

**The Moderating Role of Organisational Culture on Transformational Leadership  
and Organisational Innovation in South African State-Owned Entities**

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## **Abstract**

This study was necessitated by the gap that exists in literature regarding the impact of moderators on the relationship between transformational leadership and organisational innovation. The study formulated hypotheses that would assist in providing insights into the impact that organisational culture has as moderator to transformational leadership and organisational innovation. A quantitative research approach was adopted for the study and The Package for the Social Sciences Package (SPSS) was selected as the statistical software where tests would be conducted. Correlation, regression, descriptive and moderated regression tests were performed on the data set.

The outcomes of this research study found that a positive and significant relationship exists between transformational leadership and organisational innovation. The outcomes further found that organisational culture as a moderator has a positive and significant impact on the relationship between transformational leadership and organisational innovation. This study has contributed to literature by investigating the moderating role of organisational culture on the relationship between transformational leadership and organisational innovation. Recommendations to management teams within South African State-Owned Entities were made regarding how they could use the findings of this study to improve their organisations.

## **Key Words**

Transformational Leadership, Organisational Innovation, Organisational Culture

## **DECLARATION**

*I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.*

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## **1. Chapter 1 – Introduction to Research Problem**

### **1.1 Introduction**

On the basis of the gap in the literature that has been identified, this chapter will provide detail on the purpose and the need for this study. In this study, the moderating role of organisational culture on the relationship between transformational leadership and organisational innovation has been explored and tested. As such, in this chapter the research problem, business requirement, and research objectives for this study. Based on actual data acquired by the researcher, this study is focused at adding to the body of existing knowledge.

### **1.2 Research Background**

Leadership has a history of guiding an organisation's vision and strategy. Employees are influenced to work toward a common objective when leadership is effective (Nanjundeswaraswamy and Swamy, 2014). There are numerous leadership ideologies, including ambidextrous leadership, transactional leadership, servant leadership, and transformational leadership, among others (Ricard et al., 2017; Alblooshi et al., 2020). The function of the leader is to bring fresh, original ideas about how things could be done more effectively, according to (Alblooshi et al., 2020), who argues that organisational innovation is significantly influenced by leadership.

An important construct that was the focus of this study was transformative leadership. Burns first introduced transformational leadership in 1978, and the idea was later developed by (Bass et al., 1994). The leadership style known as "transformational leadership" is one in which the leader is driven and mindful of the needs and objectives of their followers (Bernarto et al., 2020). This leadership approach has been put to the test to see if it influences organisational innovation in a positive or negative way.

The idea of innovation has been known to increase an organisation's competitiveness (Fernandes Rodrigues Alves et al., 2018). Innovation is dependent on a combination of

actions that must occur within an organisation for competitiveness to be realised (Fernandes Rodrigues Alves et al., 2018). Since innovation can take many various forms, this study has chosen to focus on organisational innovation. Organisational innovation is described as new management practises that establish novel goals with the intention of inspiring workers and establishing new organisational objectives (Birkinshaw et al., 2008).

According to research, it might be difficult to implement innovation in bureaucratic settings like State-Owned Entities (SOEs) (Kroll & Kou, 2019 ; Moussa et al., 2018 ; Lekgothoane et al., 2020). Some SOEs' governance structures have caused them to undertake business operations inefficiently. This study aims to understand why SOEs in South Africa (SA) make limited use of innovation as a tool to keep abreast of the latest market trends and patterns, and relevant technology which could assist with increased business performance and competitiveness.

Finally, organisational culture is crucial in determining how employees behave within an organisation. The values and beliefs that are held in common by an organisation are known as its organisational culture. (Sun, 2009, p 1 ). It constitutes the norms and assumptions that are prevalent and accepted within an organisation (Owens and Steinhoff, 1989). Research has postulated that there is a positive and significant relationship between organisational culture and organisational innovation (Büschgens et al., 2013; Lin et al., 2013; Naranjo-Valencia et al., 2012). A study conducted by (Xenikou and Simosi, 2006) found that there is a moderately positive correlation between organisational culture and transformational leadership.

This indicates that transformational leadership and organisational innovation have both been tested against organisational culture and a positive relationship has been established. This study has noted that there is limited research available on understanding the impact of organisational culture on the relationship between transformational leadership and organisational innovation, the evidence of this gap is discussed in section 1.4 of this paper.

### **1.3 Business Need**

State-owned enterprises (SOEs) are businesses that the state owns entirely or in part in order to promote the accomplishment of specific governmental goals (Kowalski et al., 2013). SOEs are characterised by stricter governance rules as compared to private organisations. The Public Finance Management Act (PFMA) governs SOEs in South Africa amongst other acts (Chauke & Motubatse, 2020). This Act seeks to ensure that transparency, accountability and solid financial management is upheld in public entities (Chauke & Motubatse, 2020). The PFMA consists of an increased number of provisions when compared to the Companies Act, meaning that SOEs must conform to both the Companies Act and the PFMA (Chauke & Motubatse, 2020).

Moreover, some of these governance rules have led to SOEs being inefficient in business performance (Kowalski et al., 2013). According to (Kroll and Kou, 2019), a state owned entity can stifle innovation due to the influence of the state on the operations of the entity. This study further suggests that the development of an innovation ecosystem could potentially have a positive impact on innovation in the SOE sector (Kroll & Kou, 2019).

The SOE environment is known to be bureaucratic in nature, which leads to the decreased focus on growing and executing innovation (Moussa et al., 2018). In light of the previous research on SOEs, this study examined the relationship between organisational innovation and transformational leadership within SA SOEs. Second, the influence of the moderating variable (organisational culture) on the relationship between transformational leadership and organisational innovation has been evaluated. These results will be discussed in chapter 6 of this study.

### **1.4 Academic Problem**

Organisational innovation is one of the many forms of innovation that exists within the innovation universe. Organizational innovation is the creative manner that organisations structure their organisational practises and processes. (Jia et al., 2018). Research has

shown that a lack of organisational innovation can lead to poor business performance (Kowalski et al., 2013). Literature has further shown that bureaucratic organisations find it challenging to fully explore innovation and its advantages. (Moussa et al., 2018; Lekgothoane et al., 2020; Kroll & Kou, 2019). This provides a chance for this research study to complement the already-conducted empirical studies.

It is well established that a variety of factors influence organisational innovation, with leadership playing a key role among others, particularly transformational leadership. The definition of leadership states that it is a social influence process in which an organization's goals are achieved by a leader enlisting the willing collaboration of subordinates (Nanjundeswaraswamy and Swamy, 2014 p 57). The execution of organisational changes that promote organisational innovation depends critically on leadership (Mokhber et al., 2018). Researchers (Alblooshi et al., 2020; Bastari et al., 2020; Bednall et al., 2018) have indicated that one of the best leadership philosophies for fostering innovation is transformational leadership.

In contrast to transactional leaders, transformational leaders thrive on creating an environment that encourages high performance, achievement, and intellectual stimulation since these factors have an effect on organisational culture (Xenikou & Simosi, 2006). Consequently, it is possible to draw the conclusion that transformational leadership is one of the crucial components in the establishment of organisational culture (Xenikou and Simosi, 2006). Through a focus on elements like teamwork, shared effort, and knowledge, certain leadership philosophies can stimulate organisational innovation in a company (Alblooshi et al., 2020). For organisational innovation to be successful, leadership must promote knowledge expansion and maintain open lines of communication with employees so that they are motivated in their pursuit of innovation (Alblooshi et al., 2020).

The relationship between leadership and organisational innovation has been amply proven by researchers (Alblooshi et al., 2020; Naguib & Naem, 2018; Mokhber et al., 2018). Organisational innovation and transformational leadership have been shown to be positively correlated in research (Alblooshi et al., 2020; Naguib & Naem, 2018). This relationship is positive because the characteristics of transformational leadership such

as motivation, charisma and coaching (Naguib & Naem, 2018) encourage innovation within an organisation. These characteristics help to create a culture where employees are motivated and feel a part of the organisation. As a result, there is a strong sense of attachment to the organisation, which leads to employees offering ideas on their own initiative to help the business grow.

Positive cultural traits are crucial for any organisation because they foster an environment that supports creativity, innovation, and agility (Li et al., 2018). Positive cultural traits also foster an environment where adopting new ideas or ways of thinking is encouraged. The norms and values that exist within an organisation contribute to the creativity and innovativeness of employees (Li et al., 2018). The inability of SOEs to promote and support employee innovation is a result of their reliance on outdated organisational models, processes, and compliance (Moussa et al., 2018).

Therefore, given what is known about the relationship between transformational leadership and organisational innovation, there still exists a gap in literature as it pertains to the role of moderators (Watts et al., 2020; Khalili, 2017), and understanding how moderators impact on the relationship between transformational leadership and organisational innovation. When evaluating the study's necessity from a business standpoint, it can be said that SOEs struggle to implement innovation as a standard component of operations, which leads to poor performance and is found to be the majority of their inefficiencies (Kowalski et al., 2013).

## **1.5 Objective of the Study**

The study's primary goal was to confirm that there is, in fact, a strong and positive relationship between organisational innovation and transformational leaders. The next objective was to test whether the relationship between organisational culture and organisational innovation is positive. The final objective was to assess whether utilising organisational culture as a moderating variable would have a positive or negative impact on the relationship between transformational leadership and organisational innovation after that association had been established. Statistical tests were used to examine these associations. These objectives have been converted to hypotheses which are detailed

in chapter 3. The choice of organisational culture was made due to the paucity of literature on the role it plays in moderating the relationship between organisational innovation and transformational leadership. By shedding light on how utilising organisational culture as a moderator affects the relationship between transformational leadership and organisational innovation, the study's results are expected to contribute to the body of knowledge by providing a clear view on the function of moderators in shifting relationships.

## **1.6 Significance of the Study**

According to prior research, transformational leadership and organisational innovation are positively correlated (Jia et al., 2018; Li et al., 2018; Zuraik and Kelly, 2019; Prasad and Junni, 2016). By addressing the significance of understanding how organisational culture can be used to moderate the relationship between transformational leadership and organisational innovation, this study theoretically intends to fill a gap in the literature. In order to strengthen the academic body of knowledge about the moderating influence of organisational culture on the relationship between transformational leadership and organisational innovation a theoretical model to this effect has been developed and tested as part of this study.

The study also intends to shed light on the significance and effects of utilising the transformational leadership style to develop and improve the execution of organisational innovation for organisations operating within the SOE sector. It also seeks to explain how a strong organisational culture can promote organisational innovation.

## **1.7 Conclusion**

This chapter serves as both an introduction to the content of this research report and a historical backdrop for the major concepts covered in the following chapters. The purpose of this study was to investigate the moderating effects of organisational culture on the relationship between transformational leadership and organisational innovation. The results contribute to provide a better understanding of the moderating function in determining the impact between the constructs.

## **2. Chapter 2 – Literature Review**

### **2.1 Introduction**

The second chapter of this research study gives an overview and description of the many theories of leadership, with a focus on the transformational leadership theory. Organisational innovation has been thoroughly addressed and evaluated from a theoretical standpoint, and an overview and description of the innovation theory has also been documented. In order to debate the connection between transformational leadership and organisational innovation and to highlight the gaps in the literature that support the necessity for this study, the literature on the topic has been extensively reviewed for this study. Finally, a conceptual model has been used to provide an understanding of the current study.

### **2.2 Leadership**

It's believed that effective leadership involves motivating employees to come up with fresh concepts and more effective methods of doing things, while also giving them a sense of direction and purpose on the significance and relevance of the work required to be done (Hechanova and Villaluz, 2019). Any organisation's trajectory is significantly influenced by the leadership styles used. According to (Maamari and Saheb, 2018), strong leadership is the art of effectively articulating a clear vision so that team members are empowered to strive for the same organisational goal. Leadership has especially demonstrated its ability to foresee how the organisation and its employees will define innovation and creativity within the business (Hughes et al., 2018).

Transactional, transformational, altruistic, servant, and ambidextrous leadership styles are just a few of the many types of leadership that exist. A transactional leader is one that is characterised by being goals and rewards orientated. This type of leader must be constant in maintaining a watchful eye on their team members (Alblooshi et al., 2020; Crossan et al., 2008; Li et al., 2018). By involving them (employees) in managerial decision-making, servant leaders empower their workforce, servant leaders seek to

forge relationships and bonds with employees (Gandolfi and Stone, 2018; Eva et al., 2019).

A leader that exhibits altruistic leadership is one who has no expectation of receiving anything in return for helping their team members grow and develop (Abdillah et al., 2022). Whilst ambidextrous leadership is focused on amplifying team innovation and organisational culture, ambidextrous leadership is challenging because it combines exploring and exploiting the teams behaviours (Alblooshi et al., 2020; Gerlach et al., 2020).

Finally, transformational leaders influence their team members' self-confidence, morale, and motivation so that they collaborate to achieve a common objective (Naguib & Naem, 2018; Bednall et al., 2018). Employees are encouraged to work for a broader shared goal where their contributions will be recognised and valued according to the process-oriented paradigm that transformational leaders adhere to (Alblooshi et al., 2020). As a result, the core construct for this study, transformational leadership, will help to highlight the crucial part that leadership plays in fostering organisational innovation.

### **2.3 Transformational Leadership**

The concept of transformational leadership was presented by (Burns, 1978), and it was refined in the latter years by (Bass et al., 1994). Transformational leadership can be described as a leadership style where the leader is interested in motivating and comprehending the needs and aspirations of their followers (Bernarto et al., 2020). Transformational leadership has four dimensions, namely, Idealised Influence, Inspirational motivation, Intellectual stimulation and Individual motivation (Cahyono et al., 2020, Bass, 1999). These dimensions form the bedrock from which transformational leadership has been built.

Transformational leadership is a leadership style that encourages followers to elevate their thinking above self-interest towards the ideals that take into consideration the greater good (Asbari et al., 2020). Literature assists in defining the four dimensions of transformational leadership as follows; when a leader is admired and revered by his



followers, and is possibly even seen as a role model, this is known as having an idealised influence (Suifan et al., 2018). Inspirational motivation occurs when the leader uses an emotive form of communication that creates meaning and challenges followers to perform at their best (Suifan et al., 2018).

Through motivating followers to question the existing quo and think creatively, intellectual stimulation promotes creativity (Suifan et al., 2018), and finally Individual consideration is demonstrated through the leaders ability coach and mentor followers whilst taking into consideration their skills, needs and talents (Suifan et al., 2018). Transformational leaders are also known to be visionaries, they have the ability to provide clear guidance to their followers on how the vision can be realised through collaboration and joint efforts (Andersen et al., 2018).

Transformational leaders are charismatic meaning that they play an emotive and influential role on their followers (Ozgenel, 2020). The charismatic aspect of transformational leadership is demonstrated through the ability of leader to influence the values and behaviours of followers by motivating them to sacrifice personal goals and work towards the realisation of the organisations vision (Michaelis et al., 2009).

Transformational leadership has become a popular style of leadership because of its relevance and suitability in relation to organisational innovation (Alblooshi et al., 2020). A study by (Hechanova and Villaluz, 2019) discovered that transformational leadership is linked to the capacity to notice changes in the outside environment and guide the organisation toward implementing the appropriate innovation. Transformational leadership is said to have the ability to create a sustainable and continual organisational innovation (Asbari et al., 2020).

However, there have been empirical and theoretical critics of transformational leadership who have said that this leadership style is elitist and non-democratic (Van Knippenberg and Sitkin, 2013). In initial research (Bass, 1985) had argued that transformational leadership was not a very useful style of leadership. However, in later research (Bass, 1997; Asbari et al., 2020) position transformational leadership as a leadership style that aspires to serve the greater good for the benefit of followers.

In South Africa both SOEs and public sector are guided by the Public Finance Management act (PFMA) (Chauke and Motubatse, 2020). The act governs how SOEs are run in South Africa and it provides a clear mandate that SOEs must adhere to so that they contribute to governments vision of the country. The structures within SA SOEs are both known to be bureaucratic (Lekgothoane et al., 2020) which possesses a challenge for innovation to thrive.

Extensive research (Chan et al., 2019; Jia et al., 2018; Alblooshi et al., 2020; Naguib & Naem, 2018) has been done to understand the relationship between transformational leadership and organisational innovation. The studies found that a positive relationship between transformational leadership and organisational innovation exists. The study by (Jia et al., 2018) in particular found that when compared with other leadership styles, transformational leadership was one of the best suited to encourage or create organisational innovation.

A study conducted by Choi et al. (2016) found that transformational leadership encouraged employees to be more innovative thus emphasising the positive relationship between transformational leadership and innovation within an organisation. Though research has been done on understanding the relationship between transformational leadership and organisational innovation. However, there exists a gap in literature on understanding the impact on the relationship between transformational leadership and organisational innovation when organisational culture is used as the moderating variable in the SA SOE context.

## **2.4 Organisational Innovation**

Innovation as a concept is not only based on the technological aspect but it also comprises of a combination of deliberate actions that together assist organisations to become more competitive (Fernandes Rodrigues Alves et al., 2018; Li et al., 2018; Kahn, 2018). Innovation in itself is a broad concept comprising of different types of innovation which includes but not limited to product innovation, business model innovation, process innovation and many others (Fernandes Rodrigues Alves et al., 2018). Innovation enables organisations to navigate the unpredictable and turbulent

environment of business, it can be said that if an organisation has a weak innovation capability it may in future render itself irrelevant in the market (Eidizadeh et al., 2017).

This study has focused on organisational innovation. According to (Birkinshaw et al., 2008) organisational innovation has been defined as new management activities that set fresh objectives with the aim of motivating employees and setting new organisational goals. According to research conducted by (Crossan and Apaydin, 2010) there are three major categories that are arranged in a sequential manner and they make up the multidimensional framework for organisational innovation. These three classifications are outcome-driven, process-driven, and innovation leadership.

Leadership endorsement and support at all levels within the organisation is paramount for the innovation process to be operationalised within the organisation so that innovation outputs are realised (Crossan and Apaydin, 2010). Newer research has expanded on the three categories founded by (Crossan and Apaydin, 2010). Research conducted by (Li et al., 2018) expanded these categories of to measure how well the organisation is performing on organisational innovation.

These expanded categories are innovation enablers, organisational innovation activities, innovation outputs and finally personal innovativeness (Li et al., 2018). The focus of innovation enablers is on creating an atmosphere within an organisation that is favourable to innovation. This includes supportive leadership and a work climate that encourages people to question the status quo (Li et al., 2018). Organisational innovation activities refer to the organisation being geared towards funding research and development for innovation which includes but is not limited to product, process, and business innovation (Li et al., 2018).

Innovation outputs focuses on the outcomes of the innovation process which may include the launching of a new product into the market or the speed at which an organisation is able to release new technology or products into the market (Li et al., 2018). Finally, personal innovativeness speaks to the employees personal motivation to be innovative and this can be encouraged by the organisation through the introduction of rewards and recognition (Li et al., 2018).

Leadership has been said to be the fundamental driver for organisational innovation (Jia et al., 2018; Hughes et al., 2018). In order for innovation capabilities and innovative behaviour to thrive in an organisation leadership needs to actively drive these behaviours so that the anticipated outcomes are realised (Jia et al., 2018). An extensive amount of research has been conducted on the relationship between transformational leadership and organisational innovation (Chan et al., 2019; Jia et al., 2018; Alblooshi et al., 2020; Naguib & Naem, 2018). These studies showed that a positive relationship exists between transformational leadership and organisational innovation.

According to (Moussa et al., 2018) organisations that operate in a bureaucratic environment pay less attention on expanding and implementing innovation. This results in organisations such as these (SOEs) having a poor innovation culture which results in them becoming less competitive. In the recent years innovation has become topical in government owned entities, this is evidenced in articles being published that focus on the significance of innovation in government entities. Innovation is regarded as one of the crucial components to ensuring the successful and efficient running of publicly held entities (Clausen et al., 2020; Demircioglu and Audretsch, 2017). Therefore, organisational innovation is fundamental in any organisation that wants to demonstrate high performance, competitiveness and long-term sustainability (Eidizadeh et al., 2017).

Organisational innovation has been studied across many fields and contexts (Nguyen and Malik, 2020; Alblooshi et al., 2020; Eidizadeh et al., 2017) with limited literature available that focuses on SOEs. This demonstrates that this construct is dynamic and adaptable to any context and field of study. Literature has documented findings on the impact that organisational innovation has on an organisations performance (Hervas-Oliver et al., 2016; Nieves, 2016). There have been studies focusing on how the various forms of leadership impact organisational innovation (Hechanova and Villaluz, 2019; Moussa et al., 2018). Although there has been research done on the impact of culture on organisational innovation (Seifried and Katz, 2015), limited research is available on the moderating role that organisational culture plays on the relationship between transformational leadership and organisational innovation.

## 2.5 Organisational Culture

Organisational culture can be widely defined as “the deeply rooted values and beliefs that are shared by personnel in the organisation” (Sun, 2009, p 1 ). The idea that culture is greatly impacted by the unconscious and unseen is perhaps the most intriguing aspect of it (Schein, 2004). The external behaviours of a group can be observed, but the forces guiding these behaviours are invisible, according to the theory that culture is comparable to a group's personality or character (Schein, 2004). Culture guides and restricts the behaviours of a group through the common norms that exist within a group (Schein, 2004). This study has focused on two vital themes, namely, norms and assumptions (Owens and Steinhoff, 1989).

Norms are critical in influencing the behaviours of individuals within an organisation, they facilitate in the creation of the foundational standards and norms by which the organisation operates (Owens and Steinhoff, 1989). Leadership establishes unwritten standards for individuals within an organisation so that employees can use those norms as a benchmark to assess if employees are in compliance with the organisational culture (Owens and Steinhoff, 1989).

Assumptions are the second essential element of organisational culture because they serve as the foundation for the belief system that establishes norms and other aspects of culture (Owens and Steinhoff, 1989). These assumptions create a moral compass for the organisation and assists employees determine what is acceptable and unacceptable within the workplace.

The norms and assumptions within an organisation frame the perceptions that employees have on the organisations culture. The core belief systems that dominate within an organisation are a function of the leadership styles, the strategic direction and the values of the organisation (Gao, 2017). A study conducted by (Sattayaraksa and Boon-itt, 2018) found that transformational leadership has a positive contribution in fostering an innovative culture within an organisation. Moreover, organisational culture has become one of the critical components that need to be observed in order to measure an organisations ability to innovate and adapt (Maamari and Saheb, 2018).

The relationship between organisational culture and transformative leadership has been the subject of more study (Xenikou and Simosi, 2006). They found that there is a moderately positive correlation between organisational culture and transformational leadership (Xenikou and Simosi, 2006).

International studies have been conducted on the role of organisational culture within SOEs in countries such as Greece and China (Kroll and Kou, 2019). The research found that a hostile environment creates negative emotions amongst employees thus creating a negative culture in the workplace (Kroll and Kou, 2019). Employees working in an organisation that has a culture of negativity will most likely to look for alternative employment and become disengaged (Lekgothoane et al., 2020).

A similar study on the impact of organisational culture in the SOE environment found that positive organisational culture had a positive impact and enabled employees to speak and share ideas freely in the work place (Lekgothoane et al., 2020). Research conducted in South African based SOEs found that a bureaucratic culture is most prevalent (Maleka and Rankhumise, 2014).

The bureaucratic culture within SOEs poses a challenge in fostering an environment where a leadership style like transformational leadership is embraced and encouraged. Research has shown that the SOE environment is known to be bureaucratic which leads to decreased focus on growing and executing innovation (Moussa et al., 2018). Organisational culture combined with strong leadership therefore plays a critical role in determining the success of innovation within an organisation.

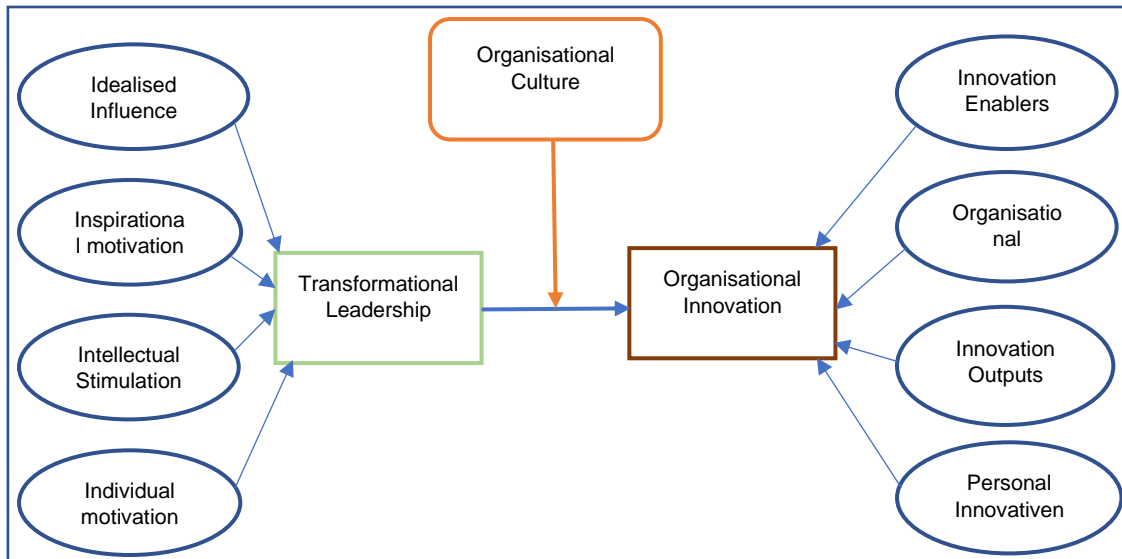
Researchers have studied organisational culture within South African SOEs focusing on its impact of organisational citizenship behaviour and job satisfaction (Lekgothoane et al., 2020), other studies have researched it from perspective of how management practices impact on job satisfaction (Maleka and Rankhumise, 2014). These studies have found that organisations with good organisational culture have a strong and positive results on organisational citizenship and job satisfaction. However, there exists a gap in literature on understanding the moderating impact of organisational culture on the relationship between transformational leadership and organisational innovation

specifically in the context of SA SOEs. This study therefore aims to contribute to literature through the outcomes of this study.

## **2.6 Conceptual Model: Testing the relationship between Transformational Leadership and Organisational Innovation using Organisational Culture as the moderator**

Researchers have over the years proven that a positive relationship exists between transformational leadership and organisational innovation (Jia et al., 2018; Li et al., 2018; Zuraik and Kelly, 2019; Prasad and Junni, 2016). Additional studies have been conducted to verify whether this relationship between transformational leadership and organisational innovation is indeed positive. Researchers in recent times (Naguib and Naem, 2018; Alblooshi et al., 2020; Jia et al., 2018) have found that indeed the relationship between transformational leadership and organisational innovation is positive.

However, relatively little study has been done to examine the role that organisational culture plays as a moderating factor in this relationship. Therefore, for the purposes of this study a model was used to develop the research question and the hypotheses. The independent variable in the model was transformational leadership and the dependent variable was organisational innovation. This model has used organisational culture (independent variable) as a moderating variable to test its impact on the relationship between the independent and dependent variable. The conceptual model (figure1) is a visual representation of this study and it demonstrates the four pillars the feed into transformational leadership, the four components feeding into organisational innovation and the moderating variable which is organisational culture.



**Figure 1:** Conceptual Model

## 2.7 Relationship between Organisational Culture and Organisational Innovation

Researchers have conducted empirical studies (Büschgens et al., 2013; Lin et al., 2013; Naranjo-Valencia et al., 2012) on the relationship between organisational culture and organisational innovation and the outcome of these studies found that there is a significant relationship between organisational culture and organisational innovation. Organisational culture indeed is a positive enabler for organisational innovation however it (organisational culture) can in certain instances become a barrier for organisational innovation (Naranjo-Valencia et al., 2016). An extremely hierarchical organisation is more likely to have a hierarchical culture, which inhibits organisational innovation because decision-making is more likely to be centralised (Naranjo-Valencia et al., 2016).

## 2.8 Conclusion of Literature Review

In conclusion, research has shown how crucial leadership is in encouraging innovation within organisations. Research has showed that transformational leadership is a major catalyst in creating and encouraging innovation within any organisation. In the subject area of innovation, this study has focused on organisational innovation because it is an organisation wide capability that must be created and maintained. The research gap that



was investigated through this study emanated from a lack of substantial literature focusing on the impact of a moderating variable which was organisational culture on the relationship between transformational leadership and organisational innovation. As a result, this study has expanded both the body of academic research and the business world to include this viewpoint.

## **2.9 Conclusion**

The three main constructs of this study transformational leadership, organisational innovation, and organisational culture have been critically discussed in this chapter. Definitions of these constructs have been discussed based on the information found in existing literature. These discussions were centred on the information that is known about these constructs, the information that is not known and finally the gap that has been identified within the literature that justifies the need for this study.

### **3. Chapter 3 – Research Question and Hypotheses**

#### **3.1 Introduction**

In this chapter the main research question and hypotheses are documented along with a graphical representation of the hypotheses on the statistical model that has been developed. The hypotheses for this study are verifying existing relationships that have been found in literature and testing the moderating role of organisational culture on the relationship between transformational leadership and organisational innovation.

#### **3.2 Hypotheses**

The main question that this study sought to answer was does organisational culture as a moderator impact the relationship between transformational leadership and organisational innovation? The relationship between transformational leadership and organisational innovation has been proven to be positive (Alblooshi et al., 2020; Naguib and Naem, 2018). Research has also found that a positive relationship exists between transformational leadership and organisational culture (Jia et al., 2018; Naguib and Naem, 2018). Therefore, the purpose of this study was to investigate how the relationship between transformational leadership and organisational innovation is impacted when organisational culture is used as a moderator.

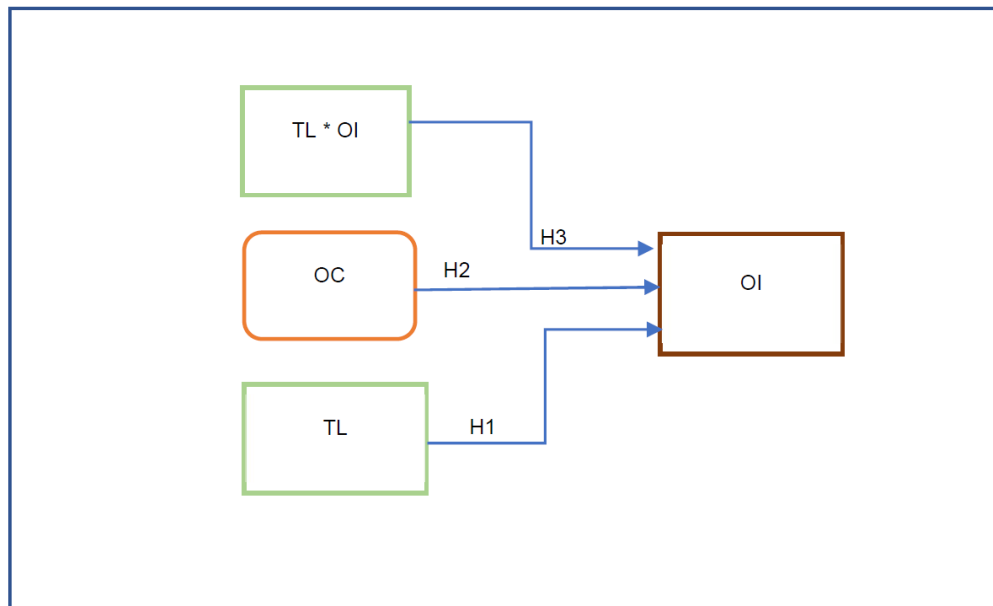
The first objective was to verify whether a positive relationship between transformational leadership and organisational innovation actually existed. The second objective was to test whether a significant and positive relationship existed between organisational culture and organisational innovation. The final objective was to test whether a significant and positive relationship existed between transformational leadership and organisational innovation when organisational culture is used as a moderating variable. These objectives have been converted into hypotheses and these hypotheses are;

*H1: There is a positive and significant relationship between transformational leadership and organisational innovation*

*H2: There is a positive and significant relationship between organisational culture and organisational innovation*

*H3: There is a positive and significant relationship between transformational leadership and organisational innovation when organisational culture moderates this relationship*

Having taken into consideration the gap in literature and the business need, a statistical model (Figure 2) was formulated to assess the impact of using organisational culture (OC) as a moderating variable in the relationship between transformational leadership (TL) and organisational innovation (OI).



**Figure 2:** Statistical Model

### 3.3 Conclusion

This chapter has covered the fundamental question that this study sought to answer. This question was used to formulate the objectives and hypotheses of this study. A statistical model was introduced to graphically map out the relationships that will be tested through this research.

## **4. Chapter 4 - Research Methodology**

### **4.1 Introduction**

This research study has followed a quantitative approach in seeking to answer the research question and hypotheses. The quantitative research approach concentrates on objectivity and it is highly effective when there is a possible quantifiable measure of variables and it can be used to make inferences about a sample population (Almeida, 2017). It is a very structured methodology for collecting data and performing data analysis (Almeida, 2017). The data is analysed through a variety of statistical software tools such as Analysis of Moment Structures (AMOS) and The Package for the Social Sciences Package (SPSS). In this study the researcher has selected to use SPSS to perform the appropriate tests and analyse the outputs thereof.

The tests conducted in this study aimed to test the hypotheses mentioned in chapter 3, these hypotheses are: *H1: There is a positive and significant relationship between transformational leadership and organisational innovation. H2: There is a positive and significant relationship between organisational culture and organisational innovation. H3: There is a positive and significant relationship between transformational leadership and organisational innovation when organisational culture moderates this relationship*

### **4.2 Choice of Methodology**

The research philosophy that has been used for this study is positivism philosophy. The positivist philosophy is defined as a study of observable social realities to produce sound generalisations (Saunders et al., 2018). A positivism philosophy is known to produce data and facts that are unambiguous, accurate and free of human interpretation or bias (Saunders et al., 2018). This philosophy is reliant on the hypothetico-deductive method to quantitatively verify hypothesis where effective relationships could be attained between independent and dependent variables (Park et al., 2020).

The positivist philosophy operates under the assumption that the study of verifiable facts may be applied to scientifically explain relationships between various variables (F.

Crossan, 2003). The positivist philosophical approach has been employed to test all the study's hypotheses in a concise and precise manner.

The research design that has been followed in this study is descripto-explanatory, this design seeks to look for an explanation behind a specific occurrence by finding casual relationships between key variables (Saunders et al., 2018). The transformational leadership and organisational innovation constructs are both well researched and understood therefore an exploratory study would not be appropriate for this research study. This study has tested for causality (William G Zikmund et al., 2010) through investigating the impact on the relationship between transformational leadership and organisational innovation when organisational culture is being used as a moderating variable.

In a similar study by (Demircioglu and Audretsch, 2017) the descripto-explanatory design was used to collect and analyse descriptive statistics to understand the prevailing conditions in public organisations to improve innovation. The approach of the current study was deductive in nature because it tested the theory of transformational leadership and organisational innovation through utilising the appropriate research strategy design to conduct the tests (Saunders et al., 2018).

The time horizon used was cross sectional, this provided a snapshot of the research setting at a specific timeframe (Saunders et al., 2018). Participants were asked to complete a survey based on the constructs that were being studied. These constructs were transformational leadership, organisational innovation, and organisational culture. This study did not cater to any constructs that were not stipulated in research (Setia, 2016) . The time frame for this research study was limited thus a longitudinal study was not appropriate. The population used for this research study consisted of individual employees that work within SOEs in South Africa.

The mono method has been used in the research study because a single data technique was used along with corresponding analysis procedures (Saunders et al., 2009). Data was collected through questionnaires sent to employees within state-owned entities.

Due to the bureaucratic nature of SOEs structured observations were not deemed appropriate.

### **4.3 Population**

A group of people with similar traits is referred to as a population (Zikmund et al., 2010). All of the SOE employees in South Africa made up the study's population. All individual employees employed by South African SOEs comprised the target group. This population was chosen so that the study could obtain a broad understanding from all individuals employed by SOEs.

### **4.4 Unit of Analysis**

A unit of analysis is defined as the population that has been selected to provide information on a subject matter (Zikmund et al., 2010). For the purposes of this study the unit of analysis that was used consisted of individual employees across all the SOEs in South Africa. This unit of analysis was chosen because it aligns to the context of this study. Therefore, individual employees within SOEs were best suited to provide data for this study.

### **4.5 Sampling Method and Size**

According to (Saunders et al., 2018), a sample is a subset of a people within a group or population which can consist of both organisations and people. This research study followed the non-probability sampling technique because the researcher did not have access to a complete list of the population thus making this technique most suitable as opposed to probability sampling which requires a list of the population. The purposive technique was used in this study. Purposive sampling is when a researcher uses their judgement to choose a sample based on potential justifications and hypotheses (Saunders et al., 2018). Consequently, the purposive sample strategy was employed in this study to ensure that the suitable organisations and individuals were chosen (Saunders et al., 2018).

## 4.6 Measurement Instrument

A structured online survey was used in this study. The choice of a structured online survey was made in order to increase the likelihood of receiving greater response rates because it requires less cognitive load from the respondents. The survey was anonymous and self-administered it was focused on investigating the impact of transformational leadership on organisational innovation when organisational culture is used as a moderator. An online survey was selected because it aligned with the research methodology that was selected for the study. The survey had four sections namely, demographics, transformational leadership section, organisational innovation section and finally organisational culture section.

The transformational leadership portion of the survey followed a Multifactor Leadership Questionnaire (MQL-5X) that was created by (Bass and Avolio, 1997). A 5-point Likert scale was used to measure responses, “strongly disagree”=1 to “strongly agree”= 5 (Li et al., 2018). The survey contained the four elements of transformational leadership (Appendix 1) which are Inspirational Motivation, Idealised influence, Intellectual Stimulation and Individualised Considerations (Li et al., 2018; Chan et al., 2019).

The organisational innovation construct was measured under four categories namely, Innovation enablers, Organisational innovation activities, Innovation outputs and Personal innovativeness (Li et al., 2018). The survey followed a 5-point Likert scale ranging from “strongly disagree”= 1 to “strongly agree” = 5. The measuring instrument was selected based on similar research studies conducted by (Li et al., 2018; García-Sánchez et al., 2018) where this measurement instrument was used to collect data in their respective studies.

Organisational culture was measured using the Organisational Culture Inventory (OCI) scale which was developed by (Cooke and Lafferty, 1989). This scale was created to measure the behaviours of people within an organisation whether it is an expected behaviour set by the organisation or implicit behaviour. The survey followed a Likert scale ranging from “strongly disagree”= 1 to “strongly agree” = 5. This scale has been

tested and proven to be an authentic measure of culture within an organisation (Al-Sada et al., 2017).

#### **4.7 Data Collection**

The strategy used to collect data was a survey which was informed by the questionnaire that was prepared. This strategy consisted of the structured collection of data from a substantial population (Saunders et al., 2018). The survey strategy was chosen for this study because it was the most appropriate method to collect data from the population that had been specified (Saunders et al., 2009). The SOE industry consists of over three hundred (300) state owned and parastatal entities (Balbuena, 2014). This is a sizable number of entities, which implies that the most practical way of soliciting information from this population is through surveys.

The survey was pilot tested for a period of seven days. The pilot test was conducted to verify whether the questions were clearly understood and whether there were any spelling mistakes that were not picked up by the researcher (Saunders et al., 2018). The feedback received from the pilot study was used to refine some questions and make them simpler so that they were clearly understood by the respondents. The final survey for the study was subsequently sent using WhatsApp and LinkedIn. The average recommended period of data collection is six weeks (Saunders et al., 2009). The survey was made available online for seven weeks before it was closed. A weekly reminder was sent to encourage respondents to complete the survey.

When the survey was closed, the data received was coded (Appendix 1) on a word document and subsequently transferred to an excel spreadsheet. The data was moved from the excel spreadsheet to SPSS where various tests were applied to the data set.

#### **4.8 Data Analysis**

This study used SPSS to conduct data analysis. The tests used included testing the validity of the data. The validity test was used to measure the accuracy or the extent to



which a score honestly represented the concepts being studied (Zikmund, W. G. et al., 2010). The Cronbach's Alpha test was used to test whether the designed scales were reliable and fit for purpose. Finally, a factor analysis test was conducted. This test forms part of multivariate testing techniques, it is prototypical and uses the interdependence technique (Zikmund, W. G. et al., 2010). The factor analysis technique uses a statistical method to identify a reduced number of factors from a larger number of measured variables (Zikmund, W. G. et al., 2010). There are two types of factor analysis namely, exploratory factor analysis and confirmatory factor analysis.

This study used the explanatory factor analysis technique because there was uncertainty regarding the quantity of factors that may exist amongst the different variables (Zikmund, W. G. et al., 2010). The confirmatory factor analysis is sensitive to sample size meaning that a minimum sample size of 200 is required to run the test effectively. This research study had 117 respondents thus not meeting the requirement for a confirmatory factor analysis.

Descriptive statistics were used to describe to determine the mean, standard deviation, probability values (p-value), and correlation. The mean measures the numerical average of the data set (Zikmund, W. G. et al., 2010). The standard deviation is a measure of the average distance of the distribution to the mean (Hair. et al., 2009). The p-value is used to juxtapose levels of significance to test hypothesis (Zikmund, W. G. et al., 2010). Finally correlations are used to test the strength of the relationships between variables (Zikmund, W. G. et al., 2010). Studies similar to this have used the same descriptive statistics (Li et al., 2018; Khalili, 2017). Inferential statistics tests were used and these were correlation, linear regression, and moderated regression analysis.

The correlation test was used to determine the significance of the relationships between transformational leadership, organisational innovation, and organisational culture. A moderated regression analysis was conducted on the impact that organisational culture would have on the relationship between transformational leadership and organisational innovation.

#### **4.9 Normality**

The data was tested for normality using the skewness and kurtosis z-values (Bai and Ng, 2015). The range for normality is between -1,96 to +1,96 reading from the Z-table (Zikmund, W. G. et al., 2010). Many statistical tests assume that data is normally distributed (Zikmund, W. G. et al., 2010). However, if the data is not normally distributed then it implies that any inferences and explanations made will be invalid and unreliable. The results of the normality test conducted on this study are shared in chapter 5.

#### **4.10 Moderation Analysis**

A moderating variable is used to test whether it changes or influences the main relationship between the independent and dependent variables. The independent variable is known as the predictor (Hair et al., 2019; Zikmund et al., 2010). Thus, when a moderator is used it seeks to understand the extent to which it can influence the relationship between two variables, in this study these variables are transformational leadership and organisational culture. A moderating variable could have a positive or negative effect on the strength of the relationship between variables; it can possibly reverse the direction of the main effect. The main effect is defined as the main relationship (negative or positive) between the predictor and the dependent variable (Hair et al., 2019).

#### **4.11 Data Quality**

Data quality was ensured by running statistical tests that verified whether the data collected in the study was of good quality. Validity tests (Zikmund, W. G. et al., 2010) were conducted to ensure that the questions that were included in the survey were relevant to understand transformational leadership, organisational innovation, and organisational culture. The validity tests verified that these questions were valid and appropriate. The Cronbach's Alpha test was used to determine whether the design scales were reliable and fit for purpose (Taber, 2018). The Cronbach's Alpha tests

proved that the design scales for transformational leadership, organisational innovation and organisational culture were reliable and fit for purpose.

#### **4.12 Limitations**

- A cross-sectional study was conducted for this research thus the data only provided a snapshot of the moderating effect of organisational culture on the relationship between transformational leadership and organisational innovation by SOE employees.
- The total number of respondents was 117, thus the data received could potentially not be fully representative of the population as the purposive sampling technique was used.
- Studies that were investigating similar constructs had similar limitations to that of this study (Khalili, 2017; Jia et al., 2018; Villaluz and Hechanova, 2019)

#### **4.13 Conclusion**

The research methodology that was chosen for this study is fully stated in this chapter. Each component of the process that was chosen has had its specifics thoroughly addressed. This provides the framework for the study's findings, which are described in chapter 5 and 6.

## **5. Chapter 5 - Results**

### **5.1 Introduction**

The findings of the statistical tests carried out for this study are provided in this chapter. The outcomes of the tested hypotheses are also reported, together with the findings of the statistical analysis performed.

### **5.2 Data Collection**

The data was collected from individuals that are employed within South African based SOEs. A total number of 117 responses were received and analysed. Respondents that were part of the pilot study were removed from the data set and the data was cleaned to ensure data integrity.

### **5.3 Data Analysis**

The data was extracted from the platform where the survey was hosted and put onto an excel spreadsheet. The data was cleaned and coded for ease of use for the analysis. The coding document can be found in Appendix 1. The data was coded based on demographic data collected in the questionnaire and the questions for each construct were coded ranging from 1 to 5 with "1" = strongly disagree, "2"= disagree, "3"=neutral,"4"=agree and "5"=strongly disagree.

### **5.4 Assumptions**

Assumptions were made regarding the data set to ensure that the statistical tests produced valid results. The independent and dependent variables were both measured as continuous data and the relationship between these two variables is linear (Zikmund, W. G. et al., 2010). The study also assumes that the data has homogeneity (Lewis-Beck et al., 2004) and it is normally distributed with no outliers in the data set.

## 5.5 Normality

Normality testing was conducted using the skewness and kurtosis z-values (Bai and Ng, 2015). The first test for normality was calculated on the transformational leadership data and the test revealed the statistic is -0.361 and the standard error 0.224. The kurtosis test (Doane and Seward, 2011) produced a result of statistic -0,268 and the standard error number 0,444 (see Table 1). These values fall within the normal scale of -1,96 to 1,96 (Bai and Ng, 2015) therefore the data is considered normal.

<b>Descriptives</b>			Statistic	Std. Error
TL total score	Mean		54.9487	.82242
	95% Confidence Interval for Mean	Lower Bound	53.3198	
		Upper Bound	56.5776	
	5% Trimmed Mean		55.1980	
	Median		56.0000	
	Variance		79.135	
	Std. Deviation		8.89580	
	Minimum		28.00	
	Maximum		73.00	
	Range		45.00	
	Interquartile Range		13.00	
	Skewness		-.361	.224
	Kurtosis		-.268	.444

**Table 1:** Descriptive Test for normality for Transformational Leadership

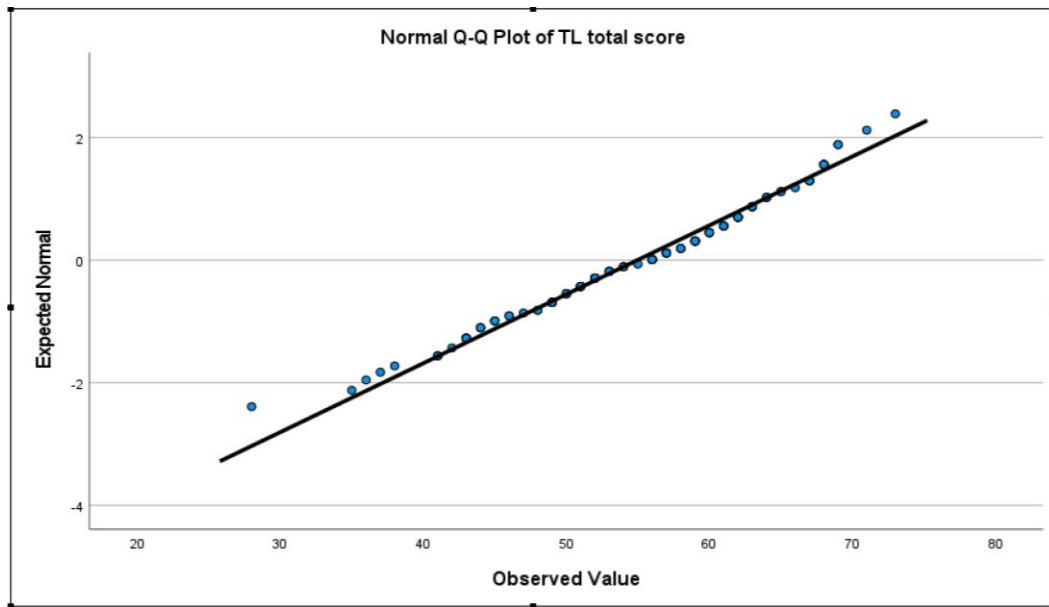
The Shapiro-Wilk test (Razali and Wah, 2011) was also conducted on the data. The null hypothesis of this test is the data set is normal (Ho). However, if the p-value of this data set is below 0.05 then the null hypothesis is rejected. The test showed a p-value of 0,117 (see Table 2) which means that the null hypothesis is accepted therefore the data set is normal.

<b>Tests of Normality</b>						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
TL total score	.086	117	.034	.982	117	.117

a. Lilliefors Significance Correction

**Table 2:** Test for normality using Shapiro-Wilk for Transformational Leadership

The normal Q-Q Plot confirms that the data is normal as depicted in Figure 3. The dots are sitting closely on the line which depicts that the data is approximately normally distributed. The histogram further depicts a normal distribution (see Appendix 2 Figure 8)



**Figure 3:** Q-Q Normality Plot for Transformational Leadership

The initial normality test for organisational innovation produced a result that indicated that the data was not normally distributed (see Appendix 2, Figure 8). Therefore, the data was transformed using the Log 10 principle on SPSS. Once the data was transformed a second normality test was run using Log10\_OITotalScore (see Appendix 2 Table 32). The results from the second test produced a skewness statistic of -0,227 and a standard error of 0.224. The kurtosis result produced a statistic of -0,451 and a standard error rate of 0,444. The result is depicted in Table 3 below.

Descriptives				
		Statistic	Std. Error	
Log10_OITotalScore	Mean	1.4944	.01463	
	95% Confidence Interval for Mean	Lower Bound	1.4655	
		Upper Bound	1.5234	
	5% Trimmed Mean	1.4985		
	Median	1.4914		
	Variance	.025		
	Std. Deviation	.15823		
	Minimum	1.11		
	Maximum	1.78		
	Range	.66		
	Interquartile Range	.22		
	Skewness	-.227	.224	
	Kurtosis	-.451	.444	

**Table 3:** Test for normality for Log10\_Organisational Leadership

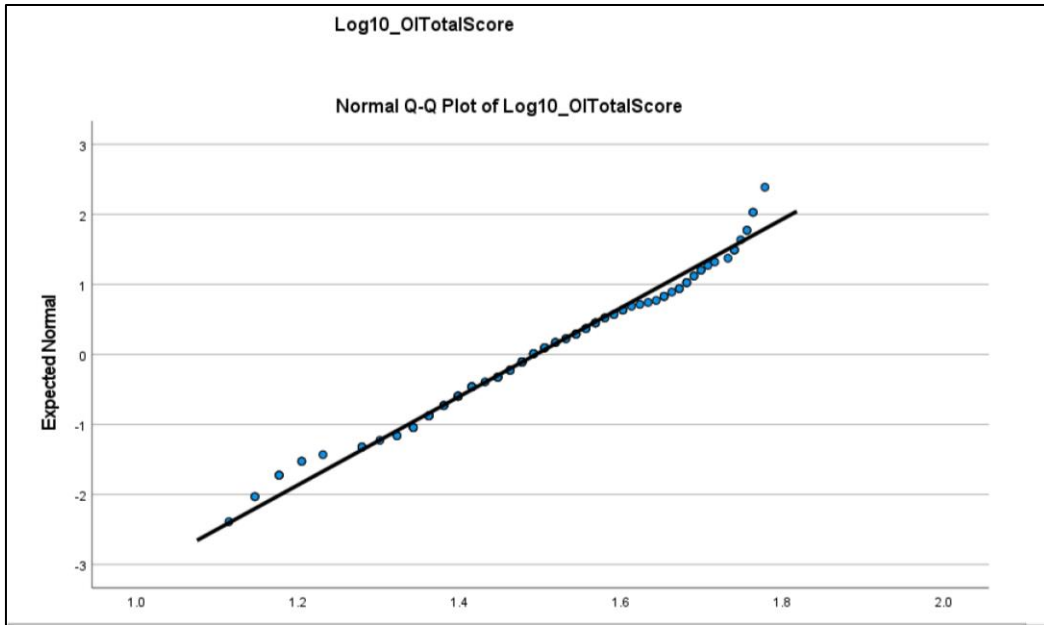
The Shapiro-Wilk test (Razali and Wah, 2011) conducted on Log10\_Organisational Innovation resulted in a p-value of 0,054 (see Table 4) which greater than p-value of 0,05. Therefore, the data can be said to be normally distributed.

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log10_OITotalScore	.056	117	.200 <sup>*</sup>	.978	117	.054

\*. This is a lower bound of the true significance.  
a. Lilliefors Significance Correction

**Table 4:** Shapiro-Wilk Test for Log10\_ Organisational Leadership

Finally, the normal Q-Q Plot confirms that the data is now normal post the transformation that was conducted as depicted in Figure 4 below. The dots a sitting closely on the line which depicts that the data is approximately normally distributed. The histogram further depicts a normal distribution (see Appendix 2 Figure 9).



**Figure 4:**Q-Q Normality Plot for Log10\_Organisational Leadership

## 5.6 Validity Tests

Based on the correlation test, it was determined that all of the survey's questions about transformational leadership had a correlation significance level of 99% (see Table 5) which means that all of the questions are valid to understand the transformational leadership construct therefore validity has been established.



		Correlations													
		TL1	TL2	TL3	TL4	TL5	TL6	TL7	TL8	TL9	TL10	TL11	TL12	TL13	TL total score
TL1	Pearson Correlation	1	.609**	.168	.037	-.003	.030	-.008	.350**	.208*	.163	.220*	.261**	.403**	.391**
	Sig. (2-tailed)		<.001	.071	.693	.974	.747	.930	<.001	.024	.079	.017	.004	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL2	Pearson Correlation	.609**	1	.238**	.014	-.031	.046	.063	.182*	.137	.170	.091	.104	.225*	.297**
	Sig. (2-tailed)	<.001		.010	.884	.740	.622	.500	.050	.142	.067	.328	.263	.015	.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL3	Pearson Correlation	.168	.238**	1	.411**	.260**	.155	.306**	.298**	.307**	.264**	.349**	.249**	.206*	.454**
	Sig. (2-tailed)	.071	.010		<.001	.005	.096	<.001	.001	<.001	.004	<.001	.007	.026	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL4	Pearson Correlation	.037	.014	.411**	1	.733**	.689**	.274**	.201*	.290**	.341**	.431**	.450**	.206*	.603**
	Sig. (2-tailed)	.693	.884	<.001		<.001	<.001	.003	.029	.001	<.001	<.001	<.001	.026	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL5	Pearson Correlation	-.003	-.031	.260**	.733**	1	.718**	.295**	.217*	.256**	.311**	.357**	.320**	.121	.536**
	Sig. (2-tailed)	.974	.740	.005	<.001		<.001	.001	.019	.005	<.001	<.001	<.001	.193	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL6	Pearson Correlation	.030	.046	.155	.689**	.718**	1	.478**	.318**	.397**	.458**	.452**	.473**	.280**	.646**
	Sig. (2-tailed)	.747	.622	.096	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001	.002	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL7	Pearson Correlation	-.008	.063	.306**	.274**	.295**	.478**	1	.360**	.508**	.442**	.345**	.434**	.287**	.528**
	Sig. (2-tailed)	.930	.500	<.001	.003	.001	<.001		<.001	<.001	<.001	<.001	<.001	.002	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL8	Pearson Correlation	.350**	.182*	.298**	.201*	.217*	.318**	.360**	1	.700**	.616**	.515**	.555**	.661**	.735**
	Sig. (2-tailed)	<.001	.050	.001	.029	.019	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL9	Pearson Correlation	.208*	.137	.307**	.290**	.256**	.397**	.508**	.700**	1	.829**	.620**	.555**	.663**	.794**
	Sig. (2-tailed)	.024	.142	<.001	.001	.005	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL10	Pearson Correlation	.163	.170	.264**	.341**	.311**	.458**	.442**	.616**	.829**	1	.627**	.555**	.649**	.799**
	Sig. (2-tailed)	.079	.067	.004	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL11	Pearson Correlation	.220*	.091	.349**	.431**	.357**	.452**	.345**	.515**	.620**	.627**	1	.730**	.566**	.755**
	Sig. (2-tailed)	.017	.328	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL12	Pearson Correlation	.261**	.104	.249**	.450**	.320**	.473**	.434**	.555**	.555**	.730**	.555**	1	.622**	.767**
	Sig. (2-tailed)	.004	.263	.007	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL13	Pearson Correlation	.403**	.225*	.206*	.206*	.121	.280**	.287**	.661**	.663**	.649**	.566**	.622**	1	.740**
	Sig. (2-tailed)	<.001	.015	.026	.026	.193	.002	.002	<.001	<.001	<.001	<.001	<.001		<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117
TL total score	Pearson Correlation	.391**	.297**	.454**	.603**	.536**	.646**	.528**	.735**	.794**	.799**	.755**	.767**	.740**	1
	Sig. (2-tailed)	<.001	.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
	N	117	117	117	117	117	117	117	117	117	117	117	117	117	117

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

**Table 5:** Correlation Table for Transformational Leadership

A validity test was conducted for organisational innovation and the results showed that all the questions in the survey had a correlation significance level of 99% (see Table 6) which means that all of the questions are valid to understand organisational innovation thus proving validity.

		Correlations												
		OI1	OI2	OI3	OI4	OI5	OI6	OI7	OI8	OI9	OI10	OI11	OI12	OI Total Score
OI1	Pearson Correlation	1	.733**	.760**	.561**	.601**	.569**	.459**	.454**	.484**	.709**	.605**	.617**	.798**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI2	Pearson Correlation	.733**	1	.803**	.678**	.702**	.594**	.440**	.493**	.552**	.655**	.564**	.705**	.840**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI3	Pearson Correlation	.760**	.803**	1	.598**	.592**	.523**	.396**	.491**	.467**	.676**	.587**	.607**	.794**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI4	Pearson Correlation	.561**	.678**	.598**	1	.749**	.580**	.573**	.614**	.654**	.546**	.521**	.589**	.816**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI5	Pearson Correlation	.601**	.702**	.592**	.749**	1	.589**	.552**	.556**	.658**	.545**	.608**	.583**	.822**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI6	Pearson Correlation	.569**	.594**	.523**	.580**	.589**	1	.513**	.397**	.489**	.498**	.514**	.484**	.712**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI7	Pearson Correlation	.459**	.440**	.396**	.573**	.552**	.513**	1	.735**	.657**	.413**	.479**	.479**	.713**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI8	Pearson Correlation	.454**	.493**	.491**	.614**	.556**	.397**	.735**	1	.803**	.522**	.576**	.601**	.769**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI9	Pearson Correlation	.484**	.552**	.467**	.654**	.658**	.489**	.657**	.803**	1	.577**	.599**	.626**	.802**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI10	Pearson Correlation	.709**	.655**	.676**	.546**	.545**	.498**	.413**	.522**	.577**	1	.657**	.589**	.778**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI11	Pearson Correlation	.605**	.564**	.587**	.521**	.608**	.514**	.479**	.576**	.599**	.657**	1	.708**	.785**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI12	Pearson Correlation	.617**	.705**	.607**	.589**	.583**	.484**	.479**	.601**	.626**	.589**	.708**	1	.806**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
	N	117	117	117	117	117	117	117	117	117	117	117	117	117
OI Total Score	Pearson Correlation	.798**	.840**	.794**	.816**	.822**	.712**	.713**	.769**	.802**	.778**	.785**	.806**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
	N	117	117	117	117	117	117	117	117	117	117	117	117	117

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

**Table 6:** Correlation Table for Organisational Innovation

The validity test for organisational culture indicated that only the first six questions were valid therefore question 7, 8 and 9 were removed because they were invalid (see Table 7). The validity test was therefore run on six questions and the results showed a correlation significance level of 99% (see Table 8).

		Correlations									
		OC1	OC2	OC3	OC4	OC5	OC6	OC7	OC8	OC9	OC Total Score
OC1	Pearson Correlation	1	.874**	.781**	.780**	.695**	.709**	-.303**	-.394**	-.434**	.772**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117
OC2	Pearson Correlation	.874**	1	.801**	.809**	.745**	.700**	-.257**	-.345**	-.423**	.812**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	.005	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117
OC3	Pearson Correlation	.781**	.801**	1	.782**	.764**	.741**	-.249**	-.375**	-.399**	.799**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	.007	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117
OC4	Pearson Correlation	.780**	.809**	.782**	1	.826**	.701**	-.321**	-.374**	-.432**	.784**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117
OC5	Pearson Correlation	.695**	.745**	.764**	.826**	1	.716**	-.253**	-.377**	-.417**	.770**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001	.006	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117
OC6	Pearson Correlation	.709**	.700**	.741**	.701**	.716**	1	-.191*	-.382**	-.373**	.754**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001		.039	<.001	<.001	<.001
	N	117	117	117	117	117	117	117	117	117	117
OC7	Pearson Correlation	-.303**	-.257**	-.249**	-.321**	-.253**	-.191*	1	.679**	.531**	.131
	Sig. (2-tailed)	<.001	.005	.007	<.001	.006	.039		<.001	<.001	.160
	N	117	117	117	117	117	117	117	117	117	117
OC8	Pearson Correlation	-.394**	-.345**	-.375**	-.374**	-.377**	-.382**	.679**	1	.721**	.033
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	.726
	N	117	117	117	117	117	117	117	117	117	117
OC9	Pearson Correlation	-.434**	-.423**	-.399**	-.432**	-.417**	-.373**	.531**	.721**	1	-.048
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		.606
	N	117	117	117	117	117	117	117	117	117	117
OC Total Score	Pearson Correlation	.772**	.812**	.799**	.784**	.770**	.754**	.131	.033	-.048	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	.160	.726	.606	
	N	117	117	117	117	117	117	117	117	117	117

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

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

**Table 7:** Correlation Table for Organisational Culture

		Correlations						
		OC1	OC2	OC3	OC4	OC5	OC6	OC Total Score
OC1	Pearson Correlation	1	.874**	.781**	.780**	.695**	.709**	.772**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117
OC2	Pearson Correlation	.874**	1	.801**	.809**	.745**	.700**	.812**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117
OC3	Pearson Correlation	.781**	.801**	1	.782**	.764**	.741**	.799**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	<.001
	N	117	117	117	117	117	117	117
OC4	Pearson Correlation	.780**	.809**	.782**	1	.826**	.701**	.784**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	<.001
	N	117	117	117	117	117	117	117
OC5	Pearson Correlation	.695**	.745**	.764**	.826**	1	.716**	.770**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001	<.001
	N	117	117	117	117	117	117	117
OC6	Pearson Correlation	.709**	.700**	.741**	.701**	.716**	1	.754**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001		<.001
	N	117	117	117	117	117	117	117
OC Total Score	Pearson Correlation	.772**	.812**	.799**	.784**	.770**	.754**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	
	N	117	117	117	117	117	117	117

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

**Table 8:** Correlation Table for Organisational Culture

## 5.7 Reliability Tests

The Cronbach's Alpha test for transformational leadership was conducted to test the reliability of the scales and whether they were fit for purpose. The results showed a Cronbach's Alpha of 0,882 (see Table 9) which was above the minimum requirement of 0,65 therefore it has been established that the scales are reliable and fit for purpose.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.882	.876	13

**Table 9 :** Cronbach's Alpha for Transformational Leadership

The Cronbach's Alpha test for organisational innovation produced a result showing a Cronbach's Alpha of 0,944 (see Table 10) which was above the minimum requirement

of 0,65 therefore it has been established that the scales are reliable and fit for purpose for this construct.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.944	.944	12

**Table 10:** Cronbach's Alpha for Organisational Innovation

Finally, the results of the Cronbach's Alpha test for organisational culture produced an outcome of 0,950 (see Table 11) for which was above the minimum requirement of 0,65 therefore it has been established that the scales are reliable and fit for purpose.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.950	.950	6

**Table 11:** Cronbach's Alpha for Organisational Culture

## 5.8 Factor Analysis

### 5.8.1 Transformational Leadership

A factor analysis was conducted on the transformational leadership construct. The Kaiser-Meyer-Olkin (KMO) (Zikmund, W. G. et al., 2010) test produced a result of 0,804 (see Table 12) meaning that the factor analysis was appropriate and it was classified as meritorious. The second test under factor analysis is the Bartlett's test for sphericity which tests whether the factor analysis is suitable. The results indicate a p-value of 0.001 therefore that factor analysis was suitable for transformational leadership.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.804
Bartlett's Test of Sphericity	Approx. Chi-Square	895.624
	df	78
	Sig.	<.001

**Table 12:** KMO and Bartlett's Test for Transformational Leadership

The Eigenvalue 1 rule for Transformational Leadership was conducted to determine the number of components that must be extracted. The results demonstrated that transformational leadership construct has 3 components extracted (see Table 13) and they will represent 68,590% of the variance.

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.545	42.657	42.657	5.545	42.657	42.657	4.289	32.989	32.989
2	2.022	15.555	58.212	2.022	15.555	58.212	2.830	21.772	54.761
3	1.349	10.379	68.590	1.349	10.379	68.590	1.798	13.829	68.590
4	.894	6.876	75.467						
5	.760	5.843	81.309						
6	.584	4.493	85.803						
7	.469	3.611	89.414						
8	.331	2.545	91.959						
9	.296	2.277	94.237						
10	.237	1.822	96.058						
11	.213	1.641	97.700						
12	.162	1.249	98.949						
13	.137	1.051	100.000						

Extraction Method: Principal Component Analysis.

**Table 13:** Total Variance Explained for Transformational Leadership

The questions were then put through one more test to see which ones belonged in which component. This determination was made by interpreting the output from the component matrix (see Table 14).

<b>Component Matrix<sup>a</sup></b>			
	Component		
	1	2	3
TL1	.331	.620	.530
TL2	.237	.537	.648
TL3	.463	-.023	.374
TL4	.605	-.575	.355
TL5	.543	-.637	.306
TL6	.673	-.519	.147
TL7	.589	-.172	-.157
TL8	.743	.317	-.172
TL9	.824	.184	-.301
TL10	.818	.117	-.257
TL11	.796	.015	-.106
TL12	.794	.036	-.107
TL13	.735	.406	-.182

Extraction Method: Principal Component Analysis.  
a. 3 components extracted.

**Table 14:** Component matrix for Transformational Leadership

Component 1 was renamed as Leadership Stimulation because the questions (Q3,Q4,Q6,Q7,Q8,Q9,Q10,Q11,Q12,Q13) fell within this common theme. Component 2 which was renamed as Work Enthusiasm comprised of Q1 and Q5, the common theme of these questions was specific to work enthusiasm. Component 3 was renamed Team Output and it consisted of Q2; this question to seeks to understand the team output component.

### 5.8.2 Organisational Innovation

The factor analysis test for organisational innovation was conduct and the Kaiser-Meyer-Olkin (KMO) test produced a result of 0,909 (see Table 15) meaning that the factor analysis was appropriate and it was classified as meritorious. The Bartlett's test for sphericity results produced a p-value of 0.001 therefore that factor analysis is suitable for organisational innovation.

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.909
Bartlett's Test of Sphericity	Approx. Chi-Square	1108.285
	df	66
	Sig.	<.001

**Table 15:** KMO and Bartlett's Test for Organisational Innovation

The Eigenvalue 1 rule for organisational innovation was conducted to determine the number of components that must be extracted. The results produced 2 components that had to be extracted and they will represent 71.555% (see Table 16) of the variance.

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.436	61.964	61.964	7.436	61.964	61.964	4.881	40.671	40.671
2	1.151	9.591	71.555	1.151	9.591	71.555	3.706	30.883	71.555
3	.705	5.879	77.434						
4	.520	4.336	81.769						
5	.483	4.025	85.794						
6	.396	3.304	89.098						
7	.323	2.692	91.790						
8	.260	2.165	93.955						
9	.251	2.093	96.048						
10	.206	1.719	97.767						
11	.141	1.178	98.945						
12	.127	1.055	100.000						

Extraction Method: Principal Component Analysis.

**Table 16:** Total Variance Explained Test for Organisational Innovation

The component matrix was used to determine which questions were applicable for component 1 and 2 (see Table 17).

Component Matrix <sup>a</sup>		
	Component	
	1	2
OI1	.803	-.366
OI2	.844	-.315
OI3	.799	-.395
OI4	.813	.108
OI5	.822	.041
OI6	.710	-.088
OI7	.701	.509
OI8	.764	.496
OI9	.800	.417
OI10	.785	-.240
OI11	.786	-.036
OI12	.807	-.046

Extraction Method: Principal Component Analysis.  
a. 2 components extracted.

**Table 17:** Component matrix for Organisational Innovation



Component 1 was renamed to Innovative Solutions because the questions (Q1,Q2,Q3,Q5,Q6,Q10,Q11,Q12) had a common theme that was centred on innovative solutions. Component 2 was renamed to Intellectual Stimulation because the questions (Q4,Q7,Q8,Q9) had a common theme of intellectual stimulation.

### 5.8.3 Organisational Culture

The factor analysis test was conducted for organisational culture and the Kaiser-Meyer-Olkin (KMO) test produced a result of 0.905 (see Table 18) meaning that the factor analysis was appropriate and it was classified as meritorious. The Bartlett's test for sphericity results produced a p-value of 0.001 therefore that factor analysis is suitable for organisational culture.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.905
Bartlett's Test of Sphericity	Approx. Chi-Square	686.892
	df	15
	Sig.	<.001

**Table 18:** KMO and Bartlett's Test for Organisational Culture

The Eigenvalue 1 rule for organisational culture was conducted to determine the number of components that must be extracted. The results produced 1 component that had to be extracted and it represented 80.193% (see Table 19) of the variance.

Total Variance Explained						
Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.812	80.193	80.193	4.812	80.193	80.193
2	.370	6.168	86.361			
3	.331	5.520	91.881			
4	.214	3.574	95.456			
5	.154	2.566	98.021			
6	.119	1.979	100.000			

Extraction Method: Principal Component Analysis.

**Table 19:** Total Variance Explained Test for Organisational Culture

The component matrix (see Table 20) was used to determine which questions were applicable for component 1.

Component Matrix <sup>a</sup>	
	Component 1
OC1	.902
OC2	.919
OC3	.907
OC4	.913
OC5	.883
OC6	.847

Extraction Method:  
Principal Component Analysis.

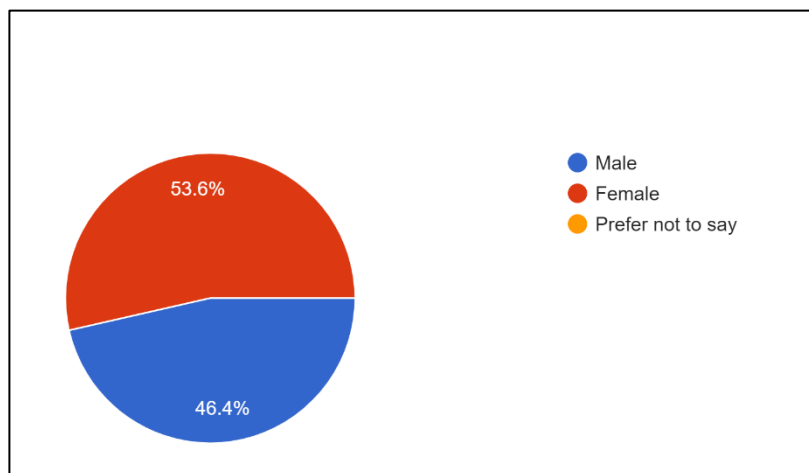
a. 1 components extracted.

**Table 20:** Component Matrix for Organisational Culture

The questions (Q1,Q2,Q3,Q4,Q5,Q6.) that formed part of component 1 were renamed to Innovation Culture as this was the common theme.

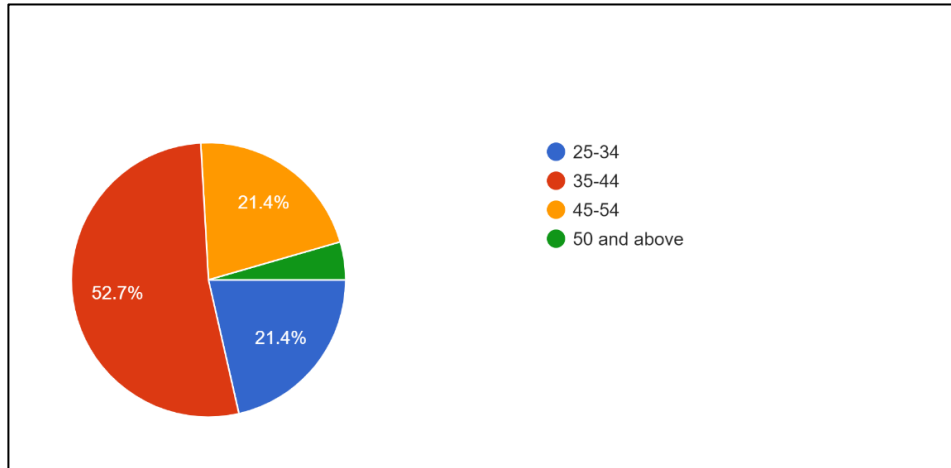
## 5.9 Demographic Data

The survey was completed by 117 respondents, the female respondents equated to 53,6% and the male respondents equated to 46,4% (see Figure 5).



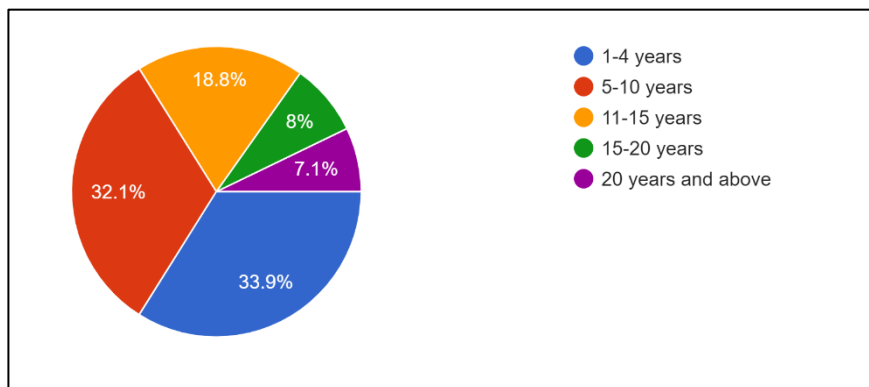
**Figure 5:** Gender Demographics

The age demographic (see Figure 6) of the respondents ranged between 25 through to 50 and above. The respondents constituted of 21,4% who fell in the category 25-34, 52,7% fell in the category 35-44, 21,4% fell in the category 45-54 and 5% fell into the 50 and above category.



**Figure 6:** Age Demographics

Finally, the tenure of the respondents was collected (see Figure 7). The results showed that 33,9% fell into the 1-4 year category, 32,1% fell into the 5-10 year category, 18,8% fell into the 11-15 year category, 8% fell into the 15–20-year category and 7% fell into the 20 years and above category.



**Figure 7:** Tenure Demographic

## 5.10 Descriptive Statistics

The descriptive statistics tests were used to calculate the mean and the correlation of the data set of all of the constructs of the study. The mean measures the average output of the data set and the correlation measure the strength and direction of the relationship between variables(Schober and Schwarte, 2018).

### 5.10.1 Transformational Leadership

The overall mean score for transformational leadership was 3,77 (SD=0,676) as seen in Table 21.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
TL1	117	1	5	4.27	.887
TL2	117	1	5	4.34	.767
TL3	117	2	5	4.56	.635
TL4	117	1	5	3.62	1.136
TL5	117	1	5	3.57	1.053
TL6	117	1	5	3.11	1.112
TL7	117	1	5	3.78	1.051
TL8	117	1	5	3.78	1.168
TL9	117	1	5	3.73	1.064
TL10	117	1	5	3.62	1.151
TL11	117	1	5	3.66	1.190
TL12	117	1	5	3.62	1.081
TL13	117	1	5	3.45	1.193
TL	117	1.62	5.00	3.7778	.67649
Valid N (listwise)	117				

**Table 21:** Mean and Standard Deviation for Transformational Leadership

### 5.10.2 Organisational Innovation

The overall mean score for organisational innovation was 2,77 (SD=0,980) as seen in Table 22.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
OI1	117	1	5	3.29	1.218
OI2	117	1	5	2.68	1.265
OI3	117	1	5	3.13	1.263
OI4	117	1	5	2.91	1.352
OI5	117	1	5	2.80	1.268
OI6	117	1	5	3.25	1.152
OI7	117	1	5	2.79	1.332
OI8	117	1	5	2.29	1.218
OI9	117	1	5	2.26	1.199
OI10	117	1	5	3.15	1.139
OI11	117	1	5	2.45	1.235
OI12	117	1	5	2.28	1.312
OI	117	1.08	5.00	2.7728	.98021
Valid N (listwise)	117				

**Table 22:** Mean and Standard Deviation for Organisational Innovation

### 5.10.3 Organisational Culture

The overall mean score for organisational culture was 2,73 (SD=1,11) as seen in Table 23.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
OC1	117	1	5	2.69	1.256
OC2	117	1	5	2.72	1.224
OC3	117	1	5	2.71	1.218
OC4	117	1	5	2.85	1.212
OC5	117	1	5	2.74	1.269
OC6	117	1	5	2.68	1.264
OC	117	1.00	5.00	2.7322	1.11007
Valid N (listwise)	117				

**Table 23:** Mean and Standard Deviation for Organisational Culture

### 5.10.4 Test for Correlation between Transformational Leadership and Organisational Innovation

A correlation analysis provides information on the strength and the direction of the relationship between two variables (Schober and Schwarte, 2018). Correlation

measures the impact that a change in one variable has on another variable, this change can be in the same or opposite direction (Schober and Schwarte, 2018). This means that if one variable has a positive increase and the second variable also has a positive increase then a positive correlation has been established, if the opposite is true then a negative correlation is established (Schober and Schwarte, 2018). A Pearson's correlation test was conducted, the scale for Pearson's ranges from +1 to -1, +1 indicates a positive relationship, -1 indicates a negative relationship and 0 indicating no relationship (Schober and Schwarte, 2018).

The Pearson's correlation test was conducted between transformational leadership and organisational innovation and the results showed that transformational leadership (TL) produced 0,661 (see Table 24) correlation. This result demonstrates a significant and positive correlation between transformational leadership and organisational innovation (OI) at 99% significance level. The p-value (sig) was <0.001 which implies that the relationship between TL and OI is significant.

<b>Correlations</b>			
		TL total score	Log10_OITotal Score
TL total score	Pearson Correlation	1	.661**
	Sig. (2-tailed)		<.001
	N	117	117
Log10_OITotalScore	Pearson Correlation	.661**	1
	Sig. (2-tailed)	<.001	
	N	117	117

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

**Table 24:** Correlation between TL and Log10\_OI

### 5.10.5 Test for Correlation between Organisational culture and Organisational Innovation

A correlation test was done between the moderating variable (organisational culture) and the dependent variable (organisational innovation) to determine whether a positive or negative shift in organisational culture impacts organisational innovation in any way.

The outcome of the test produced a correlation of 0,772 (see Table 25) which demonstrates that a significant and positive relationship exists between organisational culture (OC) and organisational innovation (OI). The p-value (sig) was <0.001 which implies that the relationship between OC and OI is significant. Therefore, organisational culture is a predictor for organisational innovation.

<b>Correlations</b>			
		OC Total Score	Log10_OITotal Score
OC Total Score	Pearson Correlation	1	.772**
	Sig. (2-tailed)		<.001
	N	117	117
Log10_OITotalScore	Pearson Correlation	.772**	1
	Sig. (2-tailed)	<.001	
	N	117	117

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

**Table 25:** Correlation between OC and Log10\_OI

### 5.11 Regression Analysis

Regression analysis is one the techniques used to measure the linear association between the independent and the dependent variable (Zikmund, W. G. et al., 2010). The regression analysis was used because of its ability to be specific on the cause and effect between dependent and independent variables (Zikmund, W. G. et al., 2010). A regression test was conducted between OI (dependent) and TL (independent) to establish the cause and effect between these variables. A positive correlation between the independent and dependent variable has been established in prior tests and normality of the data has also been established.

The R square value is 0,437 (see Table 26) which means that 43,7% of the change in OI can be attributed to TL. The ANOVA table (see Table 27) produced a p-value of <0,001 which means that transformational leadership has a significant impact on organisational innovation. The test produced a beta (0.012) which greater than 1,96 thus proving significance (see Table 28). The t test output was of 9,456 (see Table 28).

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.661 <sup>a</sup>	.437	.433	.11919

a. Predictors: (Constant), TL total score  
b. Dependent Variable: Log10\_OITotalScore

**Table 26:** Model Summary for Regression

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.270	1	1.270	89.420	<.001 <sup>b</sup>
	Residual	1.634	115	.014		
	Total	2.904	116			

a. Dependent Variable: Log10\_OITotalScore  
b. Predictors: (Constant), TL total score

**Table 27:** ANOVA Test

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.848	.069		12.247	<.001	.711	.985
	TL total score	.012	.001	.661	9.456	<.001	.009	.014

a. Dependent Variable: Log10\_OITotalScore

**Table 28:** Coefficients Test

## 5.12 Moderated Regression Analysis

A moderated regression was conducted to ascertain whether organisational culture plays a moderating role in the relationship between transformational leadership and organisational innovation. The moderating variable is denoted as TransLOrgC in the tables below. The results showed an output of Rsquare = 0,779 (see Table 29) which means that 77,9% of the change in OI can be attributed to the moderator (organisational culture) has a significant impact on the relationship between transformational leadership and organisational innovation. The ANOVA test show a p-value of <0,001 (see Table



30) thus indicating that the moderator is significant The coefficient table shows a result of  $B = 0,019$ ,  $t = 5,897$  and a  $p$ -value =  $<0,001$  (see Table 31). The outcome of this test implies that organisational culture has a significant and positive moderating impact on the relationship between transformational leadership and organisation innovation because the  $p$ -value ( $<0,001$ ) is less than  $0,005$ .

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.882 <sup>a</sup>	.779	.773	.07541

a. Predictors: (Constant), TransLOrgC, TL total score, OC Total Score  
b. Dependent Variable: Log10\_OITotalScore

**Table 29:** Model Summary Table for the Moderator

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.262	3	.754	132.560	<.001 <sup>b</sup>
	Residual	.643	113	.006		
	Total	2.904	116			

a. Dependent Variable: Log10\_OITotalScore  
b. Predictors: (Constant), TransLOrgC, TL total score, OC Total Score

**Table 30:** ANOVA Table for the Moderator

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.101	.083		13.313	<.001	.937	1.265
	TL total score	.001	.001	.062	.836	.405	-.002	.004
	OC Total Score	.005	.002	.184	2.156	.033	.000	.009
	TransLOrgC	.019	.003	.679	5.897	<.001	.012	.025

a. Dependent Variable: Log10\_OITotalScore

**Table 31:** Coefficients Table for the Moderator

### **5.13 Conclusion**

The correlation tests conducted for this study have found that a significant and positive correlation exists between transformational leadership and organisational innovation thus validating H1. Furthermore, the correlation test conducted between organisational culture and organisational innovation found a significant and positive correlation between these two variables thus validating H2. A set of regression tests were conducted, the first being a linear regression between transformational leadership and organisational innovation.

The results of this regression found a significant and positive association between transformational leadership and organisational innovation thus validating H1. The final test that was conducted was a moderated regression where organisational culture was the moderating variable. The results from this test showed that there was a significant and positive impact of the moderating variable (OC) on the relationship between transformational leadership and organisational innovation therefore H3 is accepted.

## **6. Chapter 6 – Discussion of Results**

### **6.1 Introduction**

This chapter discusses the findings from the statistical tests that were conducted. The results highlight the significance of the relationship between transformational leadership and organisational innovation and the effect that organisational culture has a moderator on this relationship. In regard to the outcomes of this study, a comparison of the literature will be explored. The research objectives and study hypotheses will serve as a guide for the sections of this chapter.

The discussions in this chapter will make a contribution to the understanding of the relationship between transformational leadership and organisational innovation in the context of SA SOEs. Furthermore, it will provide insights into the impact that organisational culture has as a moderating variable on the relationship between transformational leadership and organisational innovation.

### **6.2 Research Objective One**

The focus of this research object was to determine whether a positive relationship exists between transformational leadership and organisational innovation. Therefore, tests were conducted to validate whether this theoretical relationship truly exists between these variables.

#### **6.2.1 Hypothesis One**

*H1: There is a positive and significant relationship between transformational leadership and organisational innovation*

This study's intention was to enhance existing literature by looking into the relationship between transformational leadership and organisational innovation through the lens of a moderating variable (organisational culture). Statistical tests were used to validate the hypotheses of this study. The tests focused on establishing whether relationships exist

amongst variables along with ascertaining the strength and the significance of these relationships.

The correlation results of this study demonstrate that indeed a significant and positive relationship exists between transformational leadership and organisational innovation. These outcomes align to the outcomes of similar studies (Chan et al., 2019; Jia et al., 2018; Alblooshi et al., 2020) where a positive relationship between transformational leadership and organisational innovation was also found.

A regression analysis test conducted further showed that there is a significant and positive association between transformational leadership and organisational innovation. Delving further into literature, researchers have sought to investigate the association between transformational leadership and organisational innovation. Studies conducted by (Mokhber et al., 2018; Alblooshi et al., 2020; Naguib and Naem, 2018) have found that a positive and significant association exists between transformational leadership and organisational innovation. These results corroborate with the results found in this study.

The finding of this study implies that leaders within SA SOEs should actively strive to adopt and implement the transformational leadership style within their organisations because this leadership style has a strong influence on the creation and improvement of organisational innovation. Many researchers (Alblooshi et al., 2020; Bastari et al., 2020; Bednall et al., 2018) have done studies that compare the various leadership styles and their ability to create and enable innovation and these studies have found that transformational leadership is one of the best leadership styles to enable and create innovation within an organisation. Using the statistical results produced from this study the H1 hypothesis has been proven to be valid and thus accepted.

### **6.3 Research Objective Two**

The second research objective is aimed at ascertaining whether a significant and positive relationship exists between organisational culture and organisational innovation. Tests were conducted to verify whether this research objective was valid.

### **6.3.1 Hypothesis Two**

*H2: There is a positive and significant relationship between organisational culture and organisational innovation*

The SOE environment has been found to be highly bureaucratic (Moussa et al., 2018) thus the amount of red tape within these institutions makes innovation difficult. However, the correlation test conducted in this study to test the validity of this hypothesis found that there was a significant and positive relationship between organisational culture and organisational innovation. This result is contrary to the outcome of a study by (Naranjo-Valencia et al., 2016) which found that organisational culture can impede innovation at times.

Organisational culture drives the behaviour of employees within an organisation (Schein, 2004; Xenikou and Simosi, 2006) therefore for organisational innovation to thrive leaders must inculcate an organisational culture that is geared towards innovation (Sun, 2009). This study has demonstrated that organisational culture has a significant and positive influence on organisational innovation thus if an organisation has a culture that supports innovation, then organisational innovation will thrive. Similar studies (Büschgens et al., 2013; Lin et al., 2013; Naranjo-Valencia et al., 2012) have corroborated the results of this study by further confirming that there is a significant and positive association between organisational culture and organisational innovation.

The outcome of this study therefore validates H2 which states that there is a positive and significant relationship between transformational leadership and organisational innovation.

### **6.4 Research Objective Three**

The final research objective sought to ascertain whether the use of a moderator would have any impact on the relationship between transformational leadership and organisational culture. The moderating variable used was organisational culture as there

was very little literature available on the impact that organisational culture has on the relationship between transformational leadership and organisational culture.

#### **6.4.1 Hypothesis Three**

*H3: There is a positive and significant relationship between transformational leadership and organisational innovation when organisational culture moderates this relationship*

In chapter 1 it was noted that there is very literature available that speaks to the moderating role of organisational culture on the relationship between transformational leadership and organisational innovation (Watts et al., 2020; Khalili, 2017). This study has provided some insight into the effects of utilising a moderator to evaluate the impact it has on the relationship between organisational innovation and transformational leadership. A moderated regression test was conducted and the outcome of this test showed that the impact of organisational culture as a moderator was positive and significant in changing the direction and strength of the relationship between transformational leadership and organisational innovation.

This finding indicates that transformational leadership and the creation and implementation of organisational innovation will both benefit from a positive shift in organisational culture within SOEs. Therefore, the result from this test demonstrates that organisational culture has a positive and significant impact on the relationship between transformational leadership and organisational innovation and thus H3 is accepted.

#### **6.5 Conclusion**

In summary this study set out to test three hypothesis namely, *H1: There is a positive and significant relationship between transformational leadership and organisational innovation*, *H2: There is a positive and significant relationship between organisational culture and organisational innovation* and finally *H3: There is a positive and significant relationship between transformational leadership and organisational innovation when organisational culture moderates this relationship*. This study has found that H1 was valid, which aligns with studies conducted by other researchers in the field (Asbari et

al., 2020; Hechanova and Villaluz, 2019; Chan et al., 2019; Jia et al., 2018; Alblooshi et al., 2020) which have confirmed that indeed a positive relationship between transformational leadership and organisational innovation exists.

H2 was also found to be valid based on the outcomes of tests that were done in this study. Similar studies conducted by other researchers (Sun, 2009; Büschgens et al., 2013; Lin et al., 2013; Naranjo-Valencia et al., 2012) have found that organisational culture does have a significant and positive impact on organisational innovation. Finally, H3 has been accepted through the findings of this study. The results prove the hypothesis correct thus organisational culture has a positive and significant effect in moderating the relationship between transformational leadership and organisational innovation.

## **7. Chapter 7 – Conclusions and Recommendations**

### **7.1 Introduction**

The purpose of this study was to determine whether the relationship between organisational innovation and transformational leadership is moderated by organisational culture. The main research question guided the development of the study's objectives and hypotheses. This study supported prior studies' results that there is a positive relationship between organisational innovation and transformational leadership. Furthermore, this study tested the moderating effect of organisational culture on the relationship between transformational leadership between organisational innovation.

The research background was discussed in Chapter 1 of this study, which focused on the core constructs of transformational leadership, organisational innovation, and organisational culture. Leadership has been regarded as a crucial component of an organisation as it is responsible for steering the organisation towards a specific direction (Alblooshi et al., 2020). To examine its impact on organisational innovation, the transformational leadership style was chosen.

A transformational leader is one who is charismatic and inspires employees to work towards a greater purpose (Bernarto et al., 2020). The need for this study within the South African SOE context was driven by the inefficiencies that are prevalent within these organisation (Kowalski et al., 2013), these inefficiencies are mainly driven by the bureaucracy and the governance that is prescribed for SA SOEs (Chauke & Motubatse, 2020) .

According to the literature review in chapter 2, leadership is crucial to the development and adoption of innovation within an organisation (Fernandes Rodrigues Alves et al., 2018). The attributes of transformational leadership, such as charisma, inspiration, and vision, were given particular attention. These attributes were noted by researchers (Chan et al., 2019; Jia et al., 2018; Alblooshi et al., 2020; Naguib & Naem, 2018) to have a positive influence on organisational innovation. When management puts up new goals



aimed at motivating staff and creating new organisational objectives, organisational innovation takes place (Birkinshaw et al., 2008).

Innovation within SOEs can be stifled by the dominant influence of government on the operations (Kroll and Kou, 2019). The findings of this study have therefore illuminated the advantages of SA SOEs adopting a more transformational leadership style as well as the advantages it would have on fostering and promoting organisational innovation inside these institutions. The academic contribution of this study has added to the limited research that exists regarding the impact of moderators particularly organisational culture on the relationship between transformational leadership and organisational innovation.

## **7.2 Key Findings**

The main purpose for this research was to understand whether organisational culture as a moderating variable has a positive and significant impact on the relationship between transformational leadership and organisational innovation. To this end, a conceptual model was introduced in chapter 2 to illustrate this dynamic. In chapter 3 the conceptual model was made into a statistical model that illustrated the hypothesis that would be test and the interactions between the independent and the dependent variables.

The research question for this study informed the creation of the appropriate hypotheses. Pearson's correlation tests were performed between transformational leadership and organisational innovation after the assumptions had been verified. The results of this test showed that a significant and positive correlation exists between transformational leadership and organisational innovation.

The finding of this study corroborated with those found in previous studies (Chan et al., 2019; Jia et al., 2018; Alblooshi et al., 2020; Naguib & Naem, 2018) that also sought to investigate the correlation between transformational leadership and organisational innovation. This outcome validated hypothesis 1 which was documented in chapter 3. A correlation between organisational culture and organisational innovation was conducted to understand whether a positive relationship exists between these two variables. The

outcomes of the test showed that organisational culture has a positive relationship with organisational innovation. The outcome of this test aligned with findings from other researchers (Büschgens et al., 2013; Lin et al., 2013; Naranjo-Valencia et al., 2012) that found that the correlation between organisational culture and organisation innovation is positive.

The fundamental contribution of this study to the theoretical understanding of the role of moderators has been on understanding the moderating role of organisational culture on the relationship between transformational leadership and organisational innovation (Watts et al., 2020; Khalili, 2017). A moderated regression analysis was conducted and the results showed that organisational culture does significantly and positively moderate the relationship between transformational leadership and organisational innovation.

This indicates that when an organisation has a healthy organisational culture then transformational leaders are able to drive employees towards being more innovative thus increasing the chances of having successful organisational innovation. The hypothesis (H3) that sought to test the impact of the moderating variable (OC) on the relationship between transformational leadership and organisational innovation has been proven to be valid and acceptable.

### **7.3 Recommendations for Business**

Literature has demonstrated that SOEs operate in a bureaucratic environment (Chauke & Motubatse, 2020; Kowalski et al., 2013) and this bureaucracy tends to stifle innovation within these organisations. The constant interference of government in the operations of SOEs also causes a challenge because these institutions find themselves with limited room to be creative (Kroll and Kou, 2019). However, this study has found that employees within South African based SOE want their leaders to be more transformational in their leadership style.

Therefore, management within this sector needs to strongly consider exploring and utilising the characteristics of transformational leadership to drive innovation within their

organisations. This study has proven that transformational leadership has a positive effect on organisational innovation therefore it is imperative that management teams across SA SOEs to incorporate transformational leadership characteristics.

The second consideration for management would be that they take a serious look into the culture that is dominant within their organisations because culture drives employees behaviour (Kroll and Kou, 2019). This study has found that organisation culture has a significant and positive role to play in the successful implementation of organisational innovation within SOEs in SA when transformational leaders are at the helm. Therefore, it is of utmost importance that management drive their organisations towards adopting a more innovative culture.

This can be accomplished by encouraging employees to be more innovative, recognising employees who have exceptional ideas, and having management make it clear that the organisation has a decent tolerance for failure when it comes to innovative ideas. These activities will assist management in encouraging innovative behaviour among employees, which will start to change the organisational culture.

#### **7.4 Research Limitations**

The data was collected from 117 respondents that work across various SOEs in South Africa over a short period of time because the study was cross sectional (Saunders et al., 2018). This is a very small sample size and thus the outcomes of this study may not be sufficient to make a conclusive generalisation about the population. Furthermore, due to the time horizon being cross sectional as mentioned, the results only provide a snapshot of the data based on the duration of time that the survey was made available. As a mitigant for the sample size limitation factor analysis was employed to create new factors.

The survey was self-administered therefore respondents were able to select their answers as they deemed fit. The limitation of this type of survey is that it creates an opportunity for bias which may have an impact on the results of the study (Lavrakas,

2008). As attempt to manage this limitation the data was thoroughly checked to remove any responses that seem abnormal.

## **7.5 Future Research**

It has been mentioned in this study that there is very limited literature the focuses on the South African SOE context as it relates to the subject of transformational leadership and innovation and more specifically the impact of organisational culture as a moderator. The suggestion for future research would be to replicate this study using a longitudinal time frame so that the results are more representative of the population.

Further research can be done on the role of mediators in the relationship between transformational leadership and organisational innovation again focusing on South African SOEs. Finally, future research can be done on the dominant leadership styles found in South African SOEs and the success or failures rates of these leadership styles. These studies will increase the volume of literature available on South African SOEs and it will provide researchers with a perspective on the intricacies of South African SOEs.

## **7.6 Conclusion**

This chapter has highlighted the key contributions of this study to academia and business and has made recommendations on how the findings of this study can be integrated into business by management teams. It has provided insight of the moderating role that organisational culture plays in the relationship between transformational leadership and organisational innovation which was found to be a gap in existing literature. Finally, research limitations of this study were highlighted and recommendations for future research were documented.

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## **9. Appendix 1 - Data Coding**

### **Demographics**

#### 1) Age:

1. 25-34
2. 35-44
3. 45-54
4. 50 and above

#### 2) Gender:

1. Male
2. Female
3. Prefer not to say

#### 3) Tenure:

1. 1-4 years
2. 5-10 years
3. 11-15 years
4. 15-20 years
5. 20 years and above

### **Transformational Leadership (TL) Questionnaire Statements**

#### 1) I am willing to work over-time to reach the team goals:

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

#### 2) I am willing to make sacrifices to achieve team goals

1. Strongly Disagree
2. Disagree

3. Neutral
4. Agree
5. Strongly Agree

3) I understand the impact of my teams outputs on the organisation

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

4) Leadership clearly articulates the vision

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

5) Leadership is enthusiastic and optimistic about the organisation

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

6) I am inspired by the leadership team

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

7) I am encouraged to ask questions when I don't understand

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

8) My job keeps me intellectually stimulated

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

9) I am encouraged to come up with different problem-solving techniques

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

10) I am encouraged to be innovative

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

11) Leadership encourages me to develop myself

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree



12) I feel empowered to do my job

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

13) My abilities are well utilised in my role

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

### **Organisational Innovation (OI) Questionnaire Statements**

1) Leaders in my organisation encourage innovative thinking

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

2) My organisation rewards innovative solutions

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

3) Leadership challenges us to find a better way of doing things

1. Strongly Disagree
2. Disagree

3. Neutral
4. Agree
5. Strongly Agree

4) My organisation has budget allocation for the development of innovative products/services

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

5) My organisation places emphasis on research and development (R&D) for innovation initiatives

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

6) Leadership encourages cross-collaboration between different business units to generate new ideas

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

7) My organisation has recently produced new products into the market

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree

5. Strongly Agree

8) My organisation releases new products quickly into market

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

9) My organisation is first to market with innovative products/services

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

10) I am encouraged to be creative

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

11) I am measured on my ability to innovate

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

12) When I propose innovative solutions and they are implemented, I get rewarded

1. Strongly Disagree
2. Disagree

3. Neutral
4. Agree
5. Strongly Agree

### **Organisational Culture (OC) Questionnaire Statements**

#### 1) Leadership encourages us to be boldly innovative

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

#### 2) Leadership drives an innovative culture within my organisation

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

#### 3) There are clear systems and procedures in place that enable innovation

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

#### 4) Innovation is encouraged within my organisation

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

5) My work environment is geared towards innovation from a systems and processes perspective

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

6) My KPIs are reflective of an innovative culture

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

7) My organisation has a bureaucratic culture which stifles innovation

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

8) My organisation has too much red tape

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

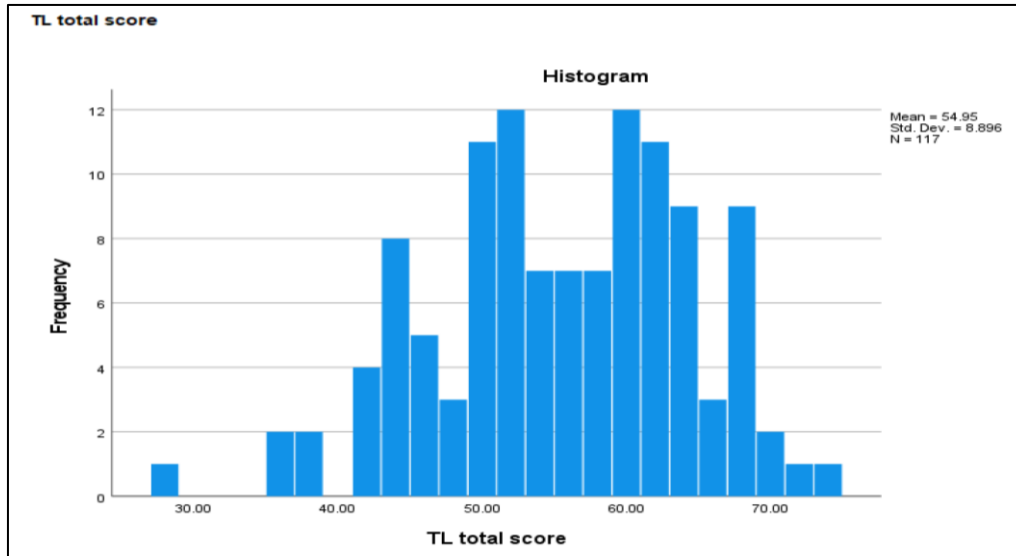
9) It's difficult to get an innovative solution approved in my organisation

1. Strongly Disagree
2. Disagree
3. Neutral

4. Agree
5. Strongly Agree

## 10. Appendix 2 – Statistical Figures

### Histogram for Transformational Leadership



**Figure 8:** Histogram for Transformational Leadership

### Normality Test for Organisational Innovation

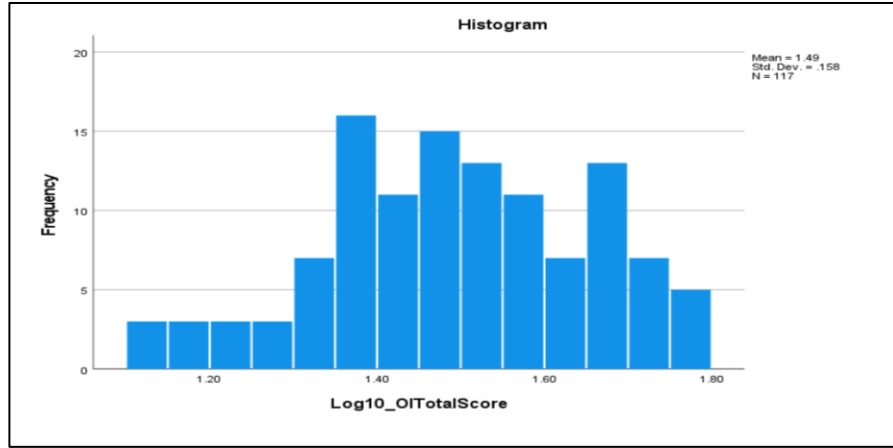
Descriptives				Statistic	Std. Error
OI Total Score	Mean			33.2735	1.08744
	95% Confidence Interval for Mean	Lower Bound		31.1197	
		Upper Bound		35.4273	
	5% Trimmed Mean			32.9691	
	Median			31.0000	
	Variance			138.356	
	Std. Deviation			11.76247	
	Minimum			13.00	
	Maximum			60.00	
	Range			47.00	
	Interquartile Range			16.00	
	Skewness			.489	.224
	Kurtosis			-.571	.444

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
OI Total Score	.099	117	.007	.958	117	.001

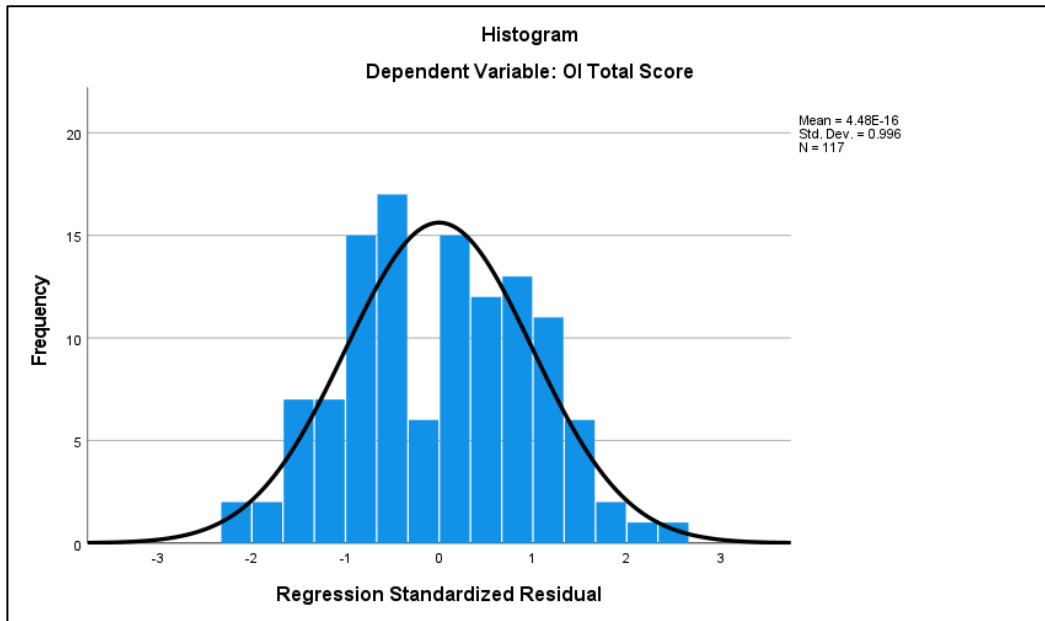
a. Lilliefors Significance Correction

**Table 32:** Skewness, Kurtosis and Shapiro-Wilk for Organisational Innovation



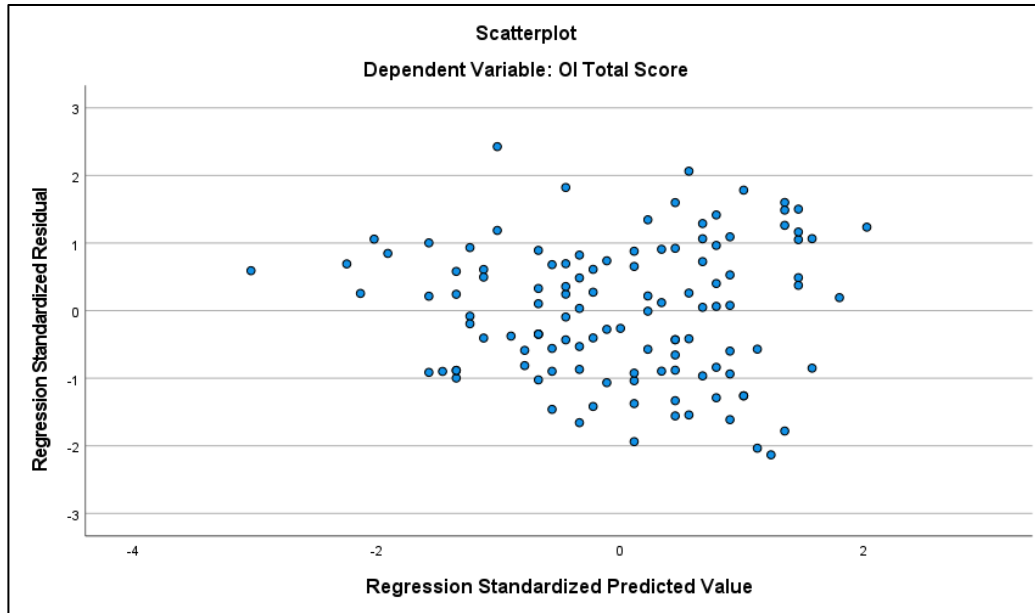
**Figure 9:** Histogram for Log10\_Organisational Innovation

### Linear Regression Figures

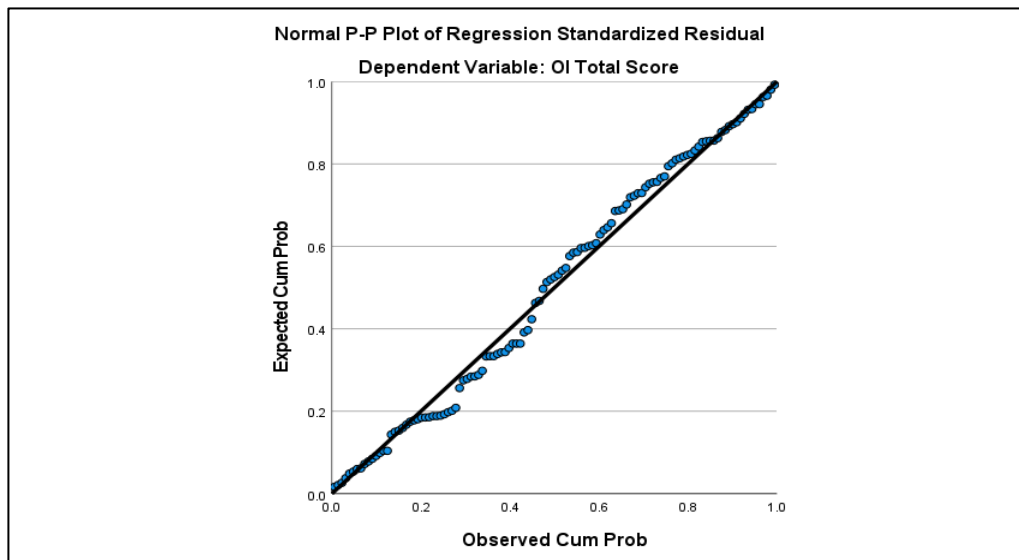


**Figure 10:** OI regression Histogram





**Figure 11:** OI regression Scatterplot



**Figure 12:** OI Normal P-P Plot of Regression

## 11. Appendix 3 : Ethical Clearance

**Gordon Institute  
of Business Science**  
University of Pretoria

**Ethical Clearance  
Approved**

Dear Refilwe Chaka,

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

[Ethical Clearance Form](#)

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.