

Temporary

Permanent

Fixed term

7. Marital status

Single

Widow/widower

Divorced

Married

Remarried

8. Number of children

9. Home language

Afrikaans	
English	
Sepedi	
isiZulu	
Sesotho	
Setswana	
isiXhosa	
isiTsonga	
Tshivenda	
isiSwati	
Other	

10. Please indicate your **highest level of education / qualifications**

Matric / Grade 12	
FET N4-N6	
University of Technology <b>diploma</b>	
University of Technology <b>degree</b>	
University degree (3 years)	
University honours degree	
University master's degree	
University doctorate	
Other (not included in the options above)	

11. Please give a rough estimate of the total number of **hours** you work in a typical week

<input type="checkbox"/>	Up to 10
<input type="checkbox"/>	31 – 40

<input type="checkbox"/>	11 – 20
<input type="checkbox"/>	41 – 50

<input type="checkbox"/>	21 - 30
<input type="checkbox"/>	51 or more

## Section B

The purpose of this survey is to measure how you view the relations between yourself and your leader. You may agree or disagree with the following statements.

***In statements 12 – 26, please mark your response with an X over the appropriate number.***

***Remember to mark ONLY ONE X per statement!***

1 Disagree strongly	2 Disagree	3 Neither agree/disagree	4		5		
			Agree		Agree Strongly		
12. My leader clearly states what he/she means.	1	2	3	4	5		
13. My leader shows consistency between his/her beliefs and actions	1	2	3	4	5		
14. My leader asks for ideas that challenge his/her core beliefs	1	2	3	4	5		
15. My leader describes accurately the way that others view his/her abilities	1	2	3	4	5		
16. My leader admits mistakes when they occur	1	2	3	4	5		
17. My leader uses his/her core beliefs to make decisions	1	2	3	4	5		
18. My leader carefully listens to alternative perspectives before reaching a conclusion	1	2	3	4	5		
19. My leader shows that he/she understands his/her strengths and weaknesses	1	2	3	4	5		
20. My leader openly shares information with others	1	2	3	4	5		
21. My leader resists pressures on him/her to do things contrary to his/her beliefs	1	2	3	4	5		
22. My leader objectively analyses relevant data before making a decision	1	2	3	4	5		
23. My leader is clearly aware of the impact he/she has on others	1	2	3	4	5		
24. My leader expresses his/her ideas and thoughts clearly to others	1	2	3	4	5		
25. My leader is guided in his/her actions by internal moral standards	1	2	3	4	5		
26. My leader encourages others to voice opposing points of view	1	2	3	4	5		

## Section C

The purpose of this survey is to measure how you view the performance management process (PMP) FY18 in your organisation, the role of managers and all activities associated with the performance management process. You may agree or disagree with the following statements. It is expected of you to indicate your agreement with each of the statements.

***In statements 27 – 55, please mark your response with an X over the appropriate number.***

***Remember to mark ONLY ONE X per statement!***

1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree					
27. My leader makes me aware of the performance management process (PMP) and its existence in the organisation	1	2	3	4	5				
28. 28. My leader defines and communicates the purpose of the PMP to me	1	2	3	4	5				
29. My leader clarifies the rationale behind the PMP	1	2	3	4	5				
30. The PMP assists me in expressing the value of my contribution to the organisation's goals	1	2	3	4	5				
31. My individual goals have been integrated with those of the organisation	1	2	3	4	5				
32. The purpose of the PMP has been achieved	1	2	3	4	5				
33. My leader is knowledgeable in implementing the PMP	1	2	3	4	5				
34. My leader applies the PMP in accordance with organisational policy	1	2	3	4	5				
35. The PMP is evidential justification of my performance to be rated by my leader	1	2	3	4	5				
36. My leader rated me objectively	1	2	3	4	5				
37. My leader explained my rating outcomes to me	1	2	3	4	5				
38. My rating is based on performance rather than personality	1	2	3	4	5				
39. There is consistency of rating across the board	1	2	3	4	5				
40. There is opportunity for my leader to clarify my rating	1	2	3	4	5				
41. Performance goals and standards are clarified	1	2	3	4	5				
42. Performance goals and standards are appropriate	1	2	3	4	5				
43. My performance indicates the accuracy of tasks in relation to goal setting	1	2	3	4	5				
44. My rating is based on agreed goals	1	2	3	4	5				
45. Goals and standards reflect the most important factors in my job	1	2	3	4	5				
46. The PMP comprises performance goals and standards that are imposed upon us by leadership	1	2	3	4	5				
47. Performance goals are flexible	1	2	3	4	5				
48. The PMP influences my attitude positively	1	2	3	4	5				
49. The PMP considers workload	1	2	3	4	5				
50. All elements of work are accounted for during performance review	1	2	3	4	5				
51. Fair criteria are followed in calculating performance bonuses	1	2	3	4	5				
52. The performance bonus motivates me towards achieving excellence	1	2	3	4	5				
53. The performance bonus motivates poor performers to improve	1	2	3	4	5				
54. The performance rating is fair	1	2	3	4	5				

## Section D

Please read the following statements (56 – 64) and indicate how each statement relates to the work you usually do. It is expected of you to indicate your agreement with each of the statements by choosing the appropriate response from the scale (1-7) and marking the number of your choice.

**Remember to mark ONLY ONE X per statement!**

1 Never or almost never	2 Very infrequently	3 Quite infrequently	4 Sometimes	5 Quite frequently	6 Very frequently	7 Always or almost always
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55.	I get so into my job that I lose track of time	1	2	3	4	5	6	7
56.	I am very absorbed in my work	1	2	3	4	5	6	7
57.	I feel I am able to contribute new ideas	1	2	3	4	5	6	7
58.	I am passionate about my job	1	2	3	4	5	6	7
59.	I am enthusiastic about my job	1	2	3	4	5	6	7
60.	I get excited when I perform well on my job	1	2	3	4	5	6	7
61.	I feel a lot of energy when I am performing my job	1	2	3	4	5	6	7
62.	I am full of energy in my work	1	2	3	4	5	6	7
63.	I feel alive and vital at work	1	2	3	4	5	6	7

***The End***

***Thank you for participating!***